Modern Arranging and Composing

Volume I

The Elements of Harmony

MODERN HARMONIC TECHNIQUE

"A comprehensive survey of basic harmonic and melodic materials for the present-day composer and arranger."

by Gordon Delamont

Printed in U.S.A.

BIOGRAPHICAL SKETCH

GORDON DELAMONT was born in Moose Jaw, Saskatchewan, Canada, and received his first musical training in Vancouver, British Columbia. While in his early teens he was trumpet soloist with the world famous Vancouver Kitsilano Boys Band. This band, conducted by Mr. Delamont's father, has won major contests the world over, starting with the 1933 Chicago World's Fair and culminating in four consecutive first place ratings at the World Music Festival in Kerkrade, Holland, in 1958, 1962, 1966 and 1970 respectively.

Mr. Delamont's career as a professional trumpet player began in 1939 in Toronto, and in the following twenty years he played with virtually all of Canada's leading dance and studio orchestras. During this time he also formed and directed his own band which enjoyed great success in Canada until he started his present career as a teacher of harmony, arranging and related subjects. He opened his own studio in 1950, and since then has spent full time in teaching and writing, his two primary interests. His students have come from the United States and Europe, as well as Canada, and may now be found in successful musical positions the world over.

Along with teaching, Mr. Delamont has pursued his own writing in the field of jazz composition and arranging. He has had works commissioned and performed on CBC, CTV, and on many concerts and concert series. He has also written a number of articles for such magazines as Canadian Music Journal, Music Across Canada, Crescendo, and Jazz Monthly.

His rich musical heritage and experience, combined with his scholarly approach in teaching and writing, make Mr. Delamont an eminently qualified author of this text on modern harmony, composing, and arranging. It is our opinion that his works will stand for many years as the most comprehensive and definitive approach to serious study of these subjects.

The Publisher

FOLLOWING IS THE COMPLETE LIST OF BOOKS ON MODERN ARRANGING & COMPOSING BY GORDON DELAMONT:

MODERN HARMONIC TECHNIQUE (Volume I) *The Elements of Harmony*

MODERN HARMONIC TECHNIQUE (Volume II) *The Advanced Materials of Harmony*

MODERN ARRANGING TECHNIQUE *A comprehensive approach to arranging and orchestration for the contemporary stage band, dance band, and studio orchestra*

MODERN CONTRAPUNTAL TECHNIQUE *An examination of non-chordal counterpoint for the contemporary composer and arranger, including pan-diatonicism, quartal harmony and poly-tonal technique*

MODERN TWELVE-TONE TECHNIQUE *An examination of serial writing for the contemporary composer and arranger*

MODERN MELODIC TECHNIQUE *An examination of melody for the contemporary composer and arranger, including a survey of psychological, technical, and structural considerations, and the song form*

FOREWORD

This book and Volume II have been written with the intention of serving:

1. The beginner who needs a text which will provide a thorough understanding of the theory which underlies the harmony of modern (North) American arranging, jazz, and all areas of composition which use scales and chords as a starting point. The text assumes only that the beginner has a basic ability to read music, a knowledge of the treble and bass staffs, a little playing and listening experience, and an interest.

2. The novice arranger, who is often hampered by the lack of a proper foundation in harmonic technique and part movement.

3. The professional arranger or composer, who may find that this codification of harmonic principles will provide him with a deeper understanding, and perhaps some fresh avenues of musical thought.

These are not books on arranging or composition. Rather, they deal with the harmonic vocabulary which is applied to arranging and composition. The order in which the material is presented is not the only possible order, and teachers may wish to re-arrange or modify it. But, a student working without the advantage of a teacher, will find that the text and exercises follow a graded and logical path.

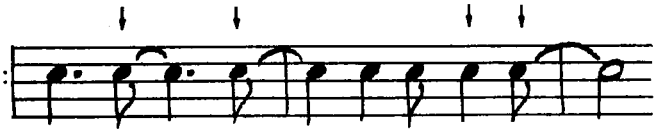
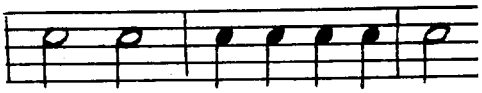
The exercises, with a few exceptions, are short (sometimes no longer than a single rhythmic unit) and each is aimed at the specific area of the text which it accompanies. Teachers may, of course, alter the exercise material or provide different assignments according to the needs of the student.

The terminology used throughout the text is fairly traditional and fairly standard, but the student will find that music theory shows a great deal of inconsistency and conflict in word usage and nomenclature. Effort has been made herein to define those terms which are not self-explanatory, but a dictionary of terms is a valuable accessory for any musician.

Terminology is never, in any case, the important thing; it merely allows oral and written communication. The real meaning of any technical consideration in music is its *sound*. The student, who after a year or two, can converse with a dazzling array of technical terms and erudite references, but can't "hear" the movement of a dominant to a tonic chord, has wasted his time. **The development of the ear must be stressed at every step of the way**. Every proposition, from the first page to the last, must be comprehended aurally. Unfortunately, the intellectual comprehension of musical techniques can proceed at a faster rate than can the development of the ear, but the gap between the two must be kept as narrow as possible. It is essential that the student be aware, from the outset, that the notes he writes and the notes he looks at represent a succession of sounds, and he must bend every effort to "hear" these sounds mentally. He should avail himself of an instrument (preferably a keyboard instrument) to help him become familiar with harmonies and harmonic progressions, but, the instrument should be used as an ally and not as a crutch. Work should be done away from the instrument, as soon, and as much, as possible. Unless continuous effort is made to develop the "inner ear" the study of harmony has no purpose.

The attitude taken to harmonic and melodic elements in these texts is "non-stylistic", in the sense that no attempt is made to teach the practices of any particular composer or arranger, or any particular "school" of musical technique. Rather, the books attempt to present the principles which support present day uses of *tonal harmony and melody*. Nevertheless, any succession of notes or harmonies creates its own "style", and the student must show concern for stylistic consistency, which is always indispensable to musical coherence. The first few bars, and sometimes the first few notes, will establish the style of any passage of music. The student must learn to retain the style he himself establishes.

The reader will note that the use of the "rhythmic anticipation", i.e.:

this:  instead of: 

is notably absent in Volumes I and II. While it is one of the most distinctive rhythmic devices in jazz and jazz oriented music, its use is usually inappropriate to the "part writing" idiom with which the text is primarily concerned (for reasons which are discussed in Chapter IV). And, in any case, the use of rhythmic syncopation does not affect the basic principles of melodic and harmonic movement. Furthermore, "rests", which are common and often necessary in practical writing, are generally not used herein. This is because students too often tend to use them to get out of difficulties, or as a means of avoiding grammatical errors. In the more advanced exercises of Volume II, a judicious use of rests is acceptable.

This series includes three books: "Modern Harmonic Technique", Volumes I and II, and "Modern Arranging Technique". They have been published separately in order to minimize the unit purchase price and because a text as comprehensive as this would be uncomfortably bulky in one volume.

This first book of the series aims to:

1. Provide the student with the basic components of harmony and melody.
2. Present a practical theory of harmonic progression in major and minor keys.
3. Aid the student in the development of his visual, mental, and above all his aural appreciation of the fundamental sounds of tonal harmony.

The student who gives close attention to the text, the exercises, and the sample solutions will reach proficiency in these things.

The three volumes are, however, interdependent and Volume II is a direct extention of Volume I. The student who profits from this book will, it is hoped, continue immediately into Volume II. In it he will find more advanced, and in many cases more familiar, sounds.

The beginner is advised to learn the fundamentals well. The materials of this volume will provide him with excellent preparation for his ultimate practical aims in music, no matter what these aims are. The time and effort he takes to erect a solid foundation will contribute immeasurably to his success with, and probably more important, his enjoyment of the whole magnificent business of writing music.

Finally, a healthy skepticism is encouraged. With the exception of purely structural elements, there is nothing that can be called a "law" herein. *If a situation arises where a principle is violated but the resulting sound is good, the principle, at that point, is probably wrong.*

Gordon Delamont

PREFACE

All of the considerations which are part of the writing of music have something to do with either rhythm, melody, or harmony. Rhythm, the temporal or duration factor in music, is the most important of these elements and is, in fact, the only one which can exist alone. No judgment on the effectiveness of any harmonic or melodic point can be made without taking into account its relationship to the rhythm.

But rhythm will not be isolated as a specific area of inquiry. Rather it will be a continuing concern, and the relationship of harmonic and melodic movements to the strong and weak beats will at all times be noted.

This text begins with an examination of scales because in any music which is related to a "key", a scale is the first and basic ingredient. For instance, a passage of music is said to be in "C major" when the melody and harmony is drawn from or related to the notes of the "C major scale".

While there may be more than fifty different scale types in use in the world today the area of music with which this text is concerned draws from about ten. A student interested in a more extensive survey of scales should have no trouble finding appropriate reference texts.

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Chapter 1

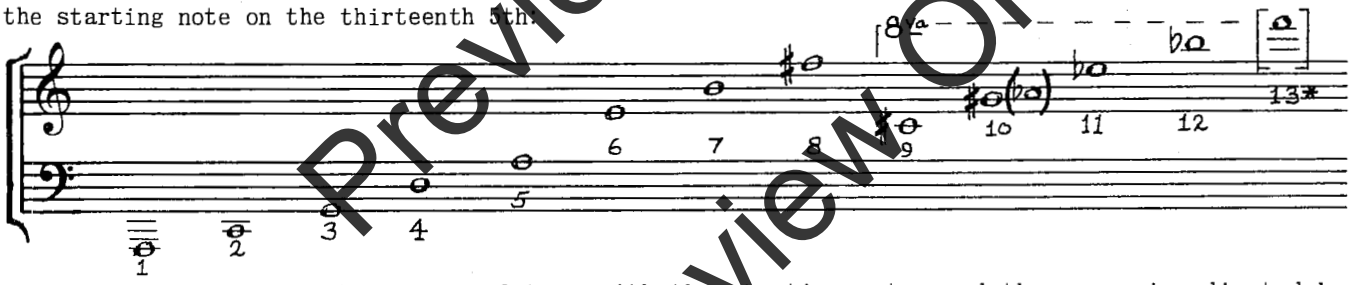
SCALES

INTRODUCTORY

Definition: *A Scale is a group of notes assembled in some sort of ascending and/or descending ORDER. A scale normally covers an octave, and usually moves in steps (i.e., Major or Minor 2nds).*

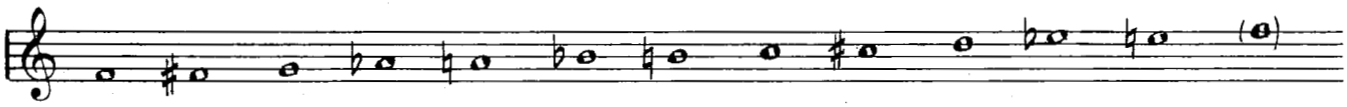
The scale functions as a "stock-pile" of notes, from which the **MELODIES** (the HORIZONTAL aspect of music) and the **HARMONIES** (the VERTICAL aspect of music) are drawn. The scale provides an ORDER and an ORGANIZATION for the music. Music writing is primarily the problem of manipulating the melodic and harmonic relationships in the scale being used. The nature and quality of the music is, to a great degree, a result of the nature and quality of the scale. **Example**: "Major" music sounds different from "Minor" music because the quality of the scales is different.

The fundamental scale of **"Western" or "non-Oriental"** music, the scale from which all others are drawn, is the **12 tone scale**. This "12 tone scale" is derived from the **cycle of 5ths**. With the exception of the octave, the perfect 5th is the simplest interval (Note: a discussion of scales requires reference to "intervals" as, for instance, Major 2nds, Minor 3rds, Perfect 4ths, etc. The reader who is unacquainted with interval grammar and terminology will find a detailed discussion in Chapter 2, pages 21 to 24). A succession of perfect 5ths, up or down, will reach a transposition of the starting note on the thirteenth 5th.



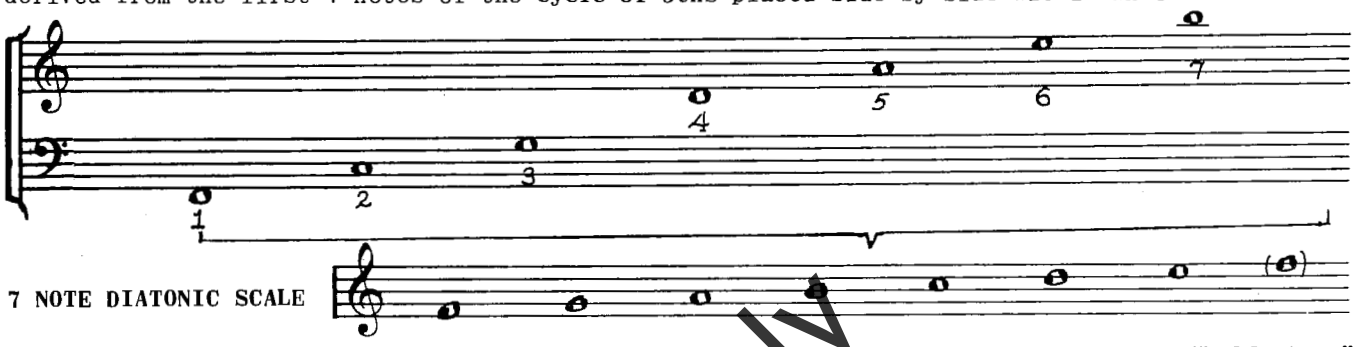
*In reality the 13th note is out of tune with the starting note, and the error is adjusted by spreading it out over all 12 notes. The result is called **"equal temperament"**, which is the presently accepted method of tuning.

THE 12 TONE SCALE



The 12 Tone Scale results when the 12 notes of the "cycle of 5ths" are placed side by side within an octave. When adjusted to equal temperament it divides the octave into 12 equal "half-tones" or "half-steps".

In the 12 tone scale all of the notes have an identical character and quality, because each is separated from the next by a similar "half step" interval. None is more "active" than any other; they differ only in **pitch**. In the 20th century, music which uses the full 12 notes as a starting point has emerged. This music involves the use of "tone rows", etc. However, nearly all traditional "Western" music, and all music in the popular field and most in the jazz field, is based on the **7 note DIATONIC SCALES** (scales in which there is a different "letter" for each note). These are derived from the first 7 notes of the **cycle of 5ths** placed side by side within an octave:

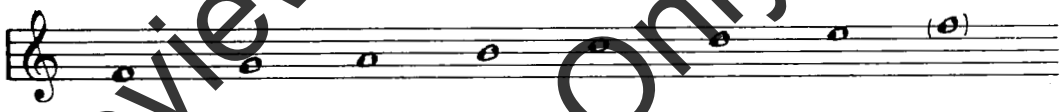


7 NOTE DIATONIC SCALE

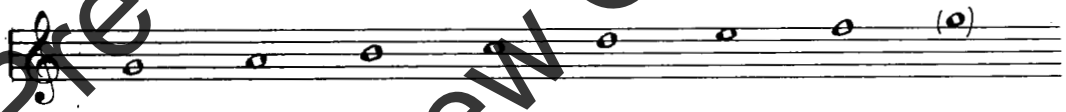
This produces an unequal division of the octave (i.e. the division is made up of some "half steps" and some "whole steps"), and the very inequality of the division leads to a varying quality in the notes. As can be heard, some are "active" and some are "restful". It is the manipulation of these qualities which is the essence of **TONAL** music (music with a clear "tone center" or "tonic").

Seven different scales are procured by simply starting on each of the different notes. These are the seven **"Modes" or "Modal Scales"** (the mode names are derived from the names of provinces of Greece):

LYDIAN (Key F)

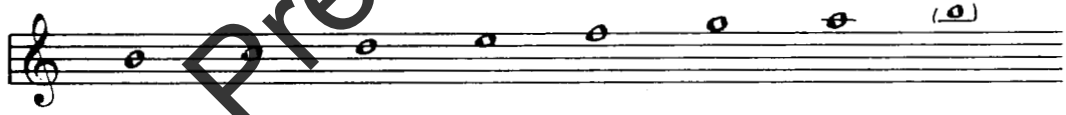


MIXO-LYDIAN (Key G)

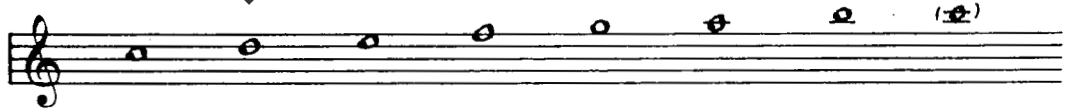


AEOLIAN (Key A)

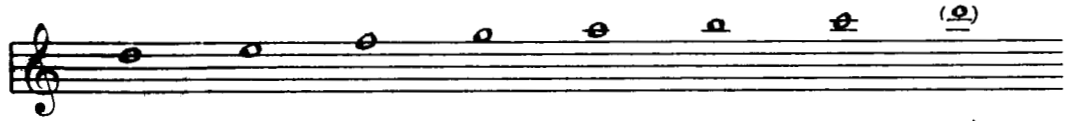
LOCRIAN (Key B)



IONIAN (Key C)



DORIAN (Key D)



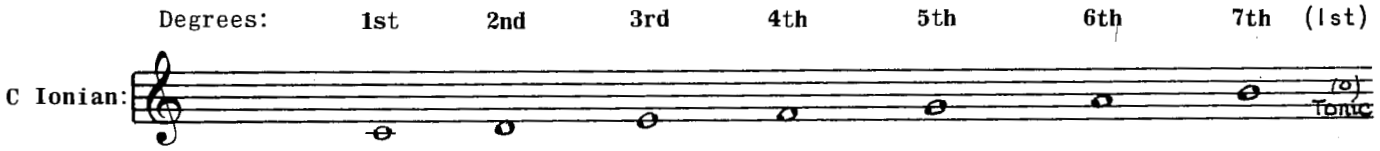
PHRYGIAN (Key E)

Note that the above scales are all in different "keys". A key is named from its starting note (tonic) and not from its "key signature".

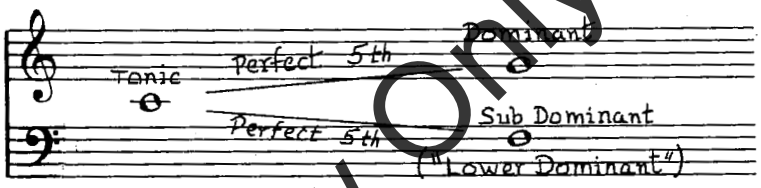
Of these 7 modes, the most familiar, and by far the most common in our music, is the **"Ionian"**. This is usually called the **Major Scale**. Before examining the modes in detail it seems wise to unearth certain facts about it.

THE IONIAN MODE

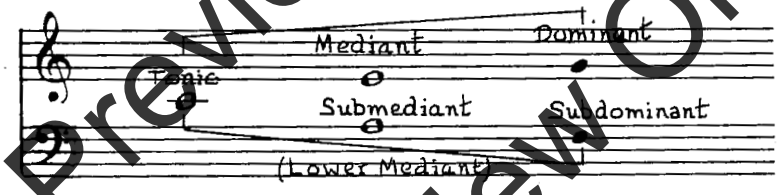
The 7 notes are called **"degrees"** of the scale, and each degree has a name:



The **DOMINANT** stands in the close relationship of a perfect 5th **above the TONIC** (or "key-note"). The **SUBDOMINANT**, or "lower dominant", stands in the relationship of a perfect 5th **below the TONIC**:



The **MEDIANT** is more or less the half-way point between the tonic and the dominant. The **SUBMEDIANT** ("lower mediant"), is between the tonic and the subdominant:

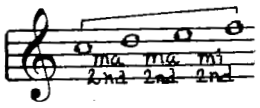


The **SUPERTONIC** is the note immediately above the tonic. The **LEADING TONE** is so named because of its clear "leading tendency" up to the tonic:

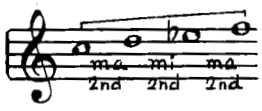
TETRACHORDS

While there are only *seven* different notes in the scale, the use of the octave tonic yields *eight*. These can be divided into two groups of four, called **TETRACHORDS**. A tetrachord is a 4 note scale covering the interval of a "perfect 4th". There are *four* basic tetrachord types which differ in the arrangement of major and minor 2nds between the outside notes of the perfect 4th. Observe and listen to the differences:

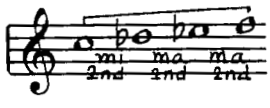
MAJOR



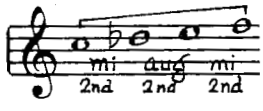
MINOR



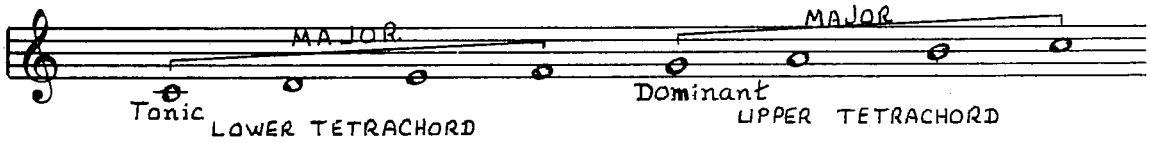
PHRYGIAN



HARMONIC



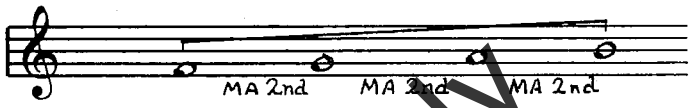
All of the standard 7 note scales show some arrangement of these basic tetrachord types. The Ionian mode consists of two **"Major"** tetrachords, one starting on the tonic, the other on the dominant:



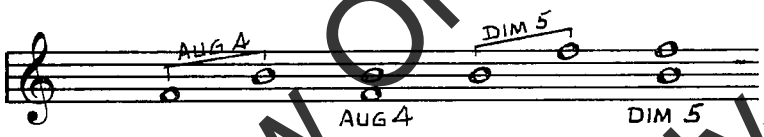
THE TRITONE (Called by early musicians "Diabolus In Musica" - the Devil in music.)

The term tritone is used to refer to two things:

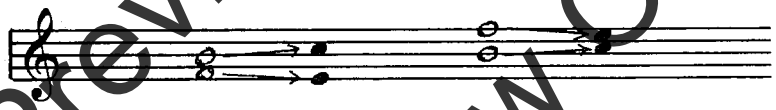
A. A four note scale consisting of 3 WHOLE TONES, covering an AUGMENTED 4th.



B. The **INTERVAL** (or its "inversion"), formed by the outside notes of this 4 note scale:



The tritone is characterized by a marked instability *(or "dissonance")* and it tends to *"resolve"*, that is, it tends to move to other notes which will release its instability. Such "resolution" is by *"step"* and a tritone in natural key signature will show a tendency as follows: **(listen!)**



There is a tritone found in the Ionian mode formed by a combination of the 4th and 7th scale degrees *(subdominant and leading tone)*. This tritone shows a tendency to resolve to the TONIC and the MEDIANT, which happen to outline the **TONIC CHORD** (1st, 3rd, and 5th degrees of the scale).

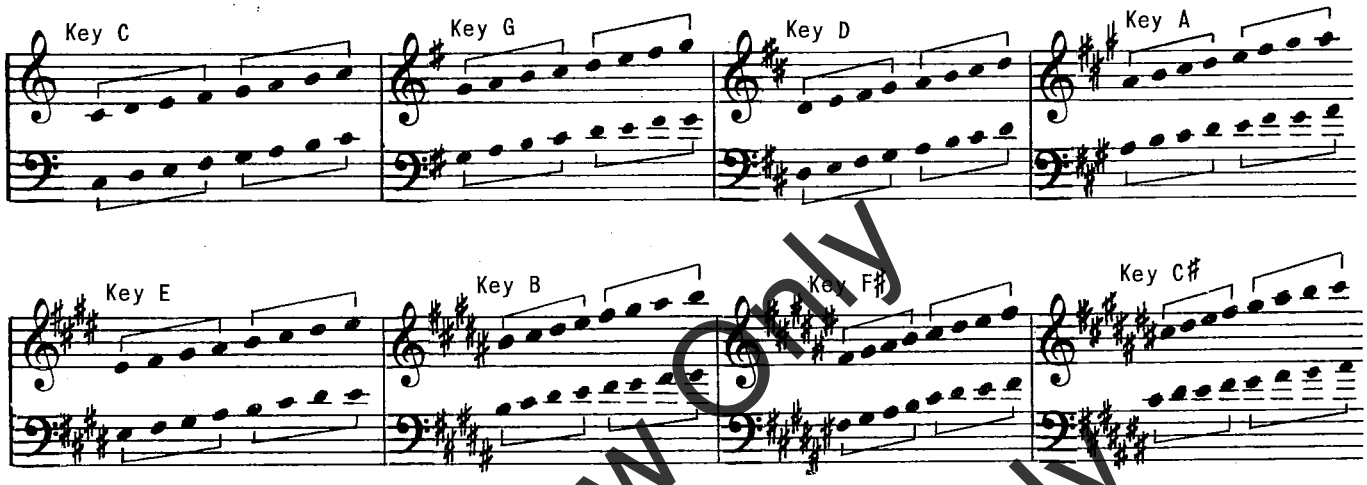
This tritone plays an important part in the outlining and establishing of the *"key"* because, in the Ionian mode, it is so positioned that its "dissonance" is directed at, and comes to rest on, the tonic chord. Therefore, when a tritone occurs between the 4th and 7th scale degrees, as it does in the Ionian mode, it is called a **TONAL TRITONE.**

Consequently, the two notes of the TONAL TRITONE in the key of C are "F"(4) and "B"(7); in the key of F they are "B♭"(4) and "E"(7); in the key of G they are "C"(4) and "F#"(7) etc., etc. A glance at the other modal scales will show that there is an Augmented 4th or Diminished 5th tritone in all of them, but only in the Ionian mode is it so positioned that its dissonance is aimed at the tonic chord. It is for this reason that the Ionian is the most *"stable"* of the modes, and accounts for its emergence as the main scale of "Western" music.

There are 15 *"written"* **Major Keys:** **1 "natural" key**
7 "sharp" keys
7 "flat" keys

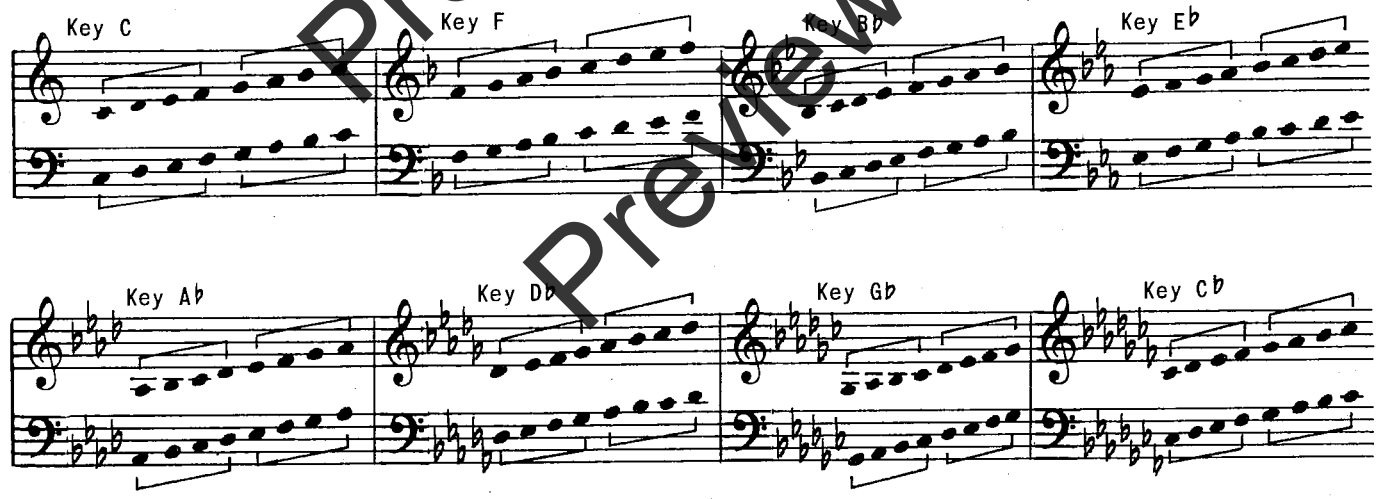
The **sharp keys** move in the direction of the "dominant", therefore, *the upper tetrachord of one becomes the lower tetrachord of the next:*

SHARP KEYS:



The **flat keys** move in the direction of the "subdominant", therefore, *the lower tetrachord of one becomes the upper tetrachord of the next:*

FLAT KEYS:



In actual *"sound"*, however, there are only *12 keys* since there are only *12 actual pitch levels.* So, the keys of:

D♭(5 flats) is the same as C♯(7 sharps)

G♭(6 flats) is the same as F♯(6 sharps)

C♭(7 flats) is the same as B (5 sharps)

They are **ENHARMONIC equivalents.** *(The term "enharmonic" is used to refer to any two notes, scales, chords, etc., which have the same "sound" but different "letter names".)*

The preceding technical analysis of the Ionian mode is valuable. But, as with all things musical, the real importance of the Ionian mode is its *"sound"*. The following observations regarding the qualities of the notes in the Ionian mode are pertinent:

The TONIC: Stable, conclusive. Usually the final melody note.
The MEDIANT and DOMINANT: Fairly secure. Occasionaly function as final notes.
(Tonic, Mediant, and Dominant are the three notes of the "Tonic Triad".)

The LEADING TONE: Marked tendency up to the tonic.
The SUBDOMINANT: Tendency down to the mediant.
(Leading Tone and Subdominant are the two notes of the "Tonal Tritone".)

The SUPERTONIC and SUBMEDIANT: Neutral. Not stable, but no defined direction implied. Often affected by the direction from which they are approached.

(The above observations to be tested at piano.)

ASSIGNMENT 1 (The Ionian Mode)

1. Write major (Ionian) scales in all 15 keys, in treble and bass clef. Become familiar with the key signatures.

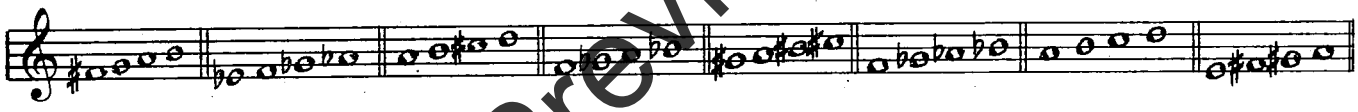
2. Create and answer a page or so of questions such as:

   What note is the: Dominant in D♭?
   Supertonic in A♭?
   Mediant in F♯?
   etc., etc.

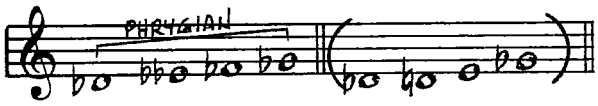
3. Create and answer a page or so of questions such as:

   D is the Dominant of what major scale?
   D is the Mediant of what major scale?
   etc., etc.

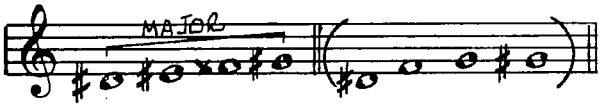
4. Name the following Tetrachord types. (i.e. major, minor, Phrygian, harmonic) Sing! Hear!



5. Write the *four* basic Tetrachord types starting on each of the 12 notes (including some enharmonic equivalents). Write *"diatonically"*, i.e., each Tetrachord to have *four* different *"letters"*. To illustrate:



RIGHT WRONG



RIGHT WRONG

6. Locate the *two* notes of the *"tonal tritone"* in all 15 keys.

7. **The ear:**

   A. Develop the ability to sing, and to recognize on hearing, all of the *Tetrachord types, and the tritone.*

   B. Develop the ability to recognize, after a major scale (key) has been established, *any one of the scale degrees (with its correct name) by "sound"*. Any major key can be established by playing the scale a few times at the piano.

THE ECCLESIASTICAL MODES

There have been a number of MODAL SYSTEMS, all of which use the same scales. The systems differ in usage only and a full investigation of them is not necessary to this study. The ECCLESIASTICAL MODES serve as a basis for the study undertaken here. It will be shown that, directly or indirectly, a great deal of modern melody and harmony is derived from these modes.

Note that, in this system, the first mode is the familiar Ionian. Here they are in *"natural"* key signature, the white keys of the piano. (Note the Tetrachord arrangement.)

MODE 1 - IONIAN (Key C)

MODE 2 - DORIAN (Key D)

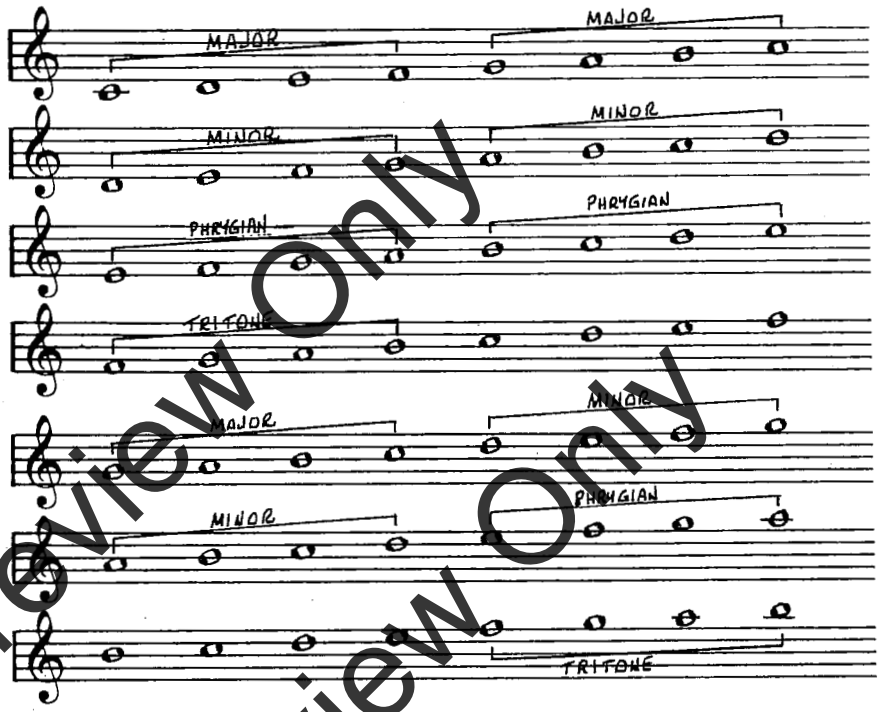
MODE 3 - PHRYGIAN (Key E)

***MODE 4 - LYDIAN (Key F)**

MODE 5 - MIXO-LYDIAN (Key G)

MODE 6 - AEOLIAN (Key A)

***MODE 7 - LOCRIAN (Key B)**



*The LYDIAN MODE (Mode 4) is not often used, although some writers in the popular and jazz fields have recently been turning to it. (For instance, the score of "West Side Story" shows a strong Lydian influence.) Its "tonic", being one of the notes of the Tritone, is unstable. However, differing from the Locrian, it does have a consonant major chord on the tonic. In the study of counterpoint, reference will be made to the Lydian mode, but for now we will more or less eliminate both the Locrian and Lydian modes from our calculations.

*The LOCRIAN MODE (Mode 7) is virtually never used.

Reasons: 1. Its "tonic" is one of the notes of the unstable tritone.
2. Its "tonic chord" is an unstable and dissonant "diminished" chord, which is not satisfactory as a final "home base" chord.

This leaves five Modes, all of which have acceptable "tonal stability". (Of course, because of the favorable position of the tritone mentioned earlier, the IONIAN is the most stable.) We can call these five Modes the **TONAL MODES**.

THE FIVE TONAL MODES:

IONIAN	**(Mode 1)**	
DORIAN	**(Mode 2)**	
PHRYGIAN	**(Mode 3)**	*(Modes 4 and 7 eliminated)*
MIXO-LYDIAN	**(Mode 5)**	
AEOLIAN	**(Mode 6)**	

A scale is called **MAJOR or MINOR** according to the type of "tonic chord" it has *(i.e., 1st, 3rd and 5th degrees of the scale)*. If it has a **Major** tonic chord the scale is **Major**; if it has a **Minor** tonic chord the scale is **Minor**.

Therefore, *three* of the *five* Tonal Modes are **Minor** scales, *two* are **Major** scales:

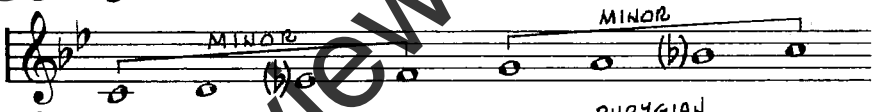
MAJOR MODES:	**IONIAN**	**(Mode 1)**
	MIXO-LYDIAN	**(Mode 5)**
MINOR MODES:	**DORIAN**	**(Mode 2)**
	PHRYGIAN	**(Mode 3)**
	AEOLIAN	**(Mode 6)**

We have been looking at the Modes in one key signature *("natural")*. Consequently, each started on a different note and was therefore in a different *"key"*, since a *key* is named for its tonic or "key-note".

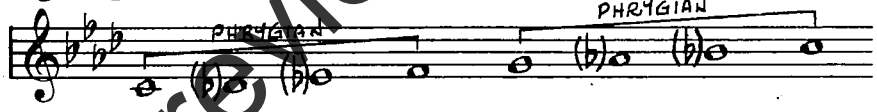
Here are the **ECCLESIASTICAL MODES** in *one* key, using the key of "C" for example purposes:

Mode 1 - IONIAN (Key C)

Mode 2 - DORIAN (Key C)

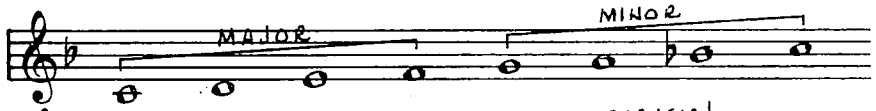


Mode 3 - PHRYGIAN (Key C)

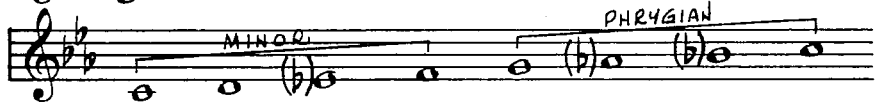


Mode 4 - LYDIAN (Key C) *eliminated for now, but would be:*

MODE 5 - MIXO-LYDIAN (Key C)



Mode 6 - AEOLIAN (Key C)



Mode 7 - LOCRIAN (Key C) *eliminated, but would be:*

PERTINENT POINTS AND TERMINOLOGY

Note that there are *three* notes which are the same in *ALL* of the *five* TONAL MODES:

The TONIC
The SUBDOMINANT
The DOMINANT

These *three* notes contribute greatly to the *"key"* feeling, and are called the **TONAL NOTES.**
Example: The Tonal Notes in the key of C are: **C, F, G.**
in the key of F are: **F, B♭, C.**
in the key of E are: **E, A, B.**
etc., etc.

The remaining notes, the 2nd, 3rd, 6th, and 7th degrees of the scale, CHANGE with the various Modes. The *three* Tonal notes outline the *"key"*, but the 2nd, 3rd, 6th, and 7th degrees indicate the **MODE** of the *"key"* and they are called the **MODAL NOTES.** Some of the MODAL NOTES have specific names:

The MIXO-LYDIAN 7TH - refers to the use of a FLATTED 7TH DEGREE IN MAJOR. This "flatted 7th" distinguishes Mixo-Lydian Major from Ionian Major, and it is the Mixo-Lydian 7th which is CHARACTERISTIC of the Mixo-Lydian Mode. (example B♭ in C major)

The DORIAN 6TH - refers to the use of a MAJOR SUBMEDIANT IN MINOR. Of the *three* minor modes (Dorian, Phrygian, Aeolian), only the Dorian mode has this major 6th degree. It is the Dorian 6th which is CHARACTERISTIC of the Dorian Mode.

The PHRYGIAN 2nd - refers to the use of a FLATTED SUPERTONIC. Of the *five* Tonal Modes, only the Phrygian has this flatted 2nd degree, and it is the Phrygian 2nd which is CHARACTERISTIC of the Phrygian Mode.

The SUBTONIC.- You will notice that the only one of the *five* Tonal Modes that has a true "Leading-tone" *(½ tone below the tonic)* is the Ionian. All others have a "flatted 7th" degree. We have already noted that this flatted 7th in MAJOR is called the Mixo-Lydian 7th, but in the *three* MINOR MODES it is called the SUBTONIC, in order to distinguish it from a true "Leading-tone".

Finally, the *five* Tonal Modes may be compared, from an expressive and emotional point of view, as follows:

BRIGHTEST

	IONIAN	
	MIXO-LYDIAN	(♭7)
to	**DORIAN**	(♭7, ♭3)
	AEOLIAN	(♭7, ♭3, ♭6)
	PHRYGIAN	(♭7, ♭3, ♭6, ♭2)

DARKEST

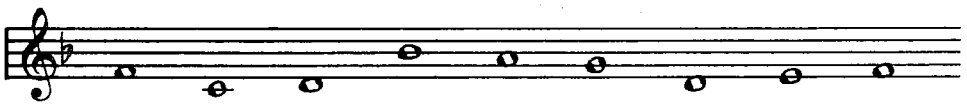
(At the piano, experience the logic of playing UP the Ionian and DOWN the Phrygian)

Any diatonic melody, which uses only unaltered notes from the scale, may be transformed to another mode of the same key in two ways:

1. *Leave original key signature and add necessary "accidentals".*
2. *Change the key signature.*

Here is an example illustrating these procedures. Note that the melody changes character and mood, but it DOES NOT CHANGE KEY. The TONAL NOTES are not changed, only the MODAL notes:

DIATONIC MELODY IN F IONIAN:

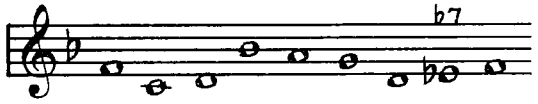


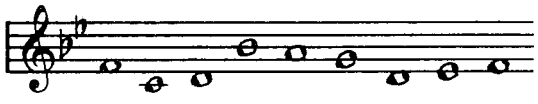
Same melody in the other *four* **TONAL MODES:**

With Ionian signature retained and "accidentals" used to change mode:

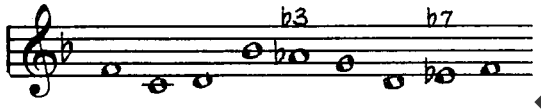
With appropriate change of signature:

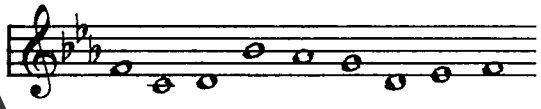
F MIXO-LYDIAN



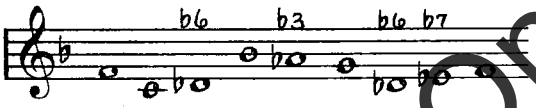


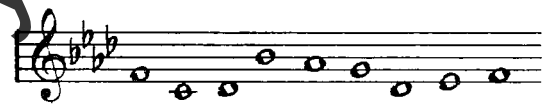
F DORIAN



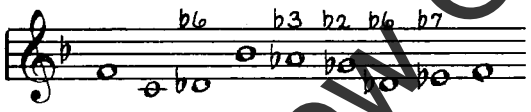


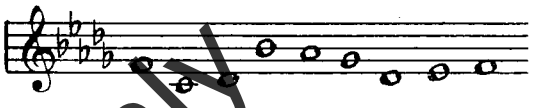
F AEOLIAN





F PHRYGIAN



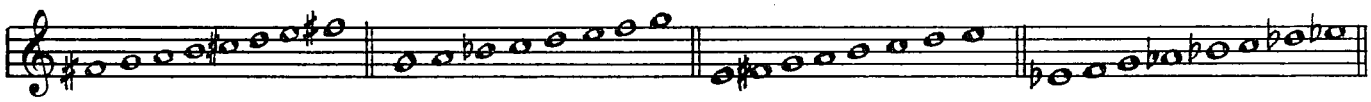


Both of the above procedures produce indentical results, and both are used. Many writers will prefer to use the Ionian signature with the necessary accidentals because they will feel more comfortable and familiar with it. (Since the great majority of arranging is done in the Ionian Mode, there is a natural, although false, association of *"key" with "key signature"*.) Obviously, however, the use of the appropriate Modal key signature saves the writing of accidentals.

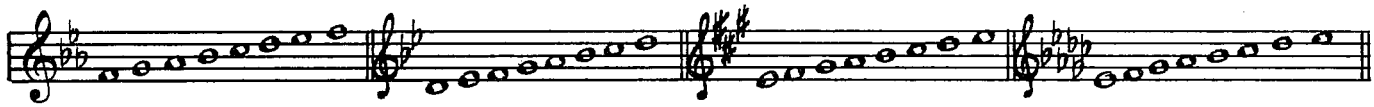
The use of Mode change is a technique of "Melodic Variation" often used in dramatic and background writing where a "Theme" can be modally altered to accompany changes of mood in the dramatic context.

ASSIGNMENT 2 (The Ecclesiastical Modes)

1. Name each of the following Modes. (Key signatures not given). Hear! Sing!



2. Name each of the following Modes. (Key signatures given). Hear! Sing!



3. Write the *five* Tonal Modes in the keys of E♭, B♭, A, E, without key signatures. Use "accidentals" as necessary.

4. Write the *five* Tonal Modes in the keys of G, F, D, F♯, with correct key signatures.

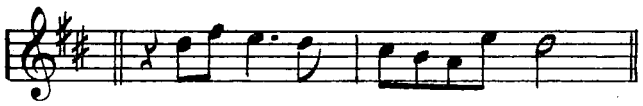
5. What is the name of Mode 3? Mode 1? Mode 6? Mode 4? Mode 2? Mode 5? Mode 7?

6. What type of Tetrachord is the : Lower in Aeolian? Upper in Phrygian?
   Lower in Dorian? Upper in Mixo-Lydian?

7. What are the *three* TONAL NOTES in the key of E♭? A? E? D?

8. What note is the MIXO-LYDIAN 7TH in the key of B♭ major? F major? A major? E♭ major?
   What note is the DORIAN 6TH in the key of A minor? E minor? B♭ minor? F minor?
   What note is the PHRYGIAN 2ND in the key of D? G? F♯? G♭?
   What note is the SUBTONIC in the key of D minor? F minor? E♭ minor? G minor?

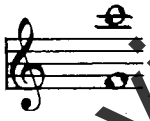
9. The melody is given in "D" Ionian. Leave Ionian key signature, but add the necessary "accidentals" to change it to "D" Aeolian:



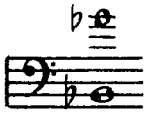
10. Take 8 bars of any DIATONIC (Ionian) song - (i.e. a song in which there are no notes used except those which are in the scale. The first 8 bars of "Over The Rainbow" is an example of a "diatonic" melody) - and rewrite it in each of the other *four* Tonal Modes of the same key, both by adding the appropriate accidentals and with the correct key signatures.

11. Compose a sentence of melody (approx. 8 bars) in "A" Dorian for oboe, and in "G" Phrygian for trombone. In each case, start and end on the tonic of the Mode and remain entirely diatonic in the Mode. Aim to catch the particular quality of the Mode.

Good oboe solo range:



Good trombone solo range:



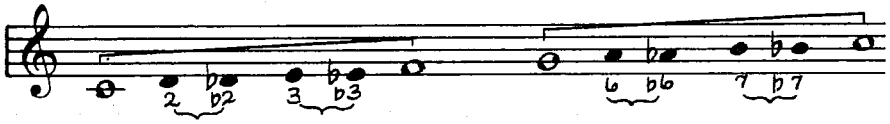
12. **The ear:** Develop the ability to sing, and to recognize on hearing, all of the Modes.

THE MIXED MODE TECHNIQUE

The main way in which the Modes are presently used is in a "mixed" form. All of the *five* Tonal Modes can be drawn from any one key.

When all of the *five* Tonal Modes are taken into consideration, you will find that there are, in any given key, two versions for each of the **MODAL NOTES**. This can be illustrated as follows:

MIXED MODE SCALE (key of C)



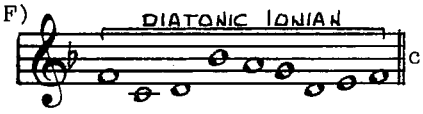
Two versions for each of the Modal notes.

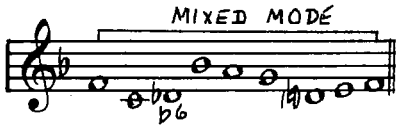
The Harmonic implications of this are extensive and are fully examined in Volume II, "Modern Harmonic Techique" (See: "Extended Tonality", Part I). Here we will observe how a melody in diatonic Ionian may have **MODAL VARIANTS** applied to it, without loss of key sense.

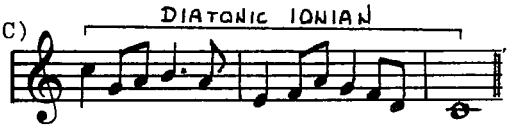
The process (according to taste):

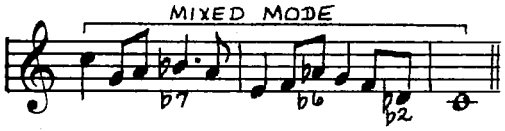
♭2 (from Phrygian) may be used INSTEAD OF the Ionian supertonic.
♭3 (from the Minor Modes) may be used INSTEAD OF the Ionian mediant.
♭6 (from Aeolian and Phrygian) may be used INSTEAD OF the Ionian submediant.
♭7 (from all other Modes) may be used INSTEAD OF the Ionian leading-tone.

Illustrations:

(key F)
This: 

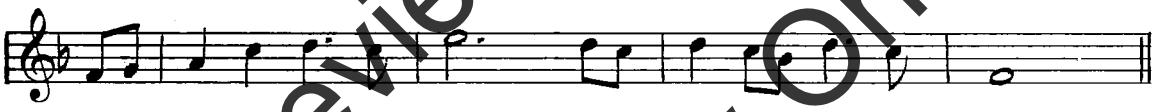
could become, for instance, this: 

(key C)
This: 

could become, for instance, this: 

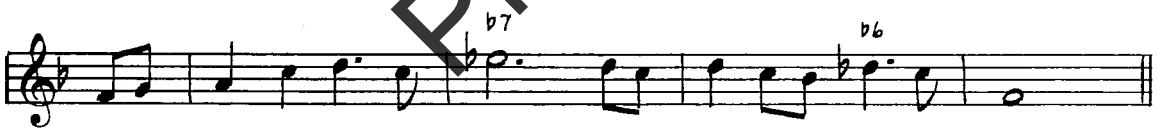
Any musical device or technique merely acts as a starting point. The technique itself doesn't guarantee an artistic result. Consequently, the Mixed Mode process requires a sensitive handling of the "altered" notes. The Modal Variants applied to major are "flatted" notes and will, in general, show a downward tendency. Here is an example of a diatonic Ionian melody with an insensitive application of Modal Variants (♭2, ♭3, ♭6, ♭7):

ORIGINAL (key F)



INSENSITIVE USE OF MODAL VARIANTS

SEEMS BETTER

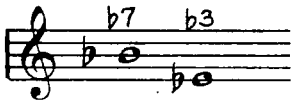


Similar to full Modal change, the application of occasional Modal Variants is a standard "melodic variation" technique. Further, a great many standard melodies illustrate a use of the Mixed Mode technique in their original forms. (Examples: "The Man I Love", "Temptation", many of Cole Porter's songs, etc.) An examination of a few jazz "heads" (themes) will show that Modal Variants are extensively used in the jazz idiom.

BLUES MELODIES

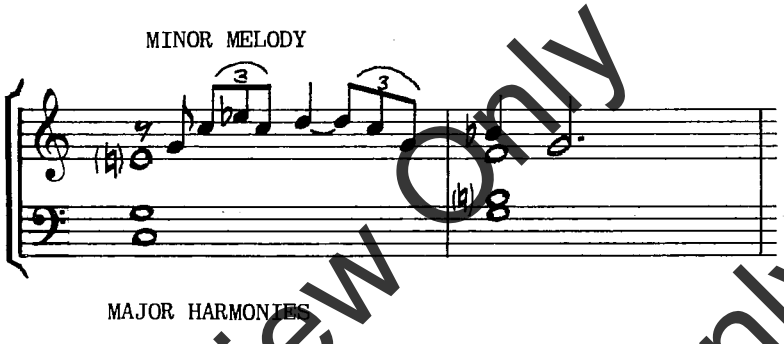
While the "blues" is compounded of more than just a scale proposition, the so-called "Blue Notes" are technically Modal Variants.

The ♭7 and ♭3 are the primary "blue" notes, Example:

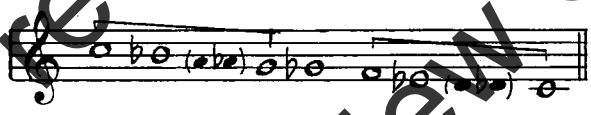
Key of C 

(Mixo-Lydian 7th)

The "blues" gets much of its flavor from the fact that the melodies are essentially *"minor"* but the harmonies remain *"major"*. Example:



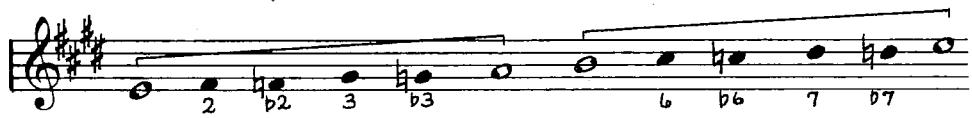
The flatted dominant (♭5) has also been incorporated into the "blues" ideas so that the generally accepted **Blues Scale** in descending form, can read:

Key of C 

This scale plays an important role in many areas of jazz improvisation and writing.

ASSIGNMENT 3 (The Mixed Modes)

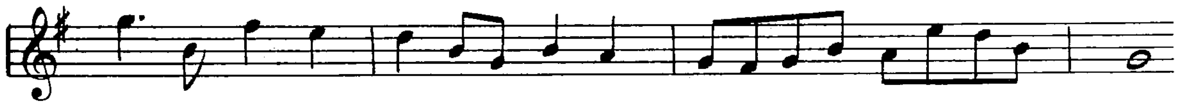
1. Write **Mixed Mode Scales**, with Ionian signature, in the Keys of E♭, F, A, and D.

Example (Key of E) 

Note: A note lowered by "accidental" is usually called a *"flatted"* note even when, as here, the accidental is actually a *"natural"*.

2. The *four* Modal Variants in C major are D♭ (♭2), E♭ (♭3), A♭ (♭6), and B♭ (♭7). What are the *four* Modal Variants in G major, D♭ major, and B♭ major?

3. A. Diatonic Ionian melody given. To it, apply one or more tasteful Modal Variants (♭2, ♭3, ♭6, ♭7) to produce a Mixed Mode Variation. Try for two or three different examples.



B. Take 8 bars of any familiar diatonic Ionian melody (example "Over The Rainbow") and apply one or more tasteful Modal Variants to it, for variation.

4. List the titles of a few melodies (of a popular, standard or jazz nature) that are basically Ionian, but which make some use of Modal Variants. (♭2, ♭3, ♭6, ♭7)

5. Compose a melodic sentence (approx. 8 bars) in either a song or a jazz style. Use a Mixed Mode technique (i.e., basically Ionian, but with the use of one or more of the Modal Variants).

6. Write a jazz line which makes some use of the "blues scale" feeling.

7. **The ear:** Develop the ability to recognize, by sound, Modal Variants in major.

THE MINOR TONALITY

In common practice, the **MODAL SYSTEM** has been simplified into a diatonic system based on two opposing poles:

MAJOR - **MINOR**
uses the Ionian Mode (**Mode 1**) uses the Aeolian Mode (**Mode 6**)

(The reason for the emergence of the Aeolian as the main minor mode in our music concerns the tritone. At the white keys of the piano, notice that the tritone "F" and "B" resolves on to "E" and "C". The "E" and the "C" are not only in the tonic chord of the C Ionian Mode, but also in the tonic chord of the A Aeolian Mode. Consequently, the Aeolian is the most "stable" of the minor modes.)

So, while it is true that there are 3 minor modes (Dorian, Phrygian, Aeolian), the term MINOR, with respect to key, will refer to the AEOLIAN MODE and its "artificial" derivatives (see below). For instance, the term: "Key of C Minor" will refer to the scale of "C" with a signature of *three flats* (i.e. the key signature for "C Aeolian"). If specific reference to the Dorian or Phrygian Modes is desired, the specific terms "Dorian" and "Phrygian" are to be used.

The Aeolian Mode with the SAME KEY SIGNATURE as the Ionian is called the **RELATED MINOR.**

Example:

MAJOR (Ionian) - - - - - - - - - - - -	**RELATED MINOR (Aeolian)**
C Major	**A Minor**
E♭ Major	**C Minor**
F Major	**D Minor**

(Conversely, the Ionian Mode with the same key signature as the Aeolian is called the "Related Major", e.g. C major is the "Related Major" of A minor.)

The Aeolian Mode with the SAME TONIC as the Ionian is called the **PARALLEL MINOR.** (Some writers prefer the term "**Tonic Minor**".)

Example:

MAJOR (Ionian) - PARALLEL MINOR (Aeolian)

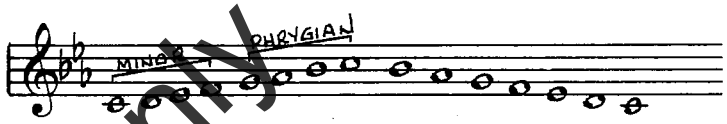
C Major	**C Minor**
E♭ Major	**E♭ Minor**

(Conversely, the Ionian Mode with the same tonic as the Aeolian is called the "Parallel Major", e.g., C major is the "Parallel Major" of C minor.)

Two "artificial" minor scales have been derived from the Aeolian, as follows: ("C" Aeolian used for example purposes)

C Aeolian

The AEOLIAN MODE:
(sometimes called the "**Natural Minor Scale**")

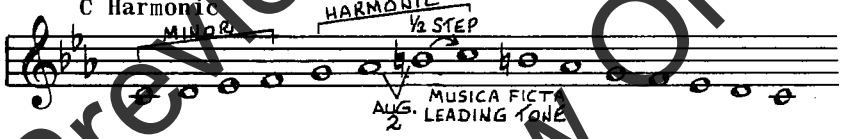


This pure Aeolian Mode was regarded as "inconclusive", particularly at endings. The tonic was felt to lack sufficient stability and finality.

This deficiency was overcome by a process called **MUSICA FICTA** ("**Artifical Music**"). The 7th degree (the subtonic) was ARTIFICIALLY raised, by accidental, to create a LEADING TONE (½ step) into the tonic. The upper tetrachord is now a "harmonic tetrachord", and the scale is called the **HARMONIC MINOR.**

C Harmonic

The HARMONIC MINOR:



The use of the "Musica Ficta" leading-tone produces two results:

1. A ½ step "leading" interval into the tonic.
2. A TONAL TRITONE between the 4th and 7th scale degrees.

Consequently the "Harmonic Minor" scale is more stable, and has a more definite "tonality" (key sense) than the pure Aeolian.

However, the "augmented 2nd" interval between the 6th and raised 7th degrees was felt to be objectionable because:

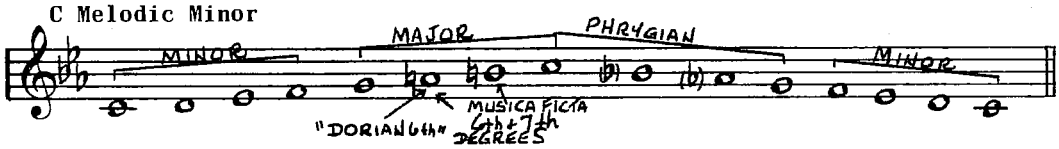
1. Somewhat awkward to sing.
2. Tends to sound "Eastern", "Semite", and not consistent with the normal character of "Western" music.

These objections were overcome with more Musica Ficta. The 6th degree (submediant) was also raised by accidental, to eliminate the augmented 2nd. The resulting scale is called the **MELODIC MINOR.**

In its "descending" form the Melodic Minor scale reverts to the original Aeolian form:

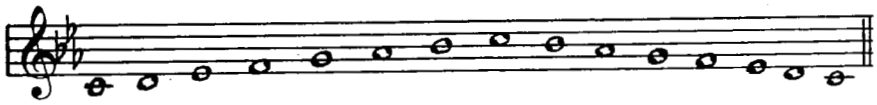
C Melodic Minor

The MELODIC MINOR



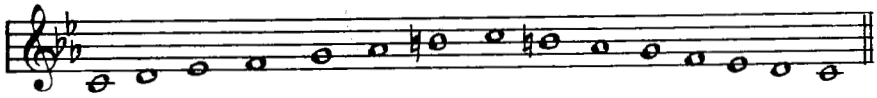
So, the MINOR TONALITY, as it is commonly used in our music, consists of *three scales.* One **"pure"** Mode and two **"artificial"** Modes:

"PURE" Mode: **Aeolian**

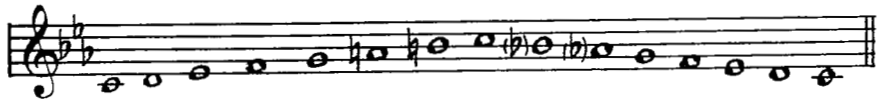


"ARTIFICIAL" Modes:

Harmonic Minor



Melodic Minor



SOME CLUES TO THE USE OF MUSICA FICTA IN MINOR MELODY

These are grouped under *four* headings:

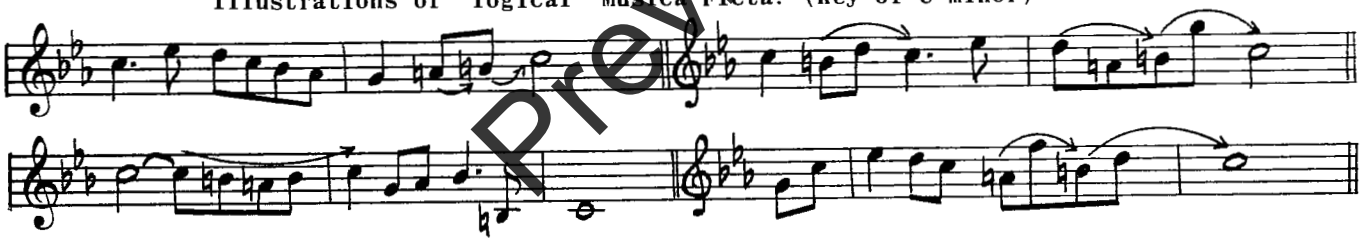
A. "Logical" use of Musica Ficta.
B. Use of the Harmonic Minor scale.
C. Use of the pure Aeolian.
D. A "casual" use of Musica Ficta.

As will be seen later, these considerations also have significance in the use of Musica Ficta in the *chords* of the minor keys.

A. "Logical" use of Musica Ficta

In the normal course of "Western" practice, the principles of the MELODIC MINOR scale (up and down) are used. The 7th degree is raised by "accidental" when it is moving **UP**, directly or indirectly, **to the tonic**; the 6th degree is raised by "accidental" when it is moving **UP**, directly or indirectly, **to the RAISED 7th degree.**

Illustrations of "logical" Musica Ficta: (Key of C minor)



B. Use of the Harmonic Minor scale.

The Harmonic Minor scale, with its characteristic "augmented 2nd" between the 6th and raised 7th degrees, *is RARELY used in the normal course of melody and part writing.* Best to restrict it to those situations where its "exotic" flavor is suited to the intended context.

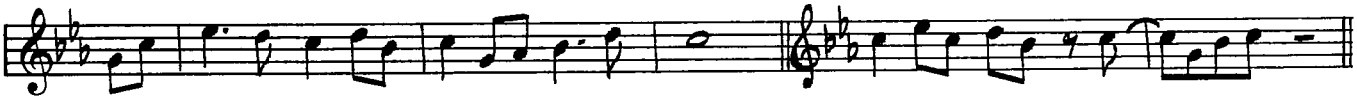
Illustration:

Eastern!

C. Use of the "pure" Aeolian.

The pure Aeolian, without any Musica Ficta, was rarely used in the "Classic - Romantic" styles. Its passive and "folk-like" quality has been more fashionable recently (particularly in some areas of jazz) and it may be regarded as available at any time, to taste.

Illustrations:

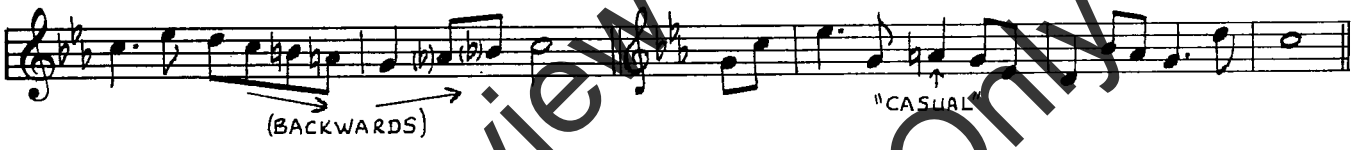


D. A "casual" use of Musica Ficta.

The Musica Ficta 6th and 7th degrees are alterations to MODAL notes, therefore the use or non-use of Musica Ficta does **not** affect the basic **KEY**. Further, since the essential quality of "minor" as opposed to "major" depends on the MEDIANT, the use or non-use of Musica Ficta does not necessarily threaten the "minor" quality of the Mode.

Therefore, it is possible to make a "casual" (even a backwards) use of Musica Ficta. That is, the 6th and 7th degrees may be artificially raised even if they aren't moving up to their usual destination. This is **NOT COMMON** and can easily lead to chaos and confusion!

Illustrations:



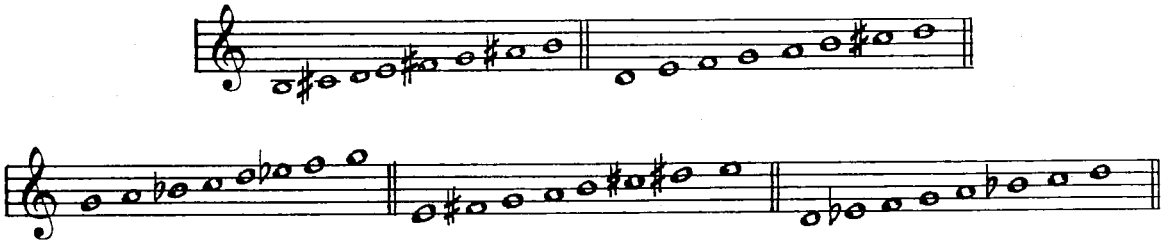
To sum up:

"Logical" Musica Ficta (Melodic Minor scale) . . . USUAL.
Augmented 2nd of the Harmonic Minor scale . . . RARE, SPECIALIZED.
Pure Aeolian . . . UNENERGETIC, PASSIVE, AVAILABLE.
"Casual" Musica Ficta . . . POSSIBLE BUT UNUSUAL.

ASSIGNMENT 4 (The Minor Tonality)

1. Write the *three scales* of the Minor Tonality, Aeolian, Harmonic Minor, Melodic Minor (up and down), with correct key signatures and accidentals as required, in the keys of E minor, A minor, B♭ minor, F minor, C♯ minor, D minor, G minor.

2. Name the following scales: Hear! Sing!



3. A. What key is the RELATED MINOR of D major, C♯ major, A major, B♭ major, D♭ major, E major?

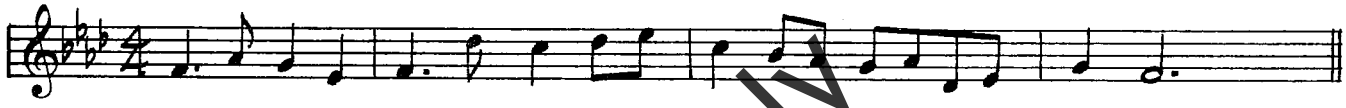
   B. What key is the RELATED MAJOR of E♭ minor, E minor, G minor?

4. Give the key signatures for the PARALLEL MINOR of G major, B♭ major, D major.

5. The two "Musica Ficta" notes in C minor are A♮ and B♮. What are the two Musica Ficta notes in D minor, B minor, A minor, F♯ minor, E minor?

6. Add "logical" Musica Ficta (in accordance with the principles of the Melodic Minor scale) to each of the following Aeolian lines:

F Minor



E Minor

7. Take a couple of diatonic Ionian (major) melodies and re-write them, with a view to noting how they sound, in the RELATED MINOR as follows:

   A. With "logical" Musica Ficta
   B. In Harmonic Minor
   C. In Pure Aeolian
   D. With some tasteful "casual" Musica Ficta

8. Compose a melodic sentence (approx. 8 bars) in any desired Minor key, using Musica Ficta to taste.

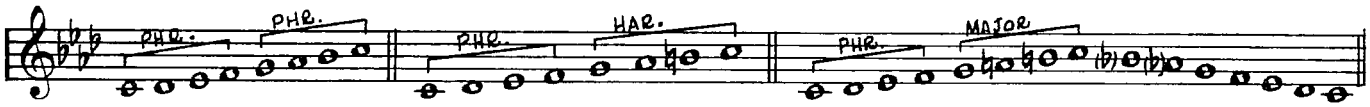
9. **The ear:** Become familiar with the sound of the minor tonality.

SCALES CONCLUDED

Many other scales are used in the world today. The Eastern and Middle European cultures, for instance, use scales which are available to any interested musician. It is quite possible to devise a scale of your own, say of 6, 8, 9, etc., notes, for a particular emotional or psychological purpose. But the Modes and the Minor Tonality underlie the great majority of the music with which this text is concerned.

Nevertheless, it may be useful to note the following:

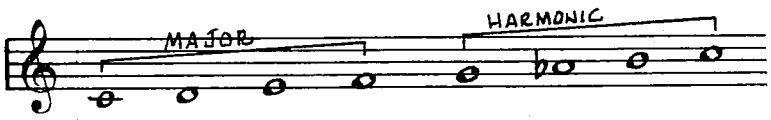
. . . Musica Ficta can be applied to the Phrygian and Dorian Modes in exactly the same way that it applied to the Aeolian, and for exactly the same reasons. To Illustrate:



"C" PHRYGIAN **"C" HARMONIC PHRYGIAN** **"C" MELODIC PHRYGIAN**

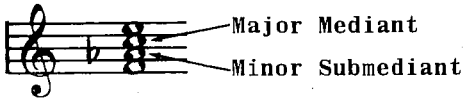
. . . The basic Tetrachord types can be re-arranged to produce more "exotic" scales which, because they will still contain the *three Tonal Notes,* remain strongly "key oriented". One of these re-arrangements plays an occasional role in "popular" Melody and Harmony: the so-called **Harmonic Major scale:**

"C" HARMONIC MAJOR



The following chord, which enjoys considerable use in "popular" harmony, can be traced to the Harmonic Major scale: (see second chord of "Moon Glow")

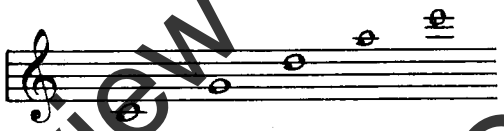
Key of "C"



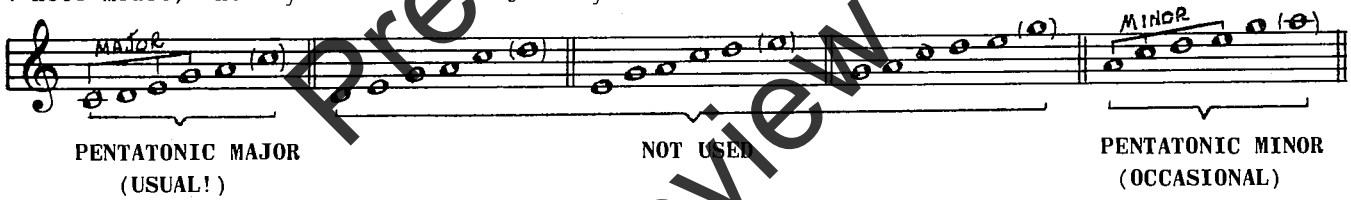
One scale which occupies an important place in melody is the **PENTATONIC (5 note) SCALE.** a few detailed observations about it are in order:

The PENTATONIC SCALE

This scale is derived from the 1st *five notes* of the **"cycle of 5ths":**



Place side by side within an octave (in the same process that produces the 12 tone scale and the 7 note Modes) these *five notes* will yield *five Pentatonic Modes:*

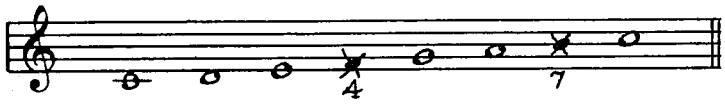


PENTATONIC MAJOR (USUAL!) **NOT USED** **PENTATONIC MINOR (OCCASIONAL)**

As indicated above, the MAJOR PENTATONIC scale is the usual form; the MINOR PENTATONIC is occasionally used. The remaining *three* do not have standard "triads" on their tonics.

(Note: The black keys of the piano form Pentatonic Scales. Start on G♭ (F♯) for the MAJOR form, on E♭ for the MINOR form.)

The MAJOR Pentatonic scale is the same as the Ionian Mode, with the "tonal tritone" removed:

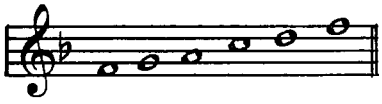
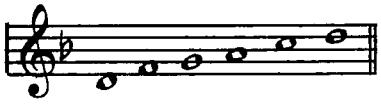


Therefore it contains no awkwardness, and Pentatonic melodies are generally easy to sing. It is widely used in:

Folk Songs
Spirituals
Jazz
Popular Songs
Western (cowboy) Music

Sometimes a melody may be entirely Pentatonic ("Who", "Swing Low Sweet Chariot"), or it may be Pentatonic for one sentence only ("My Blue Heaven", "Louise"), or it may simply show a strong Pentatonic influence, ("Someone To Watch Over Me", "Old Man River").

The MAJOR Pentatonic scale is written with the **Ionian signature**, and the MINOR Pentatonic is written with the **Aeolian (Related Minor) signature**:

F Major Pentatonic  **D Minor Pentatonic** 

(The Pentatonic Scale is usually used **Melodically Only**. The harmonizations draw from all of the resources of harmony in major or minor.)

ASSIGNMENT 5 (Scales Concluded)

1. Write Harmonic Phrygian and Melodic Phrygian scales, with **Phrygian signatures**, in the keys of D, A, B, E, and F Phrygian.

2. Write melodic sentences (approx. 8 bars) in any desired Phrygian and Dorian Modes, with a "logical" use of Musica Ficta.

3. Write Harmonic Major scales, with **Ionian signatures**, in the keys of F, B♭, D♭, F♯.

4. Rewrite any diatonic melody (e.g. "Loch Lomond") in Harmonic Major.

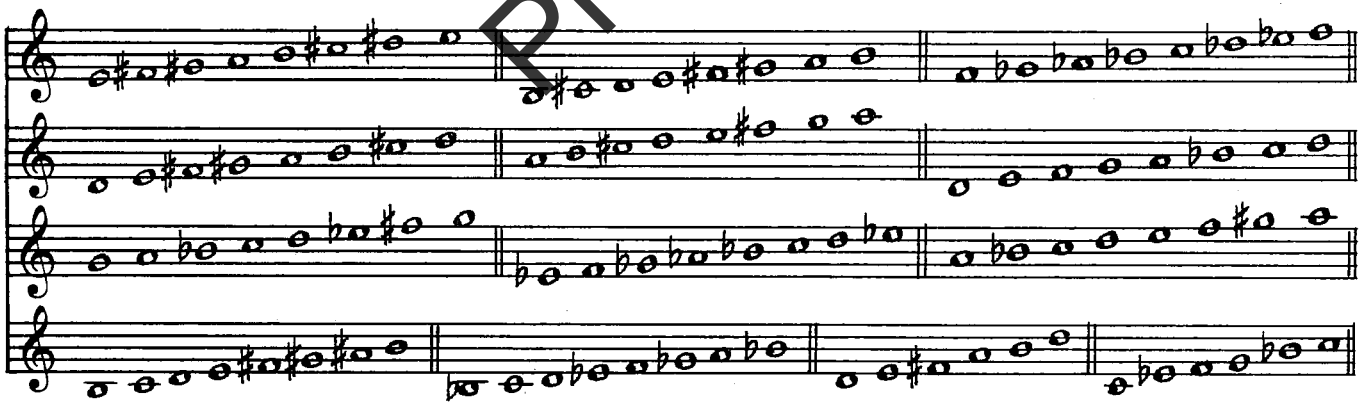
5. Write Pentatonic Major scales, with **Ionian signatures**, in the keys of B♭, E♭, A♭, D♭, G, D, A.

6. Write Pentatonic Minor scales, with **Aeolian signatures**, in the keys of D minor, B♭ minor, A minor, E♭ minor.

7. List the titles of a few familiar melodies which are Pentatonic, or obviously "Pentatonic influenced".

8. Compose a melodic sentence, thinking in terms of the French Horn sound, suitable as a theme to accompany a travelogue on the Rockies. Use any desired diatonic Pentatonic Major scale.

9. Name the following scales. Hear! Sing!



10. **The ear:** Develop the ability to sing, and to recognize on hearing, the Pentatonic Scale (particularly the Major Pentatonic), the Harmonic Major, etc.

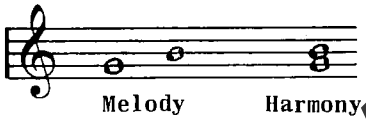
11. Review all scale material.

Chapter 2

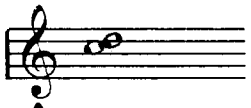
INTERVALS

BASICS

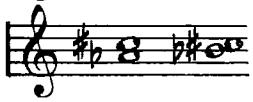
The measurement of distance between any two notes is called an **INTERVAL**. Two notes in succession form a **Melody** interval; played simultaneously they form a **Harmony** interval. Example:



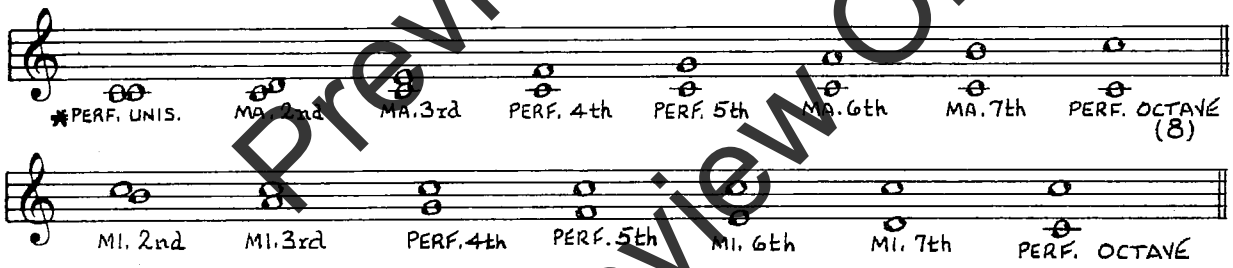
Harmony 2nds (notes one step apart) are written side by side and touching, as:



All "accidentals" are placed on the left hand side of a harmony interval, as:

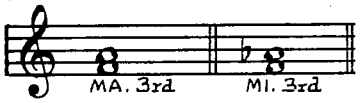


It is customary to use the Major (Ionian) scale as a point of reference for the calculation of intervals. Here, using the key of "C" for example, are the intervals from the tonic up and from the tonic down, in Major, with names:

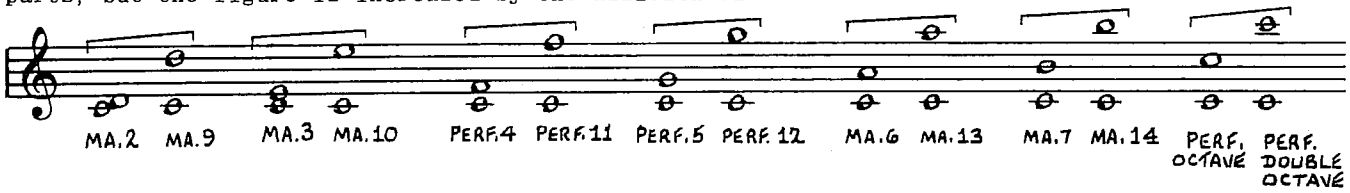


*The unison is called an interval, although there is obviously no distance between the two notes.

All intervals are figured from the lower note to the upper note and have two names. The "specific name" classifies it as Perfect, Major, Minor, etc., and the "number name" indicates the number of scale degrees encompassed. Example:

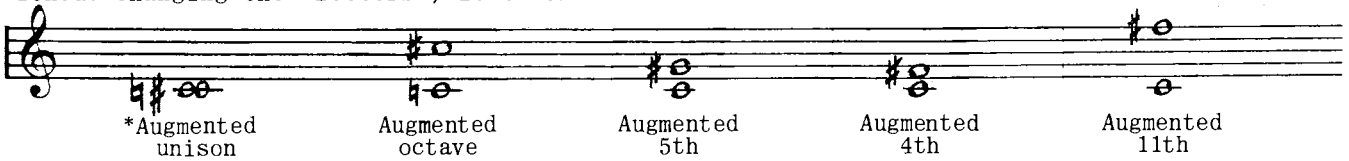


Intervals of an octave or less, as above, are called **Simple** intervals. When more than an octave, they are called **Compound**. The compound intervals have the same quality as their simple counterparts, but the figure is increased by the addition of "7". To illustrate:

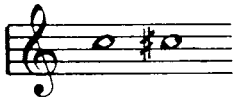


Notice that the unison, octave, 5th(12th) and 4th(11th) are called **Perfect** intervals. The 2nd(9th), 3rd(10th), 6th(13th) and 7th(14th) are called **Major** intervals.

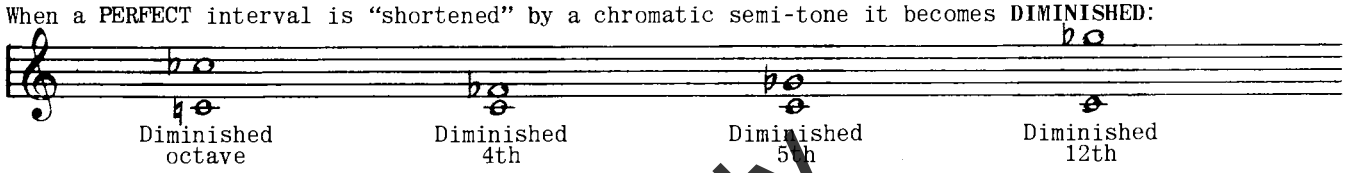
When a **PERFECT** interval is "lengthened" by a chromatic semi-tone (i.e., lengthened by a ½ step without changing the "letters") it becomes **AUGMENTED:**



*In melody the Augmented unison is called a "chromatic" semi-tone:



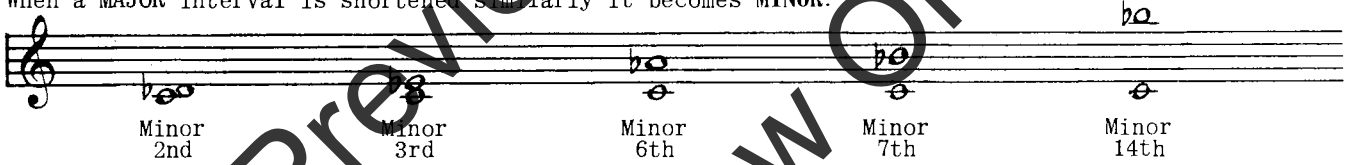
When a **PERFECT** interval is "shortened" by a chromatic semi-tone it becomes **DIMINISHED:**



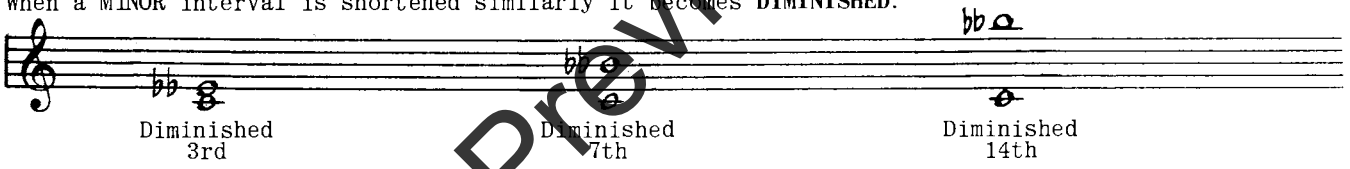
When a **MAJOR** interval is lengthened similarly it becomes **AUGMENTED:**

(not used!)

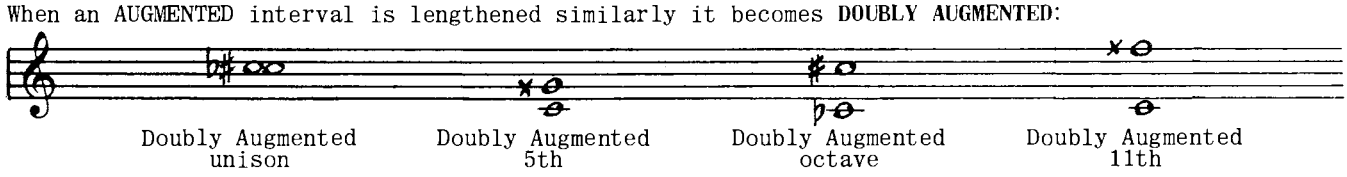
When a **MAJOR** interval is shortened similarly it becomes **MINOR:**



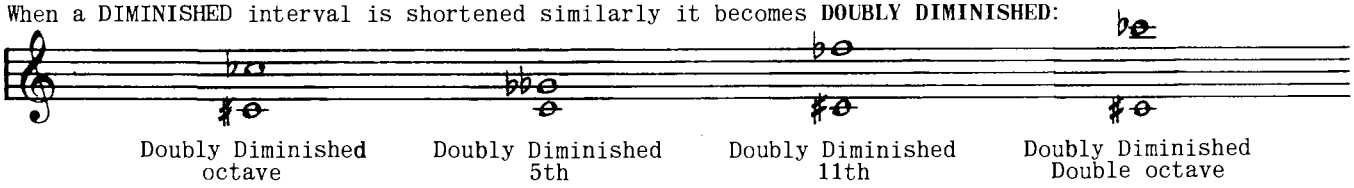
When a **MINOR** interval is shortened similarly it becomes **DIMINISHED:**



When an **AUGMENTED** interval is lengthened similarly it becomes **DOUBLY AUGMENTED:**



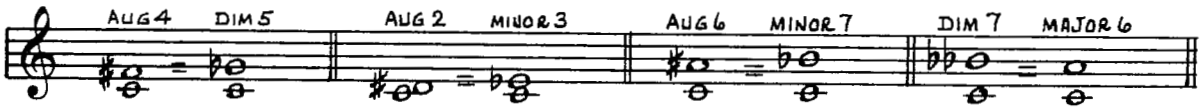
When a **DIMINISHED** interval is shortened similarly it becomes **DOUBLY DIMINISHED:**



SUMMATION:

Shorten				**Lengthen**	
Doubly Diminished	*Diminished*	←—**PERFECT**—→	*Augmented*	*Doubly Augmented*	
Doubly Diminished	*Diminished*	*Minor*	←— **MAJOR** —→	*Augmented*	*Doubly Augmented*

When notes are the same distance apart but are written with different "letters", they are said to be **ENHARMONIC** Intervals. To illustrate, the following intervals are **enharmonic equivalents:**



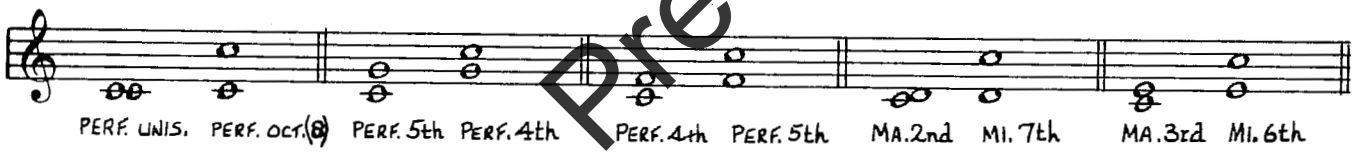
(Accurate notation will be encouraged in this text. Because while, for instance, an Augmented 2nd and a Minor 3rd are enharmonic equivalents, they receive an entirely different usage and, in a "tonal" context, are performed with a different "inflection".)

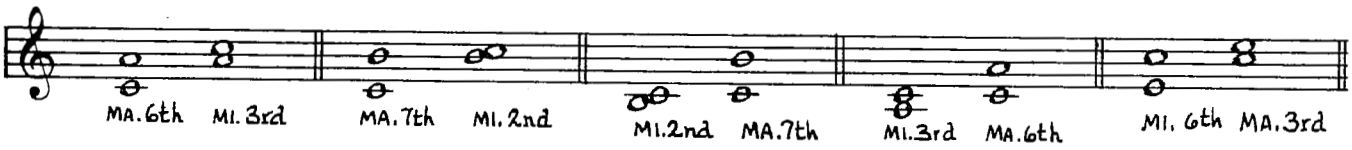
Intervals of an octave or less may be **inverted** (i.e., turned upside-down). **Inversion** occurs when the top note of the interval is moved down an octave, or when the bottom note is moved up an octave, as:

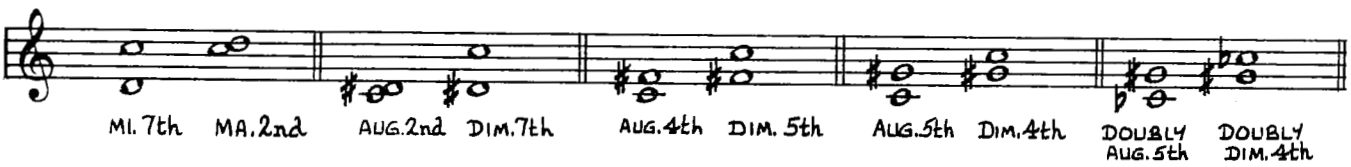
On INVERSION:

PERFECT intervals remain **PERFECT**
MAJOR intervals become **MINOR**
MINOR intervals become **MAJOR**
AUGMENTED intervals become **DIMINISHED**
DIMINISHED intervals become **AUGMENTED**
DOUBLY AUGMENTED intervals become **DOUBLY DIMINISHED**
DOUBLY DIMINISHED intervals become **DOUBLY AUGMENTED**

Subtract the number of the interval from "9" to get the number of its inversion. To illustrate:







Finally, the ultimate importance of an interval, or any other musical grouping, is its **SOUND**. It is essential that all of the intervals be understood AURALLY. Music writing is unique as an art form, in that the notes the arranger or composer puts on paper do not become music until they are performed. The written notes are just the shadow of the sound. Therefore, the student MUST cultivate, at every step of the way, the ability to *hear* the sounds which are represented by the written notes and, further, the ability to transform the sounds he "hears" mentally into correct notation on the page.

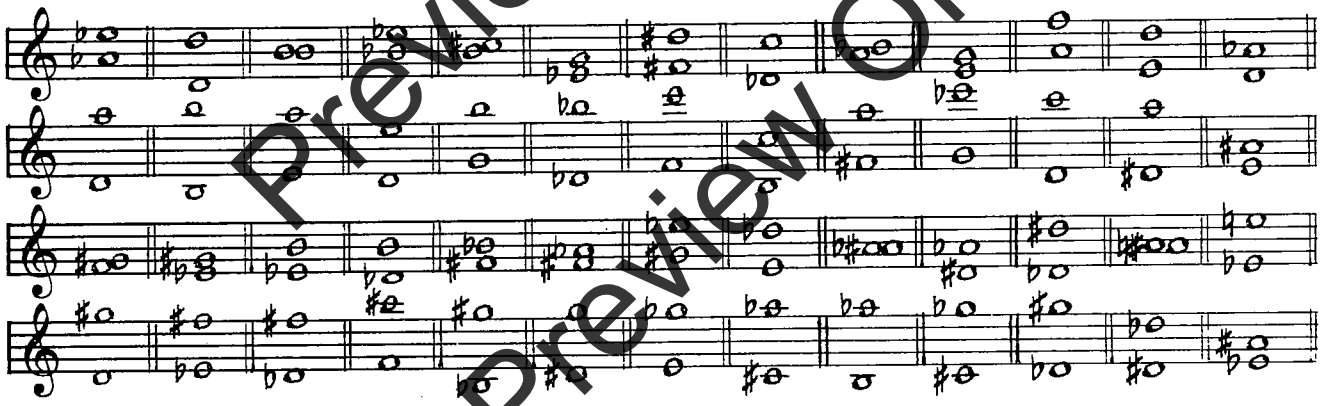
Melodies are composed of successive intervals; harmonies are composed of simultaneous intervals. Clearly, therefore, the ability to hear all of the intervals is vital. Listen to them! Sing them!

While intervals must eventually be heard for themselves alone, it can be helpful at this point to associate each interval with part of a familiar melody. (For instance, the first two notes of the "BRIDAL CHORUS" from Lohengrin, "Here Comes the Bride", form the dominant to tonic "perfect 4th")

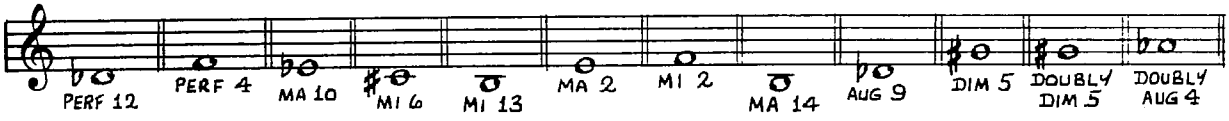
ASSIGNMENT 6 (Interval Basics)

1. Examine and listen to the interval relationships between various notes of the Major (Ionian) scale. Create and answer a number of questions such as: "What is the interval from the supertonic up to the subdominant, from the tonic down to the supertonic," etc., etc.

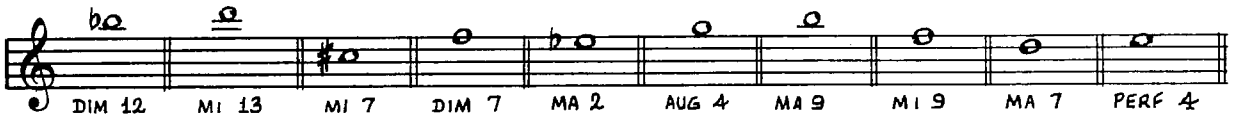
2. Name the following intervals. **Hear!**



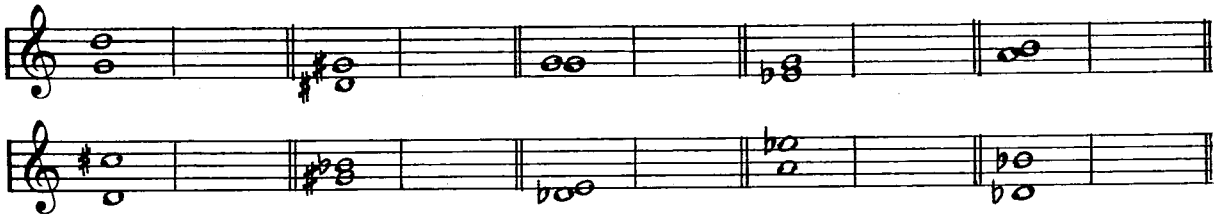
3. Write the correct note ABOVE each of the following, to create the indicated interval:



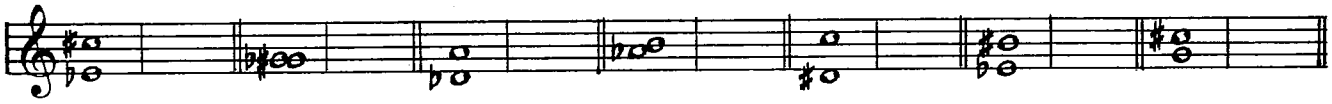
4. Write the correct note BELOW each of the following, to create the indicated interval:



5. Name the following intervals, then write and name their inversions, in spaces provided:



6. Give at least one "enharmonic equivalent" for each of the following:



7. **The ear**: Develop the ability to recognize on hearing, and to sing, any of the simple intervals.

THE HARMONIC OVERTONE SERIES

Introductory:

Any single tone is the *root* of an infinite number of **overtones**, which gradually diminish in intensity as they get higher. Any single tone, therefore, carries with it its own **Harmonic Overtone Series.**

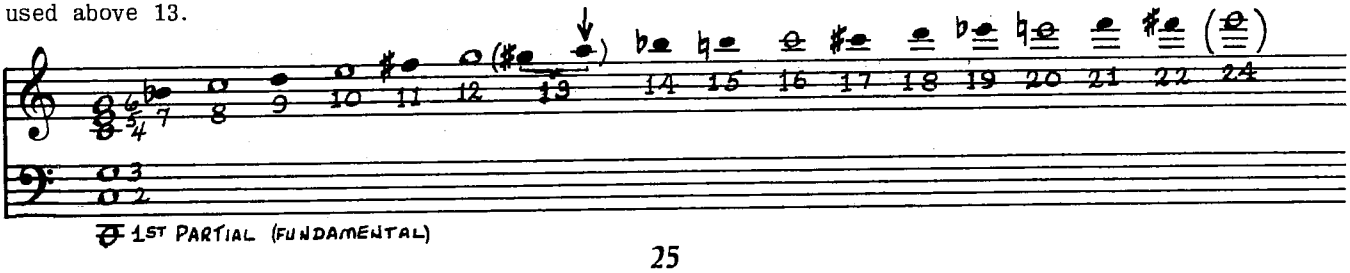
Musical tones are produced by the vibration of "sonorous bodies", such as strings (violin, string bass, guitar, piano, etc.), columns of air (the wind instruments), etc. **Pitch** is generally controlled by adjusting the speed of the vibrating body. In the case of a taut string, this is done by shortening or lengthening it. The shorter it is made, the higher the tone will be.

No matter what the length of the vibrating body, it will vibrate in its full length and also in all of its mathematical divisions (½, ⅓, ¼, ⅕ etc.). Each of these divisions produces, at least theoretically, a different tone. The total effect of each musical sound is the result of all of the tones. (The reader who is interested in a full examination of this phenomenon can refer to any book on acoustical physics.)

All of the **vertical** considerations in music (i.e., the structure of chords, chord extension, chord voicing, omitted and doubled notes in chords, etc.) are related to the structure of the Harmonic Overtone Series. This text will be concerned with a few basic acoustical facts in order that these vertical considerations will be more understandable and clear.

Details:

The root of any overtone series is called the **fundamental** and is numbered as the 1st PARTIAL. The 1st overtone is not referred to as such but, rather, is called the 2nd PARTIAL. All others follow upwards in mathematical order. Here is the Harmonic Overtone Series on the note "C", two octaves below "middle C". The partials are given up to 22, but in "arranging harmony" the series is rarely used above 13.



Note:

The 1st six partials are indicated here, with their octave transpositions, in *white* notes because they are the most audible and the most "in tune" in equal temperament. They form the major **common chord.**

The 13th partial is about half-way between the Augmented 12th and the Major 13th. In practice, the *Major 13th is used.*

The 3rd partial is a Perfect 5th.
The 5th partial is a Major 3rd.

In the case of the 7th, 9th, 11th, and 13th partials, there is relation between the partial number and the interval name.

The 7th partial is a Minor 7th above "4".
The 9th partial is a Major 9th above "4".
The 11th partial is an Augmented 11th above "4".
The 13th partial is a Major 13th above "4".

The octave above any note is double the vibration frequency. Therefore, the 2nd, 4th, 8th, 16th partials are octave transpositions of the fundamental.

The 6th and 12th partials etc., are octave transpositions of "3"
The 10th and 20th partials are octave transpositions of "5"

In addition to the quality of Perfect, Major, Minor etc., each interval and chord can be measured for its:

HARMONIC STRENGTH

FUSION

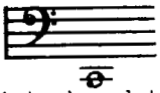
TENSION

CLARITY

DENSITY

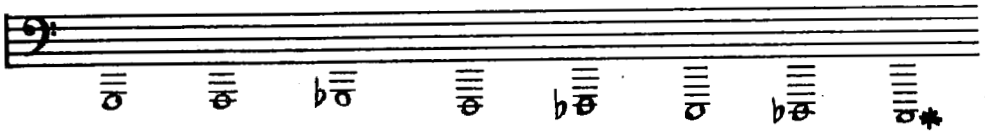
Each of these qualities is in some way related to the position the interval occupies in the Harmonic Overtone Series. Each will be examined in the following text.

ASSIGNMENT 7 (The Harmonic Overtone Series)

1. At piano, with the sustaining pedal, play: 

   (or any other note in the same general register) and try to hear the "partials" above it. After the 1st six become audible to you, try for the 7th, 9th, 11th.

2. Write the Harmonic Overtone Series (up to at least the 13th partial) on each of the following "fundamentals":



*"A" 27½ vibrations per second, the lowest note on a standard piano keyboard.

3. Create and answer a page or so of questions such as:

What note is the: 6th partial of "D"?
11th partial of "D♭"?
9th partial of "E"?
etc., etc.

4. Create and answer a number of questions such as:

"D" is the 5th partial of what Overtone Series?
"B♭" is the 3rd partial of what Overtone Series?
etc., etc.

5. **The ear:** Develop the ability to comprehend the **sound** of the Overtone Series. Also, try to develop TONAL VISION, the ability to "see" the Overtone Series MENTALLY, on any fundamental. (This Tonal Vision is a valuable ability with all musical elements.)

HARMONIC STRENGTH

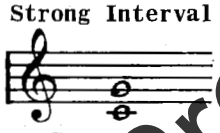
Two tones sounding simultaneously, as an interval, produce another tone or tones *below* the interval. These result from the SUBTRACTION of the vibration frequencies of the tones of the interval, and are called **Difference Tones.** To illustrate:

Tone: 50 V.P.S.
Interval
Tone: 40 V.P.S.
Difference Tone: 10 V.P.S.

From the Difference Tone or Tones comes the **ACOUSTICAL ROOT** of the interval. And the "closer" this Acoustical Root is to the interval, the greater is the HARMONIC STRENGTH of the interval.

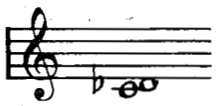
Harmonic Strength is, roughly, harmonic "implication". A STRONG interval will suggest or outline a **chord**; a WEAK one will not, or at best will be ambiguous.
To illustrate: (play)

Strong Interval



Suggests "C major chord"

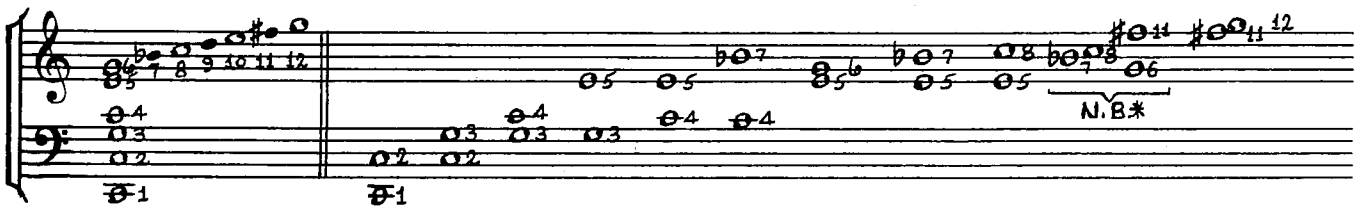
Weak Interval



No harmonic suggestion.

In order to calculate the Difference Tones and the resulting Acoustical Roots, it *isn't* necessary to know the actual vibration frequencies of the tones of the interval. Only the VIBRATION FREQUENCY RATIOS must be known. These will be the PARTIAL NUMBERS from the 1st appearance, from the bottom up, of each interval in the Harmonic Overtone Series. The further away from **"1"** the interval is, the WEAKER it will be.

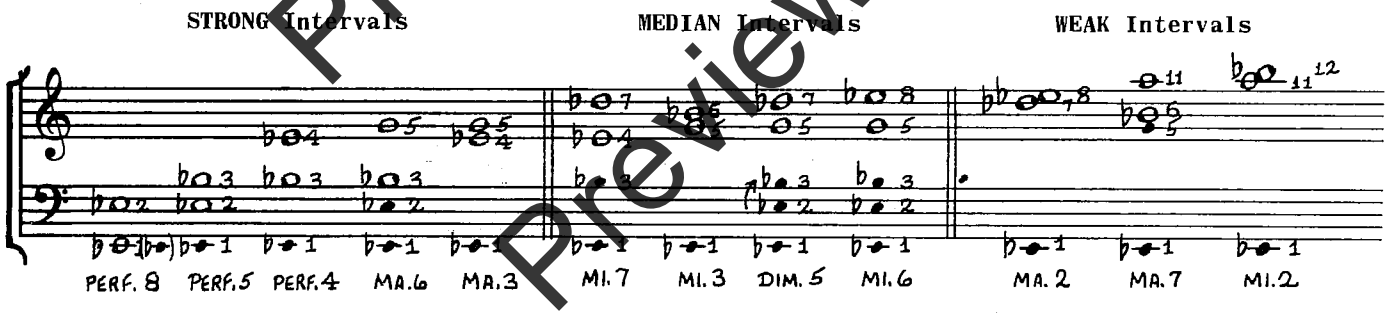
On the following page are the intervals from the Harmonic Overtone Series, reading upward. The **"C"** series is used for example purposes, but the same result would be gained with any fundamental. Intervals of more than one octave will not be considered.



	Intervals in order of Harmonic Strength	Vibration Frequency Ratios
STRONG Intervals	1. Perfect Octave	2:1
	2. Perfect 5th	3:2
	3. Perfect 4th	4:3
	4. Major 6th	5:3
	5. Major 3rd	5:4
MEDIAN Intervals	6. Minor 7th	7:4
	7. Minor 3rd	6:5
	8. Diminished 5th	7:5
	9. Minor 6th	8:5
WEAK Intervals	10. Major 2nd	8:7 *
	11. Major 7th	11:6 *
	12. Minor 2nd	12:11

*NOTE: Although the bottom note of the Major 7th is lower in the series, the Major 2nd is *stronger*, because its ratio is less complex.

Here, using the "E♭" series for illustration, is the actual *"physical"* process that occurs. Take note of the observations that follow.

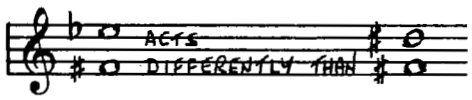


Observations:

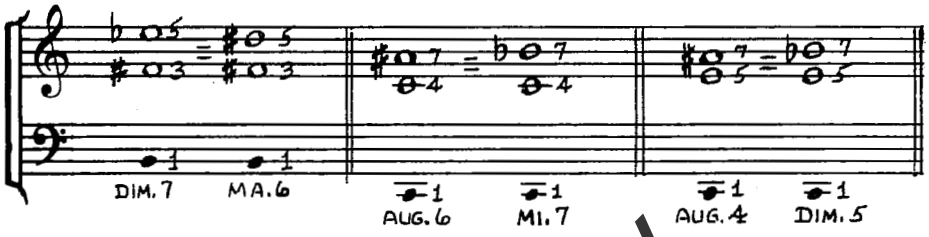
1. Some intervals (e.g., the Minor 6th) have more than one difference tone, but the acoustical root is ALWAYS "1". In practice, it ISN'T necessary to calculate all of the difference tones. *Only the "1" is important* and as long as the ratio of an interval is known, a reference to the overtone series will provide the "1". (For instance, the ratio "8:5" simply means that the top note is the 8th partial and the bottom note is the 5th partial. The "1" should, therefore, be obvious.)

2. Note that the intervals are gradually *weaker* as they are further removed from the root (1) which is, in the above illustration, the low E♭.

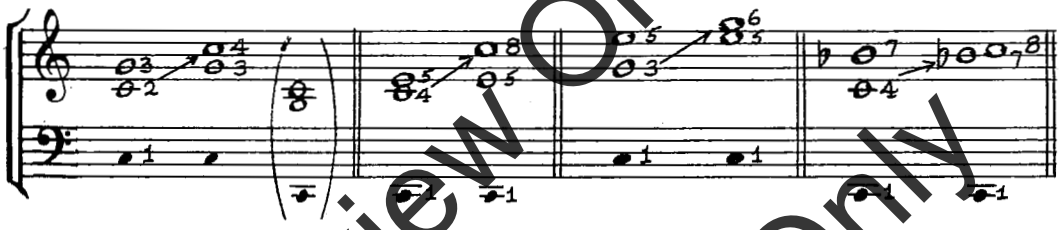
3. The "enharmonic" writing of an interval DOES affect its implication and its handling in **Context.** For example, the following intervals are "enharmonic equivalents" but will act and sound quite differently in context:



But the "enharmonism" DOESN'T, in equal temperament, significantly change the purely "vertical" considerations. Therefore, any interval which isn't one of the basic twelve will be an "enharmonic equivalent" of one of them, and will have the same **ratio and root.** To illustrate:

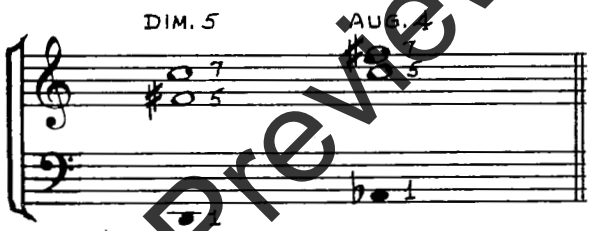


4. On inversion, the intervals (**with one exception**) retain the *same* root, or an octave transposition of it, depending on the direction of the inversion. To illustrate:



The Exception: The TRITONE (Aug. 4th = Dim. 5th)

On inversion, all other intervals change **SOUND**, causing the ratios to change. The tritone, which is a two-way equal division of the octave, retains the same **SOUND**. Therefore, it retains the same ratio. Consequently, its root changes. Example:



Note that the *new root* is a tritone (Dim. 5) away from the original root. In point of fact, the tritone is called **NEUTRAL**, or "ambiguous". Either one of the roots will fit either inversion.

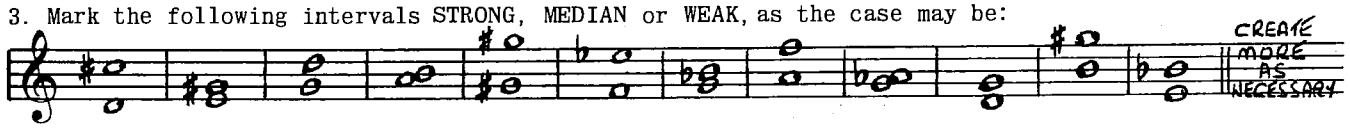
This fact underlies the theory of SUBSTITUTE DOMINANTS (e.g., an "$A\flat^7$" can substitute for a "D^7"). See later text on the "Augmented 6th Group" (Volume II, Chapter 2).

ASSIGNMENT 8 (Harmonic Strength)

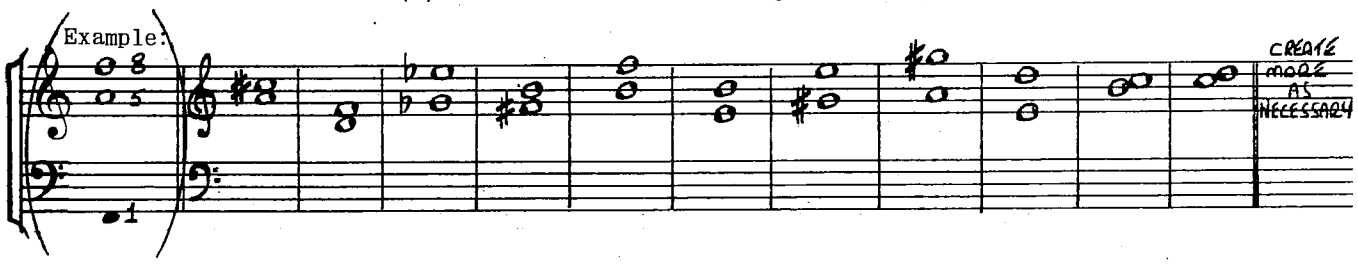
1. Learn the VIBRATION FREQUENCY RATIOS, and the order of HARMONIC STRENGTH.

2. The vibration frequency ratio of a Perfect 5th is 3:2. What is the ratio of a Major 3rd? Minor 3rd? Major 6th? Minor 6th? Minor 7th? Major 7th? Minor 2nd? Major 2nd? Perfect 4th? Diminished 5th? Perfect Octave? Augmented 4th? Diminished 7th? Augmented 2nd? Augmented 6th? Augmented 5th?

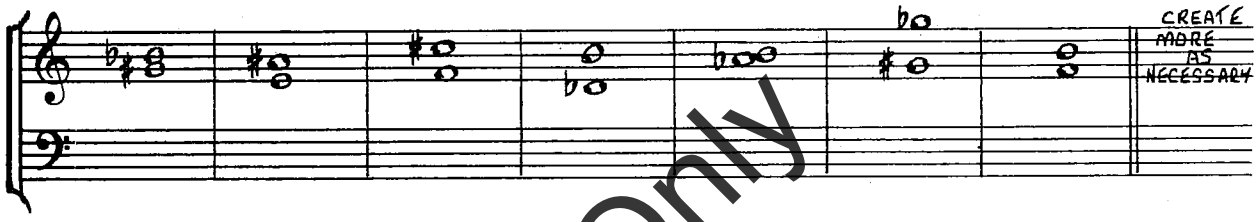
3. Mark the following intervals STRONG, MEDIAN or WEAK, as the case may be:



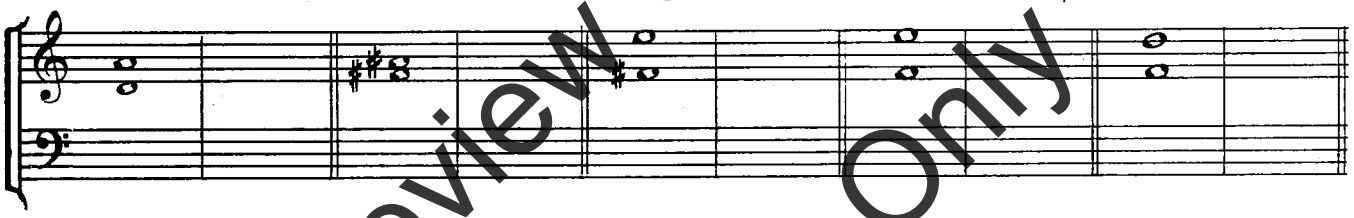
4. Give the ratios and roots (1) for each of the following intervals, as in the example. **Hear!**



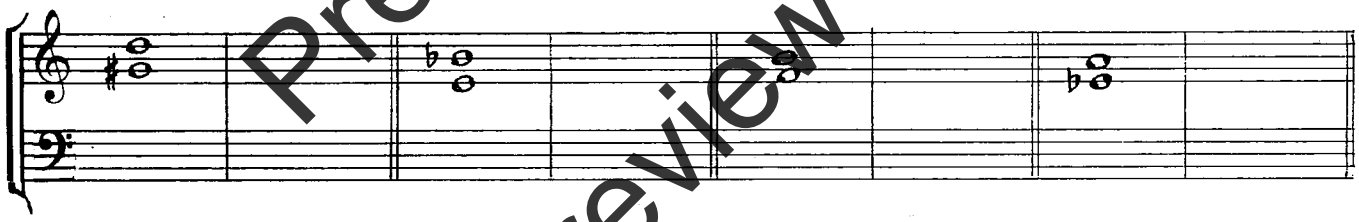
5. Give the ratios and roots of the following "enharmonic" intervals:



6. Give the ratios and roots for the following, *invert* in space provided, and give the ratios and roots of the inversions:



The following are tritones. Note how they change roots on inversion:



7. The two possible roots for the tritone "B and F" are G and D♭. What are the two possible roots for each of the following tritones: G♯ and D? E and B♭? F♯ and C? G and D♭?

8. **The ear**: Play intervals in the middle register of the piano and develop the ability to *hear* and sing the roots, or octave higher "root representatives", of at least the Strong intervals.

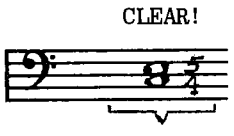
HARMONIC STRENGTH CONCLUDED

SAFE LOW LIMITS

Generalization:

Any interval, in or out of a chord, which has an acoustical root BELOW "A 27½ V.P.S." (lowest note on a standard piano keyboard) will tend to sound "blurred", "foggy", "muddy".

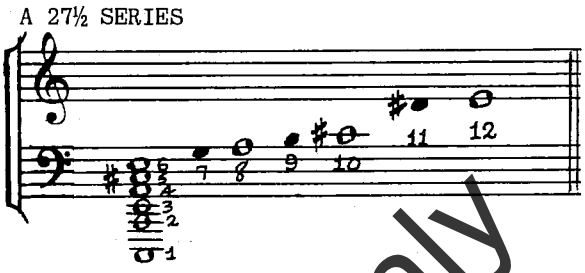
To illustrate:



Acoustical root "C" above A 27½

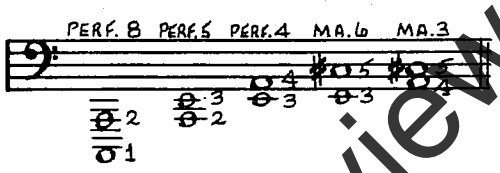
Acoustical root "E♭" below A 27½

Therefore, the 1st appearance of each interval in the A 27½ series can be regarded as the **Safe Low Limit** for the placing of the interval:

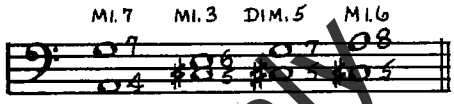


Safe Low Limits

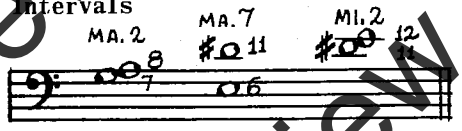
STRONG Intervals



MEDIAN Intervals



WEAK Intervals



When any interval is played below the Safe Low Limit, (as illustrated above) it will tend to blur.

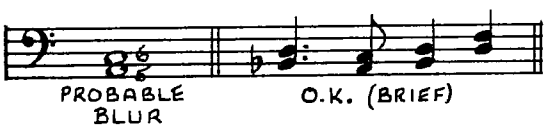
The Safe Low Limits are certainly not "law". They are important chiefly with the Strong intervals. The Strong Perfect 5th, for instance, will likely "blur" when played even a short distance below its theoretical Safe Low Limit. On the other hand, a Weak Major 7th can be played quite a distance below its Safe Low Limit before becoming troublesome.

Further:

The instruments involved in a *low* interval can affect its degree of "blur".

Duration is a factor. A *low* grouping which is brief and unaccented will probably be satisfactory. Example:

Trombones



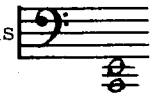
Dynamic Level is a factor. A *low* grouping sounded at "pp" will be less blurred than the same grouping at "ff". Example:

A *low* grouping CAN be musically desirable. Example:

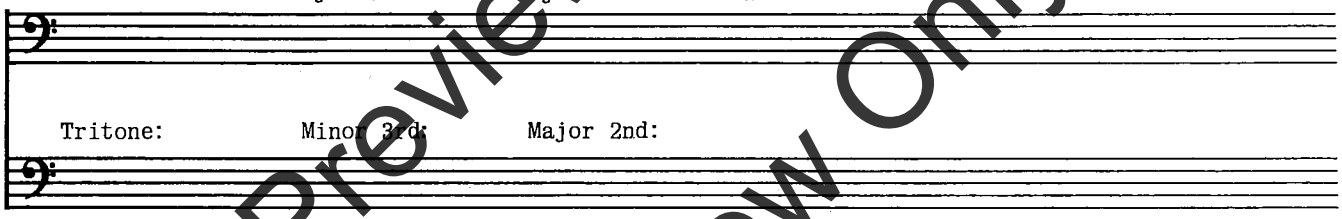
Nevertheless, clear voicing is normally desirable in orchestration, and a grouping that is played below the Safe Low Limit may work against the interests of clear voicing.

ASSIGNMENT 9 (Harmonic Strength Concluded - "Safe Low Limits")

1. Learn the Safe Low Limit for each interval. ("A" 25½ overtone series)

2. The Safe Low Limit for the interval of a Perfect 5th is  Write each of the following intervals at its Safe Low Limit:

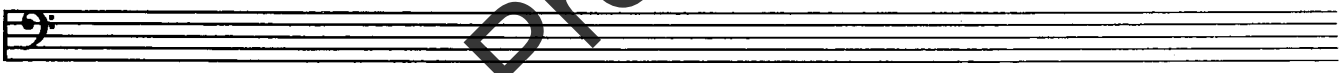
Perfect 4th: Major 3rd: Major 6th: Minor 6th: Minor 7th:



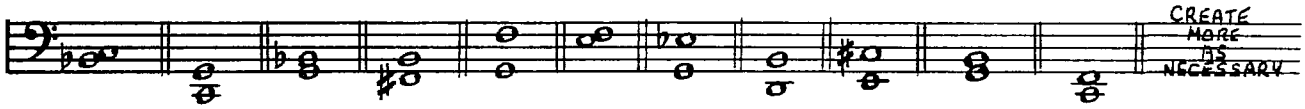
Tritone: Minor 3rd: Major 2nd:

3. The Safe Low Limit for the 5th partial is: Write each of the following partials at its Safe Low Limit:

3rd partial: 2nd partial: 7th partial: 10th partial: 4th partial:



4. Mark the intervals in the following which are BELOW the Safe Low Limit:



5. **The ear**: Note the blurred quality which results when an interval, particularly a Strong interval, is played too far below its Safe Low Limit.

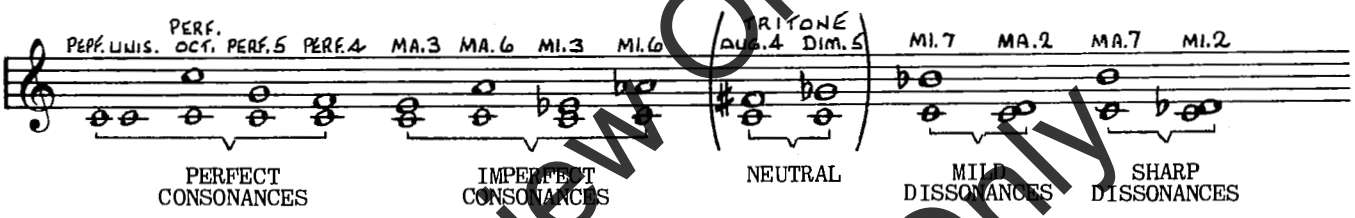
FUSION AND TENSION

The term **Dissonance** in music means *"unstable"*. A dissonant note, interval, or chord is, simply, a note, interval, or chord which shows a tendency to "resolve" or a desire to "move".

However, perhaps unfortunately, the term is also used to refer to the quality of "harshness" or "edge", the quality which is associated with, for instance, the interval of a Minor 2nd. This quality is more accurately termed **Tension**, which is the opposite of **Fusion**. An interval with Fusion shows *tone-affinity*; the notes are compatible with each other. Tension is the lack of this *tone-affinity*.

The following catalogue of the intervals in order of **Fusion to Tension** can be regarded as a sort of interval "spectrum". Note that the intervals are grouped into five TENSION CATEGORIES and the terms Consonance and Dissonance are here used with reference to the degrees of **Tension**. (Whether or not any interval is Dissonant in the sense of "unstable" depends to a great degree on the context and the style of the music. In traditional harmony, for instance, the Perfect 4th is often regarded as a Dissonance and, in a modern style the Sharp Dissonance can sometimes sound relatively restful or Consonant!)

FUSION **TENSION**



THE FIVE TENSION CATEGORIES

1. **Perfect Consonances**	Perf. unison, Perf. octave, Perf. 5, Perf. 4
2. **Imperfect Consonances**	Major and Minor 3rds and 6ths
3. **Neutral**	Tritone
4. **Mild Dissonances**	Minor 7th, Major 2nd
5. **Sharp Dissonances**	Major 7th, Minor 2nd

Important Note: ALL intervals remain in the SAME TENSION CATEGORY on INVERSION! Among other things this means that two parts forming a "duet" can be inverted without substantially changing the overall quality of the duet harmony.

The role played by Fusion and Tension in harmony is an important one. In fact, the **style** of the harmony used is dependent, to a great degree, on the attitude which is taken to the use of the Tension Categories. *All of the so-called RULES of harmony are "stylistic" rules only-* That is, all "rules" are concerned only with the retaining of the intended style.

Herewith is a brief (AND GREATLY OVERSIMPLIFIED) survey of the changing attitudes to the Tension Categories. The survey is grouped, for convenience, as follows:

A. Early Harmony

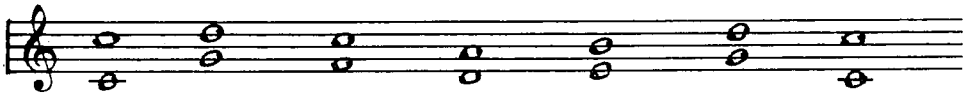
B. Traditional Harmony

C. Modern Harmony

A. EARLY HARMONY

Primarily the Perfect Consonances were used, (particularly the Perfect 5th and occasionally the the Perfect 4th).

Duet example:



B. TRADITIONAL HARMONY

With the gradual awareness of the 5th partial, the **Imperfect Consonances** entered. (Major and Minor 3rds and 6ths.) Musicians were attracted to these "new sounds" and quickly found that the Perfect Consonances didn't suit the new style. (Note, at the piano, how a Parallel 5th tends to "stick out" in a passage of Parallel 3rds.) So stylistic "laws" were gradually formulated governing the previously free Perfect Consonances! (For instance: no parallel unisons, octaves, or 5ths, and the Perfect 4th required, in certain situations, "resolution".)

With the awareness of the 7th partial, the **Dissonances** entered (2nds and 7ths). These were not freely used but were governed by strict "laws" of approach and release.

Emerging from this is a style in which ALL intervals are used, but ONLY the Imperfect Consonances enjoy freedom! The Perfect Consonances and the Dissonances are used only with respect to certain "Stylistic" rules. It is this "style" which is the basis of:

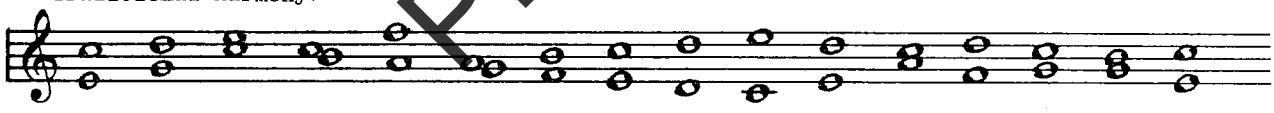
1. The harmony of the Classical and Romantic periods.
2. Present day popular harmony and most jazz.

The study of harmony in this text is primarily concerned with this style.

Duet examples:

1. Imperfect Consonances only:

2. ALL intervals used, but ONLY the Imperfect Consonances are used freely. The Perfect Consonances and Dissonances which appear are used with respect to the "rules" of Traditional Harmony:



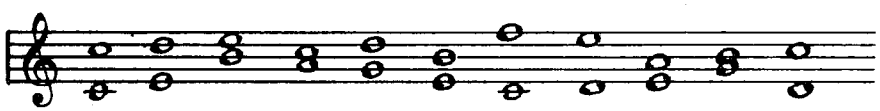
C. MODERN HARMONY

1. A reaction against the sound of the Imperfect Consonances.

2. A return to the early freedom of the Perfect Consonances.

3. A more free and unrestricted use of the Dissonances.

Duet example:



Summation:

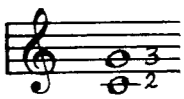
	Spectrum		
EARLY HARMONY:	Perfect Consonances THESE ONLY	Imperfect Consonances	Neutral and Dissonances
TRADITIONAL HARMONY:	Perfect Consonances RULES!	Imperfect Consonances FREE	Neutral and Dissonances RULES!
	ALL USED		
MODERN HARMONY:	Perfect Consonances FREE	Imperfect Consonances SOME DOUBT	Neutral and Dissonances FREE
	ALL USED		

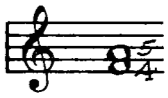
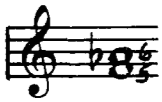
CLARITY AND DENSITY

Clarity ("Clearness")

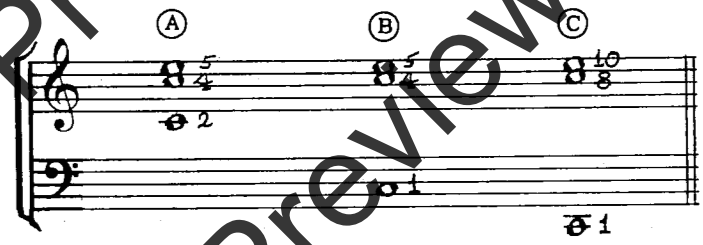
In general, the greatest **clarity** is achieved with the lowest partial numbers. To illustrate:

Play!

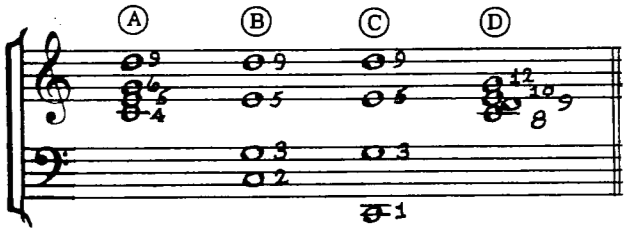

has more clarity than:


has more clarity than:


Of the following groupings "B" has the most clarity:



Of the following groupings (C Major chord with added "9th") "C" has the most clarity:

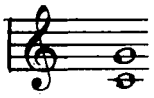
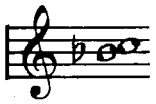
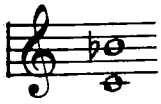


Density ("Thickness")

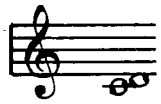
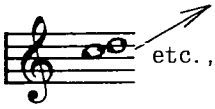
In general, the more implied "sound" (i.e., the more audible overtones, difference tones, etc.), the greater the **density**.

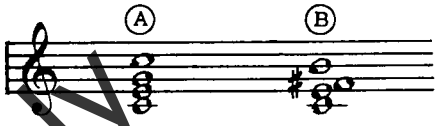
To illustrate:

Play!

 has more density than:   has more density than: 

Because more overtones come into audible range, any interval will increase in density as it is played lower. Example:

 has more density than:  etc., to less density.

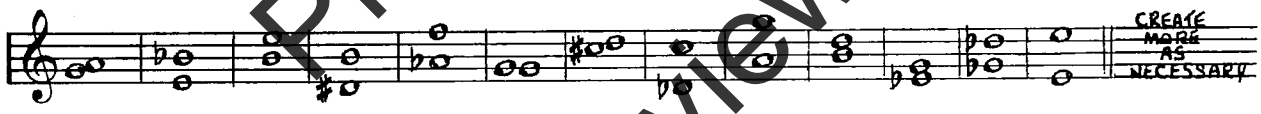
Of the following groupings, "B" has more density: 

Clarity and Density are neither *good* nor *bad* in themselves. However, any "style" or context requires control of them. For instance, a chord such as "B" above would likely have too much Density for use in a "society dance band" arrangement, but could be quite suitable in a context of similar harmonic structures as used in modern jazz arranging.

ASSIGNMENT 10 (Fusion and Tension, Clarity and Density)

1. Become familiar with the INTERVAL SPECTRUM (Tension categories).

2. Mark the following intervals Perfect Consonances, Imperfect Consonances, Neutral, Mild Dissonances or Sharp Dissonances, as the case may be:

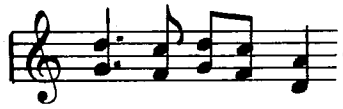


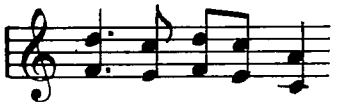
3. Using any *diatonic* Ionian Mode, create a short duet in whole notes, using only the Imperfect Consonances.

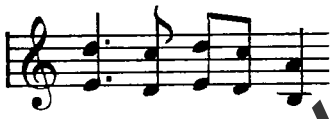
4. Listen for duet writing in recorded arrangements, noting the intervallic relationships which are used. Notice that in normal "popular" usage the Imperfect Consonances (which have enough tension to avoid the "hollow" sound of the Perfect Consonances, but not so much that they are "edgy") are the main intervals used for duets.

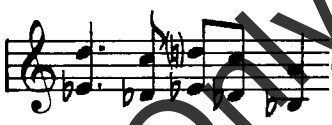
5. **The ear:**

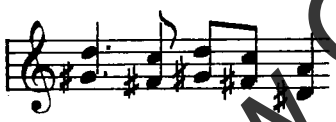
A. Develop the ability to recognize, by its sound, the Tension Category of any interval. Play groups of Parallel intervals at the piano, as illustrated, noting the different emotional quality that each tension category produces.

Parallel PERFECT CONSONANCES (5ths):  (Also try parallel Perfect 4ths)

Parallel IMPERFECT CONSONANCES (6ths):  (Also try parallel 3rds)

Parallel MILD DISSONANCES (Minor 7ths):  (Also try parallel Major 2nds)

Parallel SHARP DISSONANCES (Major 7ths):  (Also try parallel Minor 2nds)

Parallel NEUTRAL TRITONES: 

B. Develop the ability to recognize various degrees of **clarity** and **density**.

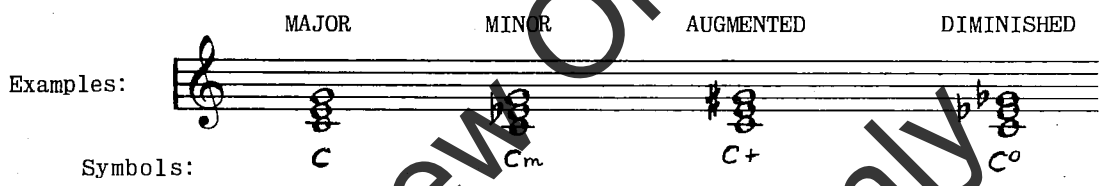
Chapter 3

CHORDS

TRIADS

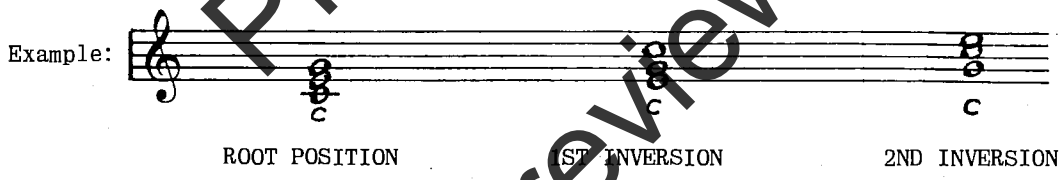
A **chord** is formed by the simultaneous sounding of three or more different notes. A three note chord is called a **triad**. In traditional practice there are four basic triad types:

MAJOR TRIAD	"Root" - - - - Major 3rd - - - - Perfect 5th
MINOR TRIAD	"Root" - - - - Minor 3rd - - - - Perfect 5th
AUGMENTED TRIAD	"Root" - - - - Major 3rd - - - - Augmented 5th
DIMINISHED TRIAD	"Apparent Root" - - Minor 3rd - - - - Diminished 5th



A triad may be in three positions:

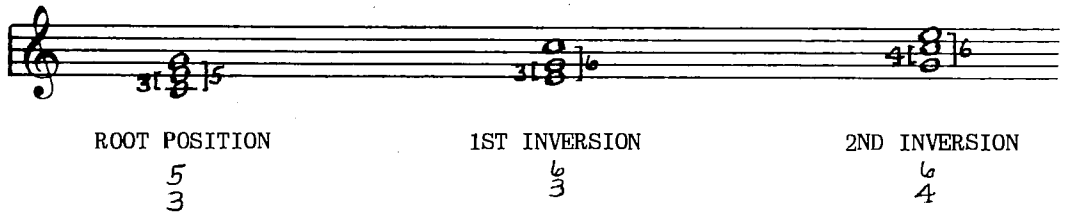
Root Position	Root at bottom
1st Inversion	3rd at bottom
2nd Inversion	5th at bottom



FIGURED BASS

The **Figured Bass** is a traditional system of "figures" placed under bass notes to indicate the type of chord. At one time the Figured Bass system was used in practical writing. This is no longer the case, but some of the terminology of the system is still prevalent, and the system saves time in the study of harmony. This text will NOT use the Figured Bass system as extensively as some do, but it will be employed to a degree. Here are the basic details.

The figures indicate the intervals between the bottom note (bass) and the notes of the chord above it, as:



Therefore:

In ROOT POSITION a triad is a $\frac{5}{3}$ chord, but, in practice, is generally not figured at all.

In 1ST INVERSION a triad is a $\frac{6}{3}$ chord, but, in practice, the figure is abbreviated to just 6.

In 2ND INVERSION a triad is a $\frac{6}{4}$ chord.

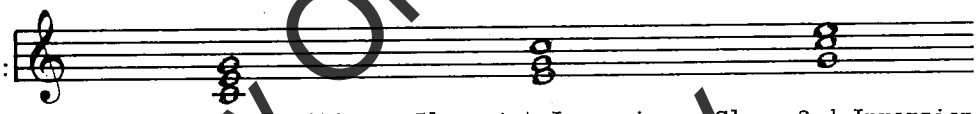
So: C = C major triad, ROOT POSITION
$C^{(6)}$ = C major triad, 1ST INVERSION*
$C^{(\frac{6}{4})}$ = C major triad, 2ND INVERSION

*In the CHORD SYMBOL system C^6 means a C major chord with "added 6th" and doesn't refer to the 1st Inversion!!

A triad may be in **close** or **open** voicing.

Close voicing means that the triad is voiced within an octave. (Or, to put it another way, voiced in such a way that no notes of the chord can be placed between the notes that are there.)

Close voicings:



Close Root Position | Close 1st Inversion (6) | Close 2nd Inversion ($\frac{6}{4}$)

Open voicings cover more than an octave.

Open voicings:

Open Root Position | Open 1st Inversion (6) | Open 2nd Inversion ($\frac{6}{4}$)

Note! The Figured Bass does NOT indicate the voicing. So, for instance, a C chord with a G in the bass is a $\frac{6}{4}$ chord no matter how the notes above it are spaced.

The sound of these triads, and their inversions, is the important thing. In the case of Major and Minor triads, the following observations are pertinent:

Root Position - - - Firm, secure, conclusive.

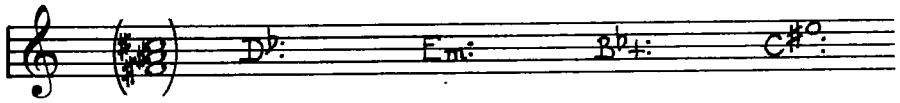
1st Inversion (6) - - - Lighter, more "airy". (Higher partial numbers)

2nd Inversion ($\frac{6}{4}$) - - - Unstable, uncertain. In traditional harmony the $\frac{6}{4}$ chord is regarded as Dissonant and its use is guided by a number of "stylistic" rules. (See later text on $\frac{6}{4}$ chords, Volume I, chapter 9.)

ASSIGNMENT 11 (Triads)

1. Write triads as follows. (Example using F♯ ma triad given in each case.) **Hear!**

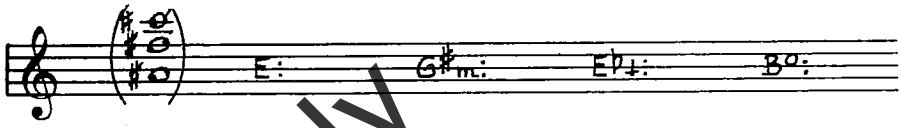
In close Root Position:



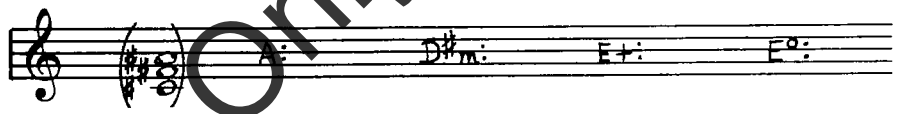
In open Root Position:

In close 1st Inversion (6):

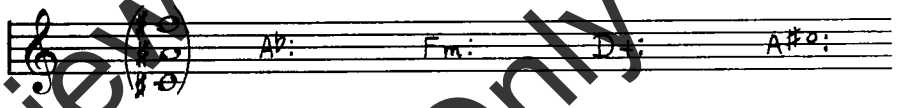
In open 1st Inversion (6):



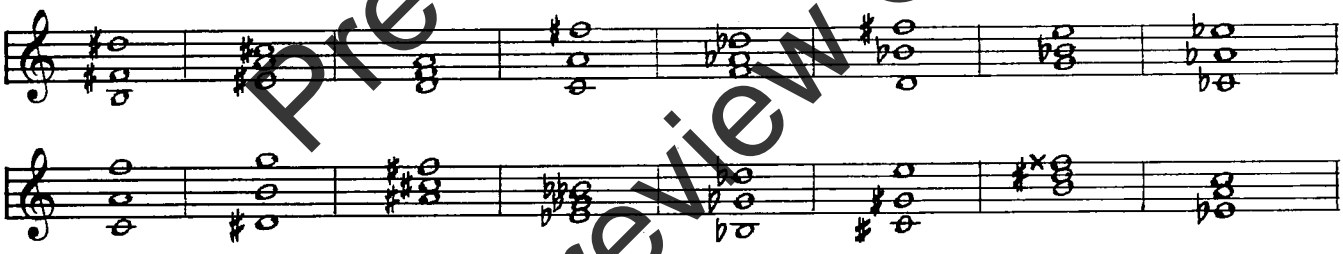
In close 2nd Inversion ($\frac{6}{4}$):



In open 2nd Inversion ($\frac{6}{4}$):



2. Name the following triads. Mark (6) if 1st Inversion, ($\frac{6}{4}$) if 2nd Inversion. Note whether voicing is *close* or *open*. **Hear!**



3. **The ear:** Develop the ability to recognize, on hearing:

MAJOR TRIADS
MINOR TRIADS
AUGMENTED TRIADS
DIMINISHED TRIADS

} In Root Position, 1st Inversion, 2nd Inversion

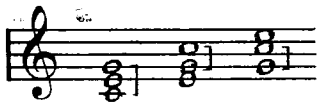
Note: Ear training can be expedited if an interested friend or fellow musician can be persuaded to play, at the piano, chords, intervals, scales, etc.

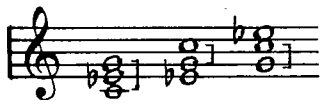
DETAILED EXAMINATION OF THE FOUR BASIC TRIAD TYPES

Preparatory fact: The root of a basic triad will be the root of the strongest interval in the triad.

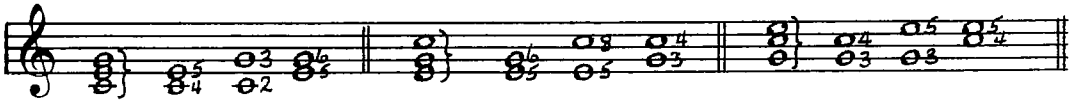
A. COMPARATIVE ANALYSIS OF **MAJOR** AND **MINOR** TRIADS

No matter in what position a Major or Minor triad is placed, the *strongest interval* will be the Perfect 5th (or its inversion, the Perfect 4th) formed by the root and Perfect 5th of the chord. Consequently, the root of a Major or Minor triad remains the same in all positions. To illustrate:

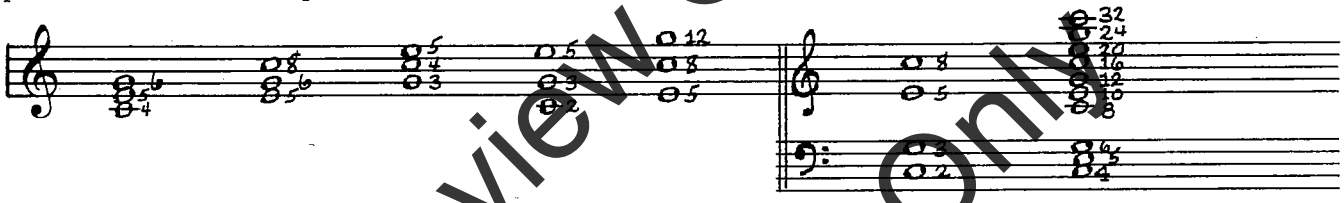
C Major triad: 
Root C in each case.

C Minor triad: 
Root C in each case.

Further, in all positions, the root of *every* interval in a Major triad is the same. Example:

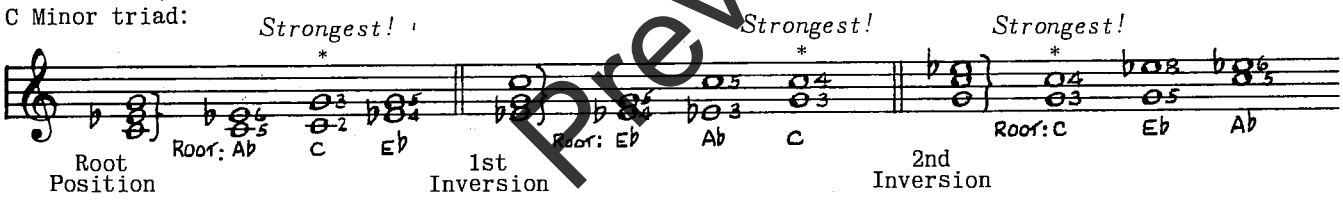
C Major triad: 
Root Position — Root "C" in each case — 1st Inversion — Root "C" in each case — 2nd Inversion — Root "C" in each case

Consequently, the Major triad is the "purest" possible arrangement of three different tones. It has a maximum of strength, fusion, and clarity, and a minimum of tension and density. It expresses normalcy, strength, patriotism, true love, etc. In any position or voicing, its notes are accurate partial numbers. Example:



Note: No matter how often the three notes are duplicated in other octaves, the chord is still called a **triad**.

On the other hand, the root of all intervals in a Minor triad is *not* the same. Example:

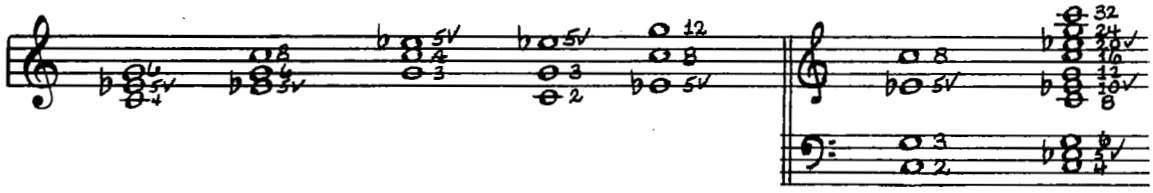
C Minor triad: 

Root Position — 1st Inversion — 2nd Inversion

Clearly the Minor triad is a much more complex grouping! There are three unrelated "difference tones" in each of its positions, and it retains its main root *only because of the STRONGEST interval in each case!*

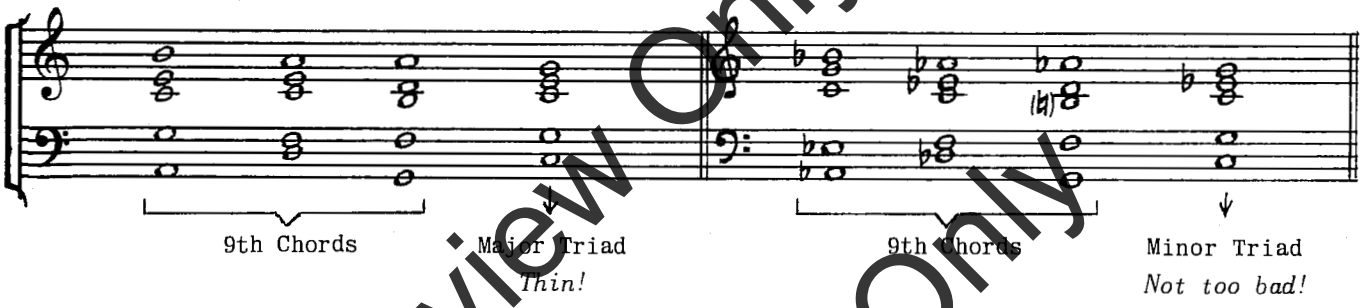
The Minor triad is, then, much "richer" than the Major. It has less strength, fusion, and clarity, but considerably more density and somewhat more tension. It expresses the opposite side of the emotional coin.

BUT: Its partial numbers are calculated *in the same way as the Major triad, except that the Minor 3rd is regarded as an "altered" 5th partial!* (which will be marked: 5✓, 10✓, etc). Note the partial numbers in the following Minor triads:



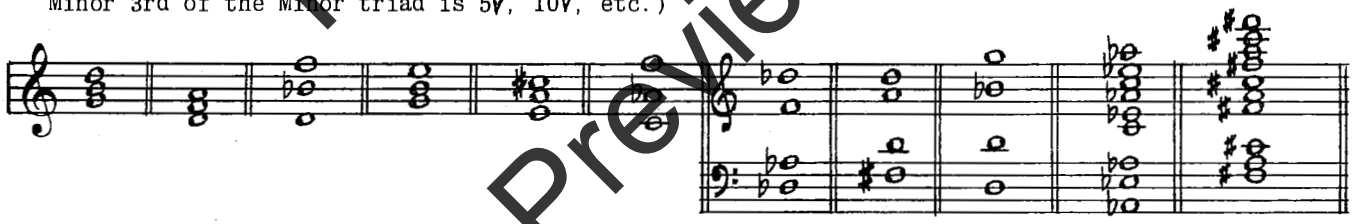
Therefore, the Minor triad has 33⅓% "distortion"; that is, one of its three notes is "altered" from the natural overtone series. It is this "distortion" that produces the characteristic "melancholy" of the Minor triad. (We will later see that some chords have as much as a 50% distortion, but NEVER MORE than 50%!)

The greater density and richness of a Minor triad can be illustrated. A Major triad in a context of five note 9th chords will likely sound "thin", but a Minor triad in a similar context will hold its own fairly well. Example: Play!

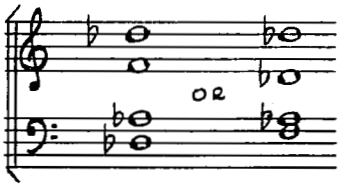


ASSIGNMENT 12 (Major & Minor Triads)

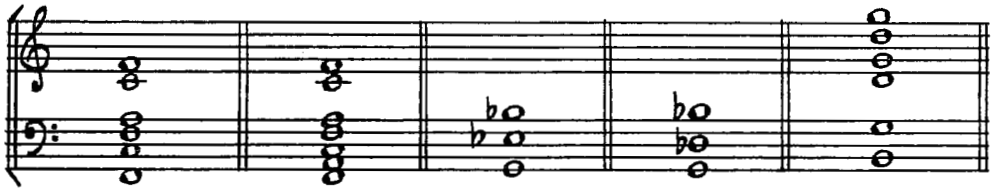
1. Give the partial number for each note of the following Major and Minor triads. (Remember: the Minor 3rd of the Minor triad is 5✓, 10✓, etc.)



2. Which of the following chords has more "clarity"?



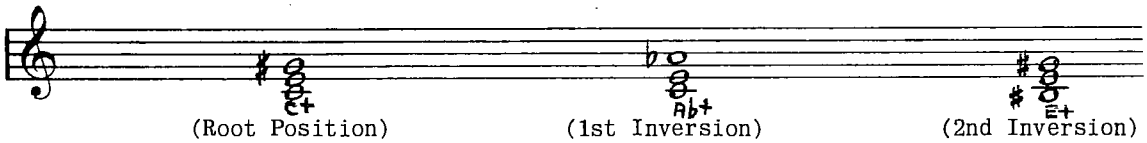
3. Mark the chords in the following which are BELOW the Safe Low Limit:



B. THE AUGMENTED AND DIMINISHED CHORDS (sometimes called the "Neutral" chords)

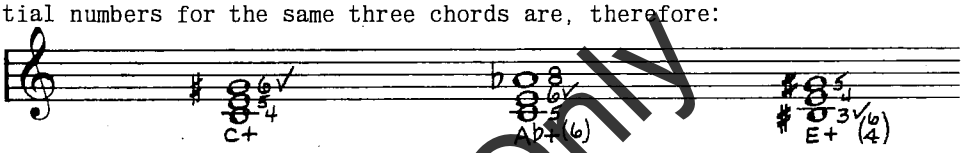
1. The **Augmented Triad**

An **Augmented triad** is a "symmetrical" grouping; that is, it is composed of similar intervals ("Major 3rds"). For instance, the following three chords are *enharmonic equivalents,* all of which sound the same on the piano, but each is named differently, according to its NOTATION:



(Root Position) (1st Inversion) (2nd Inversion)

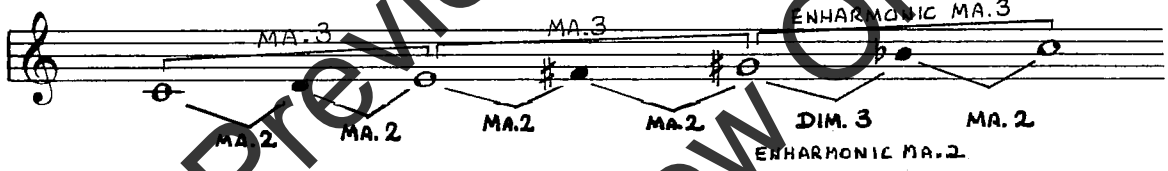
The partial numbers of the notes in an Augmented triad are also based on the NOTATION. The Augmented 5th itself is to be regarded as an "Altered" (raised) 3rd partial which is "3✓", "6✓", "12✓", etc. The partial numbers for the same three chords are, therefore:



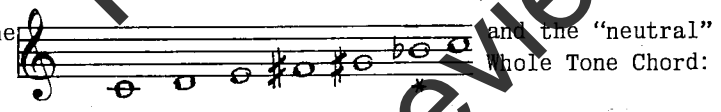
There are numerous ways to NOTATE Augmented triads but, since it is a three-way "equal division of the octave", there are really only four (12÷3=4).

2. The **Whole Tone Scale** and the **Whole Tone Chord**

Re-dividing the equal "Major 3rds" of an Augmented triad into equal "Major 2nds" results in a six-way "equal division of the octave". Example:



This produces the "neutral" Whole Tone Scale:



*"Minor 7th" notation favored for 6th note.

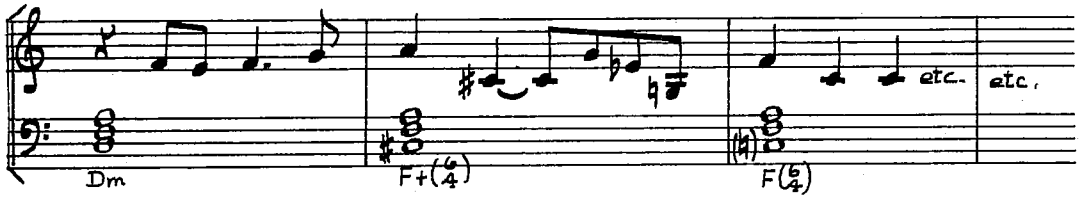
and the "neutral" Whole Tone Chord:

In 3rds In cluster form

There are numerous ways to NOTATE Whole Tone Scales and Chords but, since they are six-way equal divisions of the octave, there are really only two (12÷6=2).

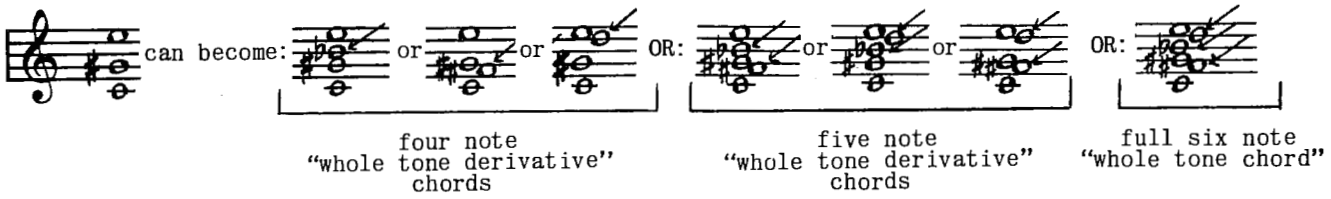
The Whole Tone Scale can be used for "melody" against an Augmented chord.

Example:

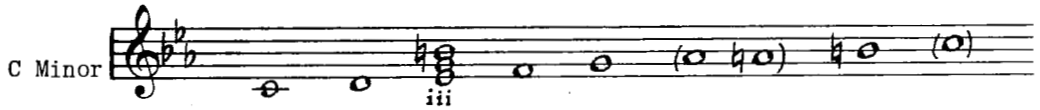


Melody here based on Whole Tone Scale derived from F+ chord.

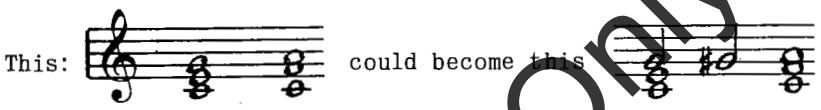
Any Augmented triad can be given increased density through the addition of one, two, or three of the adjacent whole tones from the Whole Tone Scale. Example:



There is only one Augmented chord found in the standard scales. It is the chord on the 3rd degree (mediant) of Harmonic and Melodic Ascending Minor.

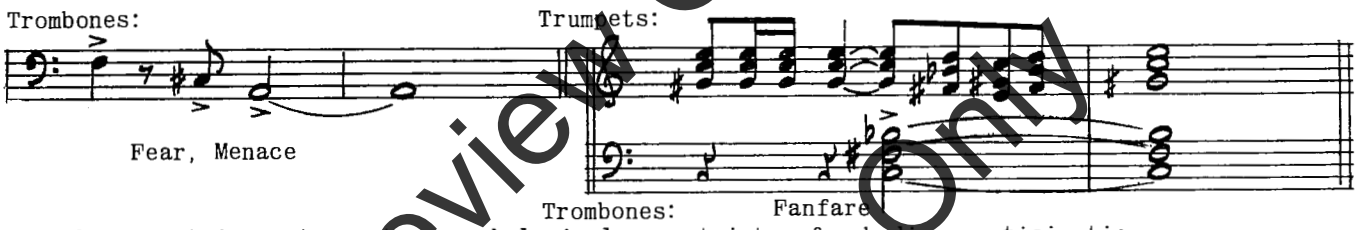


All others, in the normal course of harmony, are "chromatic" in derivation. They result from the "chromatic" altering of a Major or Minor chord. Example:



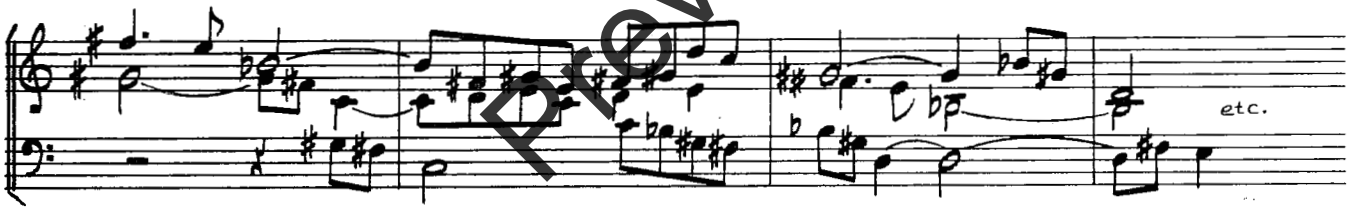
(See CHROMATIC HARMONY, Volume II, Chapter 6)

However, the Augmented triad and Whole Tone Chords receive some "psychological" use, as:



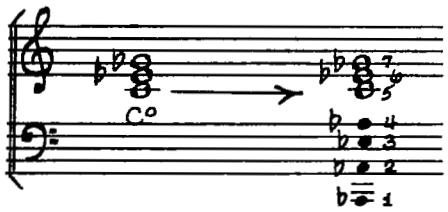
The uncertain root creates psychological uncertainty, foreboding, anticipation.

The Whole Tone Scale, with the whole tone harmonies from it, can be used for brief passages of composition. (See the "Impressionists" - Debussy, Ravel, etc.) Here is a short passage of three part writing using the notes of the Whole Tone Scale of C:



3. The **Diminished Triad**

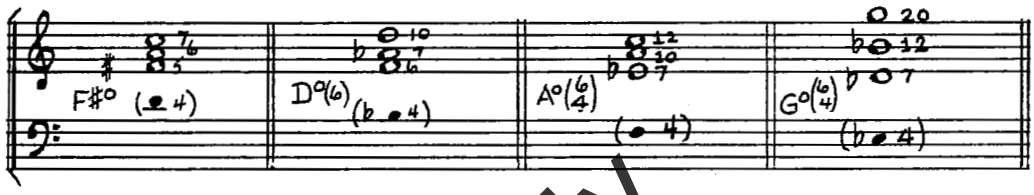
When the structure of the basic triads was noted at the beginning of this chapter, the term APPARENT ROOT was used in connection with the Diminished triad. This Apparent Root is so called because it is actually not the root at all. It is, in fact, the *5th partial*. The true root, or "acoustical root", of a Diminished triad (represented by the 4th partial) is a *Major 3rd below the Apparent Root*. Note the partial numbers, and **Hear!**



Acoustical Root (represented by 4th partial)

The diminished triad does NOT contain any "distortion". Its characteristic "light" and uncertain quality results from the fact that it is a *chord without its root*. It is, in fact, the upper three notes of what is called a "Dominant 7th" chord. Observe the partial numbers and acoustical roots of the following representative diminished triads:

Acoustical Roots:



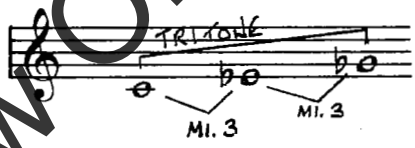
Nevertheless, the terms *Root Position, 1st Inversion* and *2nd Inversion* ARE used with respect to the *Apparent Root*. Example:

(Root Position) (1st Inversion) (2nd Inversion)

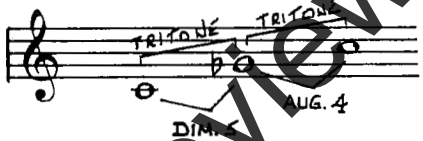
Acoustical root of all is A♭!

4. The **Diminished 7th Chord**

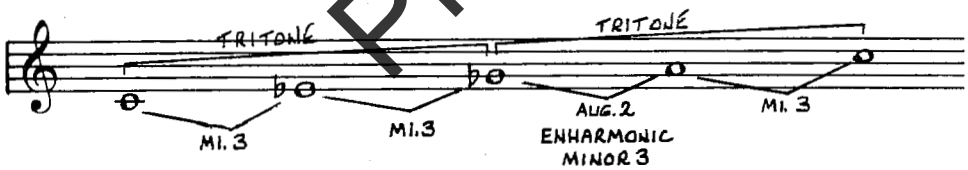
A diminished triad equally splits the tritone into Minor 3rds:



A tritone equally splits the octave:



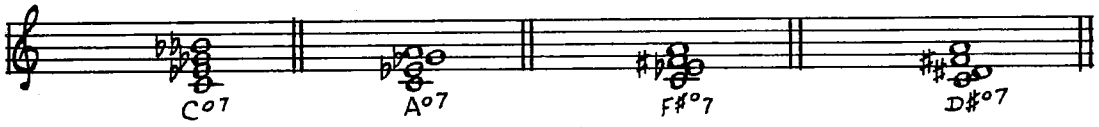
By equally dividing the remaining tritone, a four-way equal division of the octave, in Minor 3rds, results:



The *chord* which this four-way equal division of the octave produces is called a **Diminished 7th** chord. Like all "symmetrical" structures, a Diminished 7th chord is named according to its NOTATION. In *root* position its formation is:

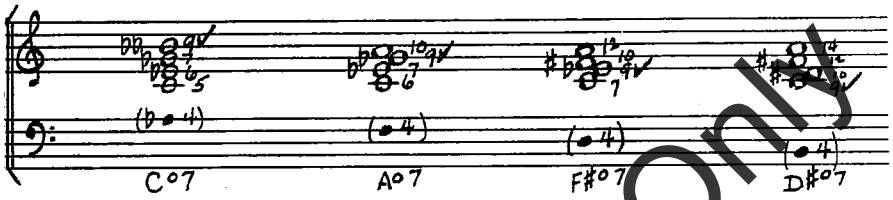
Diminished 7th
Diminished 5th
Minor 3rd
Root

It is the actual Diminished 7th Interval (or its inversion, the Augmented 2nd) which gives the proper name for the Diminished 7th Chord. For instance, the following four chords are "enharmonic equivalents", all of which will sound the same on the piano, but each has a different name because of its notation:



(1st Inversion) (2nd Inversion) (3rd Inversion!)

The partial numbers and acoustical root of a Diminished 7th chord are also based on the NOTATION. The Diminished 7th note itself is to be regarded as an *Altered* (flatted) 9th partial, marked: 9✓, 18✓, etc. Theoretically, any Diminished 7th chord has four possible acoustical roots. The choice depends only on the notation. The partial numbers and acoustical roots for the same four chords are, therefore:



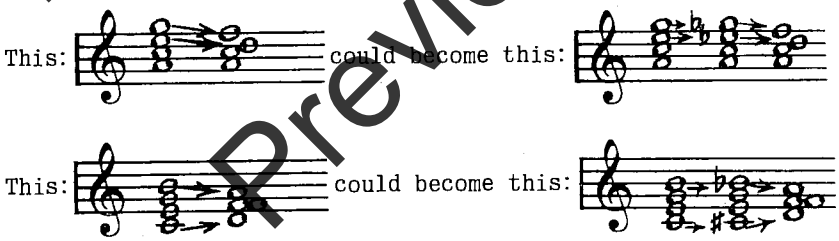
Note that the acoustical roots form another Diminished 7th chord. The simultaneous sounding of both is interesting.

There are numerous ways to notate Diminished 7th chords but, since they are four-way equal divisions of the octave, there are really only three (12÷4=3).

There is only one Diminished 7th chord found in the standard scales. It is on the 7th degree (leading tone) of Harmonic Minor:

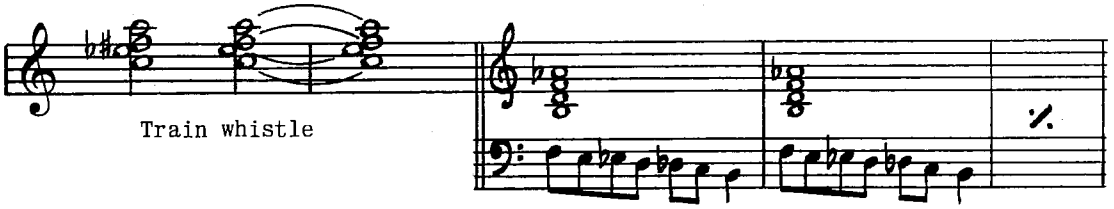
C Harmonic Minor: 

All others, in the normal course of harmony, are "chromatic" in derivation. That is, they result from the "chromatic" altering of a Major or Minor chord. Example:



(See CHROMATIC HARMONY, Volume II, Chapter 6.)

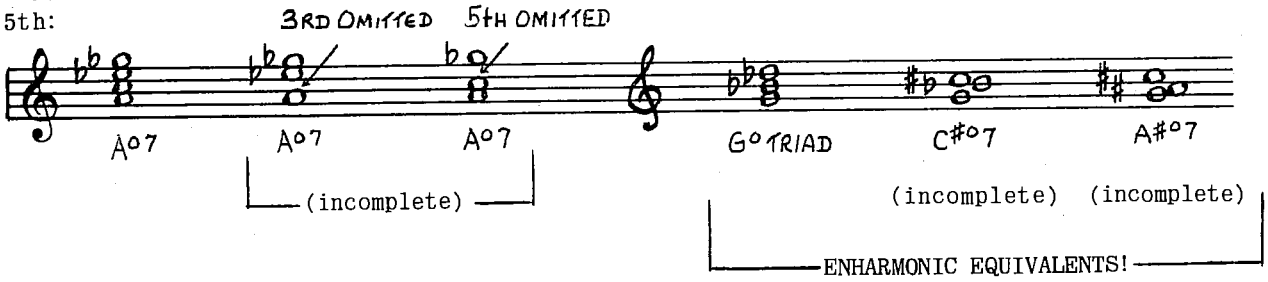
But it does receive some limited "psychological" use, as:



Background for mob scene in silent movie.

An uncertain root creates psychological feelings of distance, confusion, etc.

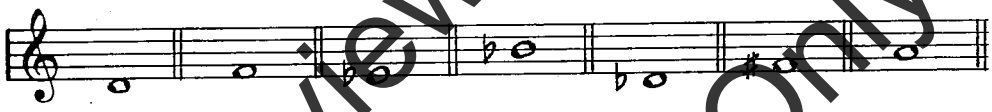
Finally, a three note "incomplete" Diminished 7th chord is available. Omit either the 3rd or the 5th:



ASSIGNMENT 13 (Augmented & Diminished Chords)

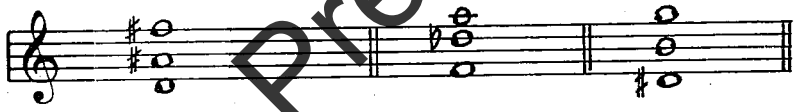
1. Give the partial number for each note of the following Augmented triads. (Remember: the Aug. 5th is 3✓, 6✓, 12✓, etc.)

2. Write six-note Whole Tone Scales starting on each of the following notes. (Use Minor 7th notation for 6th note in each case.)



3. Write six-note Whole Tone Chords, as example, on each of the following notes:

4. Add one or two satisfactory notes "inside" each of the following Augmented triads, to create four or five-note "whole tone derivative" chords.



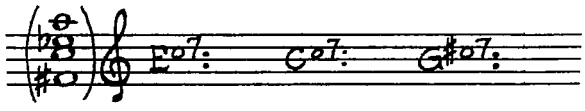
5. Using the Whole Tone Scale starting on E♭, write a short passage for piano, or for three instruments of your own choice in a mildly contrapuntal style, (i.e., give each part some individuality.)

6. Following are diminished triads. Give the partial number for each note. (Remember: the Apparent Root of a diminished triad is really partial "5".)

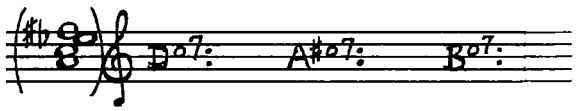
7. What note is the Acoustical Root of an E^0? B^0? F^0? $A\sharp^0$? $C\sharp^0$? A^0?

8. Write four note Diminished 7th chords as follows. (Example using $F\sharp^{o7}$ given in each case.)

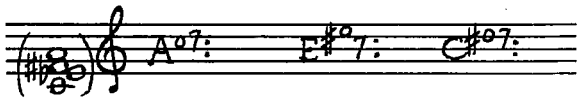
Open Root Position



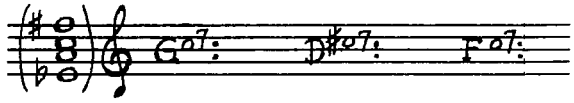
Close 1st Inversion



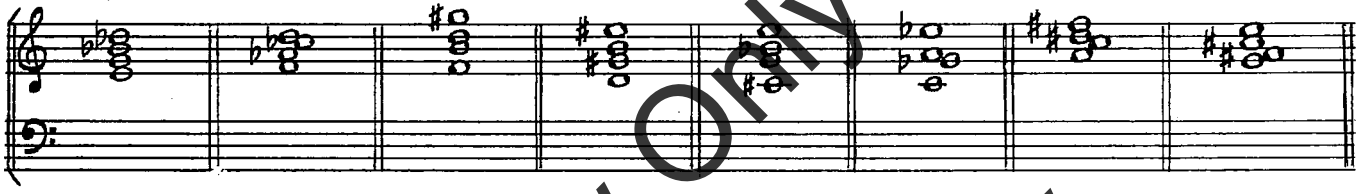
Close 2nd Inversion



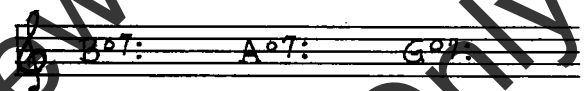
Open 3rd Inversion



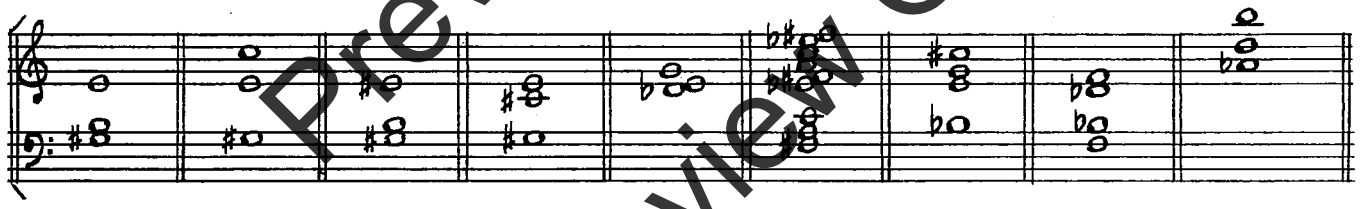
9. Name the following Diminished 7th chords, and give the partial number for each note. (Remember: the Diminished 7th note itself is 9✓, 18✓, etc.) Also, write in the Acoustical Root (Partial 4 or 2).



10. Write three note "incomplete" Diminished 7th chords as follows. Omit either 3rd or 5th. Choice of voicing and position optional:



11. Name each of the following chords, and give the partial number of each note:



THE TRIADS ON THE SCALE DEGREES

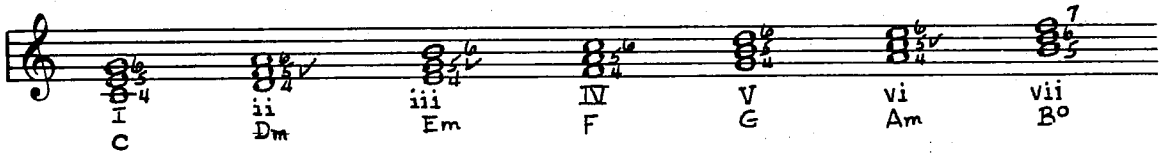
(For now, only the Major (Ionian) scale, and the three scales of the Minor Tonality will be considered.)

Proposition:

Each note of the scale can function as a *root*, and have a chord built on it. In the traditional system, the chord is constructed from diatonic notes of the scale being used, as close as possible to the overtone series of the root being used.

A. **Major** (Ionian)

C Major:



The chords indicated above with large Roman numerals (I, IV, V) are the **Primary Chords**. These chords are built on the Tonal notes which are the Tonic, Subdominant and Dominant. They are the most important chords in the scale and any diatonic melody can be, and often is, harmonized with only the Primary chords.

The **Secondary Chords** are indicated with small Roman numerals (ii, iii, vi, vii). They are built on the Modal notes.

Chords are referred to by their figure name as, for instance, the "I Chord", the "ii Chord", etc.

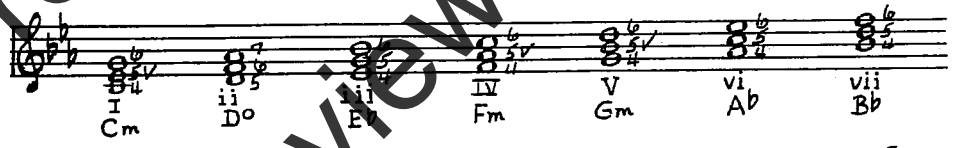
The disposition of chord types in MAJOR is as follows:

The Primary chords - I, IV, V - are MAJOR.
The ii, iii, and vi chords are MINOR.
The vii chord is DIMINISHED. (Its Acoustical Root is the Dominant)

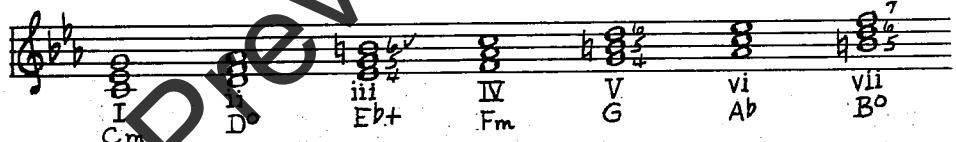
B. **Minor** { Aeolian ("Natural Minor") / Harmonic Minor / Melodic Minor } (the "artificial" modes)

In Minor, as in Major, the Primary Chords are I, IV, and V. The Secondary Chords are ii, iii, vi, and vii. Notice that the chords in pure Aeolian are the same as the chords of the Related Major, in a different order.

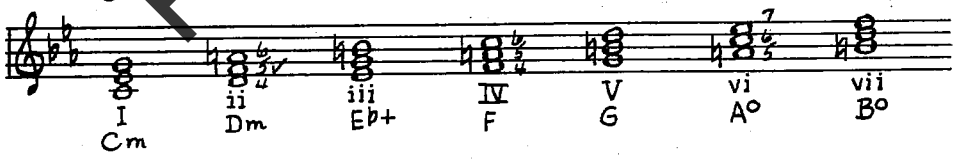
C Aeolian ("Natural Minor"):



C Harmonic Minor:



C Melodic Minor (ascending):

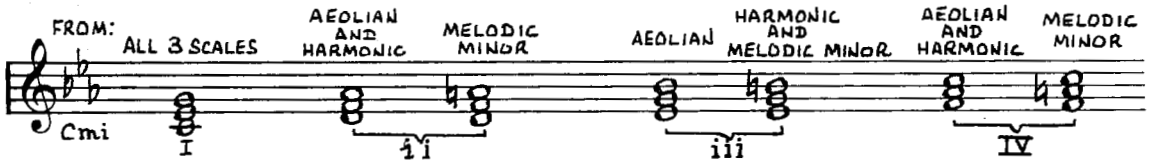


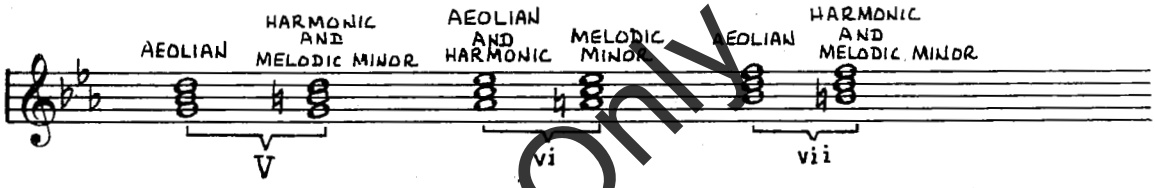
It is seldom, in actual practice, that one form of the Minor scales is used exclusively. Rather, each is drawn from, according to the demands of Musica Ficta in the voice lines. (For instance, it is quite possible for the IV chord in C minor to be Fmi at one point in a passage and, because of a need for the A♮, to be Fma at another!)

Therefore, it is better and, in the long run, less complicated, to understand Minor from a combined or *composite* point of view, incorporating all of the possibilities under one heading.

There are two forms of the 6th degree (the natural submediant and the Dorian 6th) and two forms of the 7th degree (the subtonic and the leading-tone). Consequently, when all of the chords of the Minor tonality are combined under one heading, there will be *two forms of each chord that contain either the 6th or 7th degree:*

The COMPOSITE MINOR: (C Minor)





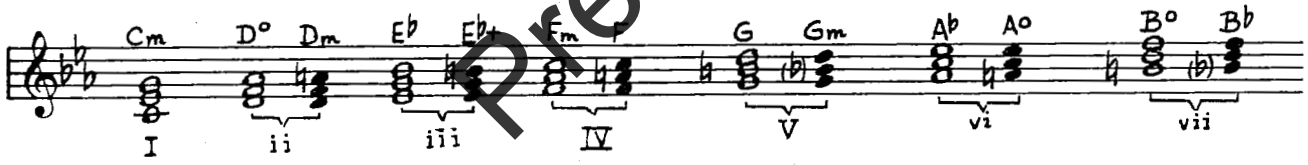
TOTAL: 13 TRIADS

In practice, not all of these chords are equally used. One form is used more often than the other in each case. The more frequently used chord on each degree will be called the **Regular** form and the other will be called the **Irregular** form.

In every case, *except* V and vii, the UNALTERED form is Regular. The Musica Ficta form is Regular on V and vii. (Both V and vii normally move to I and writers have preferred the form which contains the activity and "drive" of the Musica Ficta leading-tone.)

Here, then, is the Composite Minor with the REGULAR forms in *white notes,* the IRREGULAR forms in **black notes:**

C Composite Minor:



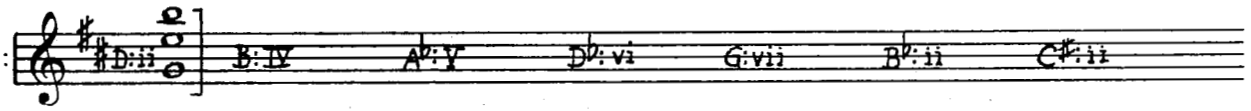
Note: The terms REGULAR and IRREGULAR do not mean "good" or "bad". In fact, they don't even mean "preferable" or "less preferable". However, the REGULAR receives more frequent use.

ASSIGNMENT 14 (The Triads on the scale degrees)

1. Write the triads on each degree of all major scales. "Figure" each (I, ii, etc.) and indicate its type (C, Dmi, etc.).

2. The ii chord in C is "Dmi". What chord is: ii in B♭, iii in F, IV in D, V in G♭, vi in A♭, vii in B? (Create and answer a page or so of questions of this type.)

3. Write the following chords in OPEN 1ST INVERSION, with correct key signatures.

Example: 

(Create and answer more questions of this type.)

4. The 5th of I is the Dominant. What scale degree is the 3rd of ii, 5th of IV, 3rd of vi, 5th of ii, 3rd of iii, 5th of vi, 3rd of vii, 5th of V, 3rd of IV, 5th of iii, 3rd of V, 5th of vii?

5. The 3rd of I is a "Modal" note. The 5th of I is a "Tonal" note. What is the 3rd of ii, 3rd of vi, 5th of vi, 3rd of vii, 5th of V, 3rd of IV, 5th of iii, 3rd of V, 5th of vii?

6. Write the 13 triads of the "Composite Minor" in all minor keys. "Figure" each (I, ii, etc.) and indicate its type (Cmi, D^0, etc.). Mark the Regular form in each case.

7. The Regular ii in C minor is "D^0". What chord is the Regular: ii in Fmi, iii in Ami, IV in Gmi, V in B♭mi, vi in Emi, ii in E♭mi? (Create and answer a page or so of questions of this type.)

8. The Irregular ii in C minor is "Dmi". What chord is the Irregular: ii in Gmi, iii in Cmi, IV in Ami, V in E♭mi, vi in F♯mi, vii in Bmi? (Create and answer more questions of this type.)

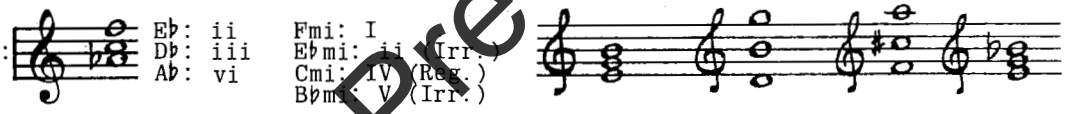
9. Write the following chords in CLOSE 2ND INVERSION, with correct key signatures and accidentals as necessary.

Regular ii in Bmi: Regular iii in Gmi: Irregular IV in Cmi:

Regular V in Dmi: Irregular vi in Fmi: Irregular vii in Emi:

(Create and answer more questions of this type.)

10. Name the following triads and give every major and minor key in which it appears. In minor, indicate whether the chord is Regular or Irregular.

Example: 

11. **The ear**: The quality of any chord is dependent, to a great degree, on the position it occupies in the key. For instance, a C chord in the established key of "C" has an entirely different quality than the same C chord has in the established key of, say, "F".

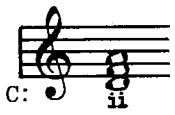
After a key has been established by playing the scale at the piano, cultivate the ability to recognize any diatonic chord by its "degree name" (ii chord, iii chord, etc.). Note for instance, that a ii chord in "C" (Dmi) has the same quality as a ii chord in any other established key. It is the ability to recognize a chord in relation to its context (i.e., "relative pitch") which is important. "Absolute" pitch recognition is not, by any means, essential.

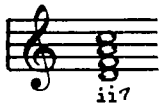
THE FOUR NOTE CHORDS ON THE SCALE DEGREES

(The addition of any NEW note or notes to a basic triad will create, in traditional harmony, a **Dissonant** or "unstable" chord. Dissonant chords require "resolution", according to certain principles which will be fully examined throughout the study of harmony. For now, only the vertical structure of the extended chords will be considered.)

Principle:

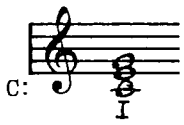
The fourth note added to a basic triad will be the interval of a **Minor 7th** (7th partial) from the root, provided this note is available in the scale being used.

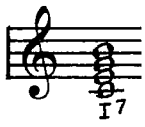
Example: 

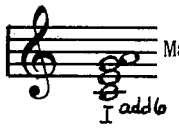
becomes: 

Minor 7th above D, and available in C scale.

When the Minor 7th above the root is NOT available in the scale being used, use what is termed a **7th Harmonic Substitute**. This will be the note ½ tone *above* the unavailable Minor 7th (the Major 7th) or, in certain situations, the note ½ tone *below* the unavailable Minor 7th (the Major 6th, which is discussed below).

Example: 

becomes, since Minor 7th is not available in scale: 

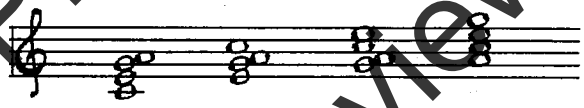
Major 7th 

Major 6th

Both the Major 7th and "added 6th" are regarded as Altered 7th partials (7♮), as:

Remarks on the "Added 6th"

The "added 6th" is rarely used in traditional harmony and "part writing" because of its ambiguity. To illustrate:



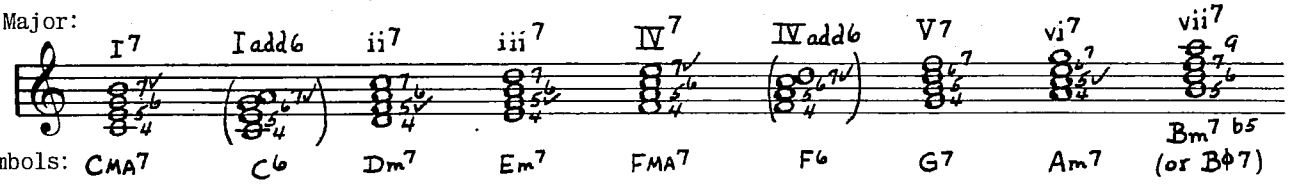
or: C Major with added 6th?
A Minor with added Minor 7th?

It has a sort of "Saturday Night Jobbing Date" sound and is generally undesirable in a traditional context. (For instance, try it - in private! - on the last chord of the National Anthem.)

Its use is pretty much confined to those areas of orchestration which use Sectional harmony (see text on "Writing Techniques", Chapter 4) where a triad could be too thin and a Major 7th chord too tense. The "added 6th" will NOT be used in the early stages of this study, but it WILL be listed in this catalogue of scale chords, with brackets to indicate its specialized use.

The four note chords on the scale degrees in MAJOR:

C Major:



Symbols: CMA7 C6 Dm7 Em7 FMA7 F6 G7 Am7 (or Bø7)

Observations:

1. The four note V chord (V^7) has no Altered partials. It is worth noting that, because of its "acoustical purity", the V chord is usually used as a "Dominant 7th" even in contexts where all other chords are triads!

2. The 7th on the vii chord is actually a *9th partial.* This is true with all Diminished chords.

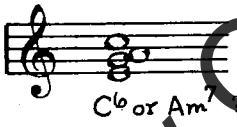
3. The Symbols:

"7" means MINOR 7TH. A MAJOR 7TH must be indicated as "ma^7".

"6" means MAJOR 6TH. (As earlier noted, "6" in the Figured Bass system means 1st Inversion!)

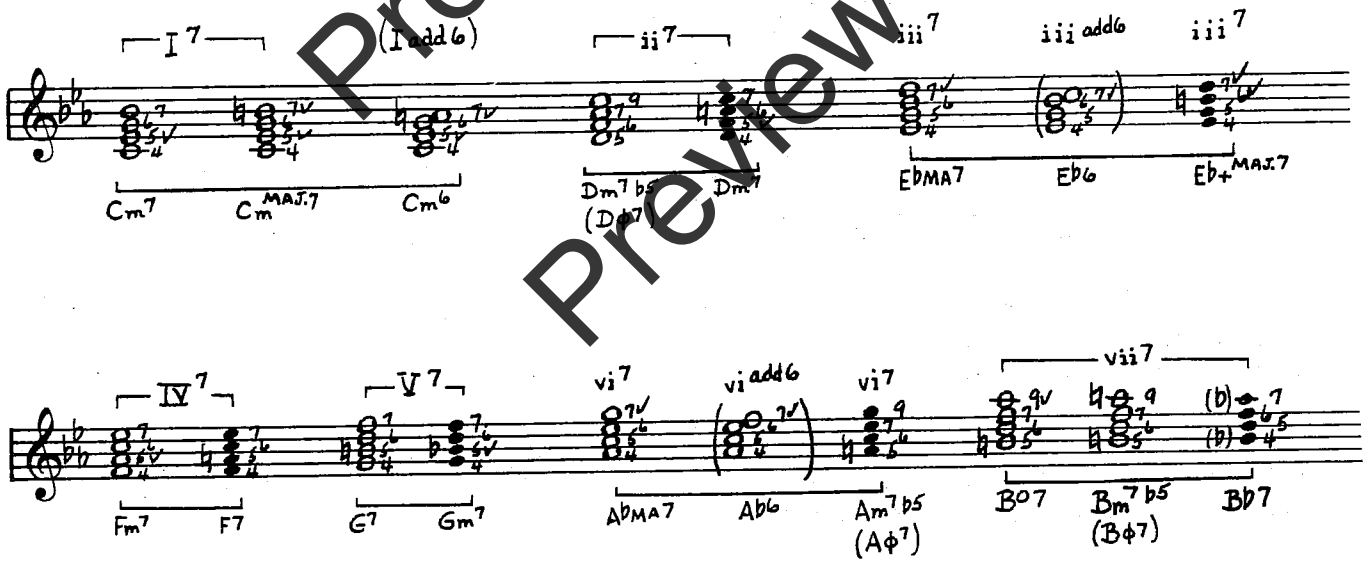
A Diminished triad with a Minor 7th added to it is usually called a "$Mi^{7\flat5}$" chord, but it is occasionally called a "Half-diminished 7th", with the symbol: ϕ^7.

In analyzing and symbolizing chords, confusion can exist between a Minor 7th chord and a Major chord with "added 6th", as:



The context and style will usually indicate how it is being used: in a traditional context the Minor 7th analysis is more likely to be correct.

The four note chords of COMPOSITE MINOR (Irregular forms in black notes):



Observations:

1. The four note tonic chord in Minor poses some problems, and its use will be discussed in detail in the chapter on the "Minor Tonality" (Volume I, chapter 8). In the meantime, these points should be noted:
   a. Any chord which contains a Minor 7th is unstable, and tends to "push ahead" to a new harmony. (Because of its instability the Minor 7th is, in fact, the most influential note in chord progression.) Consequently, the Minor 7th is *not normally used* as a harmonic addition to I in Minor, because it destroys the feeling of rest and conclusiveness that is usually desired in the tonic, "home base", chord.

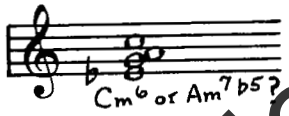
   b. The Minor I chord with a Major 7th has considerably more Tension than most four note chords. It has "sharp dissonance" and "50% distortion" (two Altered partials) and doesn't readily fit into all contexts.

   c. The use of the "added 6th" on I in Minor produces the ambiguity which is characteristic of "added 6th chords".

2. The Irregular (Augmented) form of iii in Minor uses a Major 7th only. The Minor 7th is not available in the scale, and the "added 6th" is impractical with the Augmented 5th.

3. The Regular vii in Minor is a Diminished chord. The normal addition to it is the Minor submediant, from Harmonic Minor, which produces a Diminished 7th chord. This is, in fact, the *only* appearance of a Diminished 7th chord in the standard scales. The diminished triad may also be extended with the use of the Major submediant (the Dorian 6th) from Melodic Ascending Minor. This is unusual.

4. In analyzing and symbolizing chords, confusion can exist between a "Mi$^{7\flat5}$" chord and a Minor chord with "added 6th", as:



The "Mi$^{7\flat5}$" (ϕ^7) analysis will be correct in most cases.

ASSIGNMENT 15 (The 4 Note Chords on the Scale Degrees)

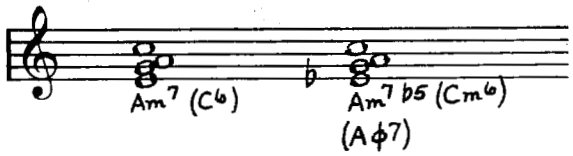
1. Write the four note chords on each degree of all Major and Composite Minor scales. (In minor, indicate the "Regular" and "Irregular" forms.) Figure each chord, name its type, and occasionally mark the partial numbers.

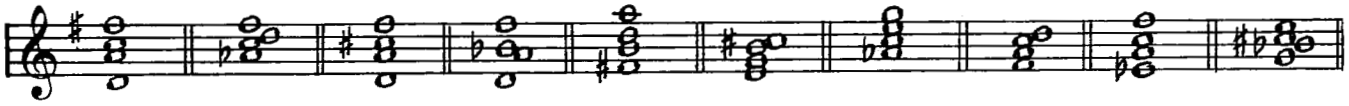
2. At a four note level, the I chord in C is "Cma^7" (C^6), the ii chord is "Dmi^7", etc. At a four note level, what chord is I in D, ii in E♭, iii in F, IV in G, V in A, vi in B, vii in A? Create and answer a page or so of questions of this type.

3. At a four note level, the "Regular" ii in C Minor is "Dmi$^{7\flat5}$". At a four note level, what chord is the "Regular" ii in Fmi, iii in Gmi, IV in Ami, V in B♭mi, vi in Cmi, vii in Dmi? Create and answer more questions like these.

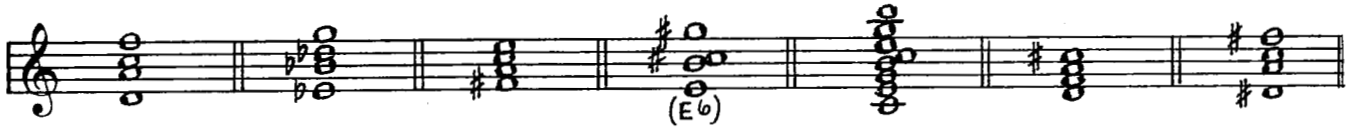
4. At a four note level, the "Irregular" ii in C Minor is "Dmi^7". At a four note level, what chord is the "Irregular" ii in Bmi, iii in Cmi, IV in Fmi, V in E♭mi, vi in F♯mi, vii in Gmi? (More of these.)

5. Provide correct chord symbols for each of the following. (They are in various positions.) In the case of "ambiguity", provide both symbols, as:





6. Give the partial number for each note of the following chords. (All are in Root Position,)



7. Become familiar with the type of four-note chord found on each degree of the Major and Minor scales. Locate where "Mi^7" chords are found, "Ma^7" chords, "added 6th" chords, "Mi$^{7\flat5}$" chords, etc. etc. Take any four-note chord (e.g., C^7, Cma^7, etc.) and note every major and minor key in which it occurs, with its degree name in each case. Cultivate the ability to *see* mentally the chords of any key. (Tonal vision)

8. **The ear**: Become familiar with the sound of the four-note chords.

THE "EXTENDED" CHORDS

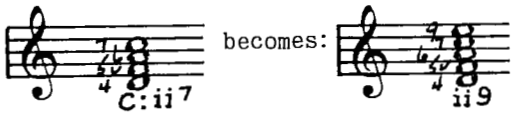
Seventh chords will be used fairly early in this study of harmony, but 9th, 11th, and 13th chords will not be encountered until we deal with "Melodic Inharmonics", Volume II, so that chords beyond the four note level are not of immediate concern.

However, in order to complete the "dictionary of chords" in this chapter, and to provide reference for later use, the more extended chords are listed here.

The 9th chords

Principle:

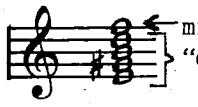
The fifth note added to a basic four-note structure will be the interval of a **Major 9th** (the 9th partial) from the root, provided this note is available in the scale being used. To illustrate:



Major 9th from D, available in C scale.

If the Major 9th ISN'T available in the scale (as,. for instance, on iii in major, Regular V in Minor, etc.) the following directions hold:

a. If the Major 9th is not available and the chord is a "dominant structure" (i.e., major triad, minor 7th) the MINOR 9TH is acceptable.

Example:  minor 9th "dominant 7th"

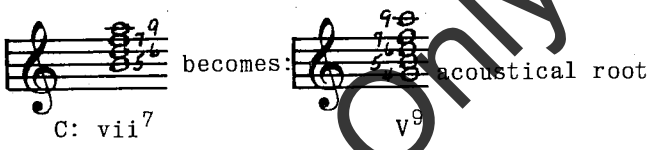
A minor: V (regular)

b. However, if the Major 9th isn't available in the scale and the chord is MINOR, it is often better to leave the chord at four part. That is, don't use the 9th at all since a minor chord with a minor 9th is rather too harsh a sonority for general use.

Example:  9th omitted, since Major 9th is not available in C scale Minor chord

C: iii

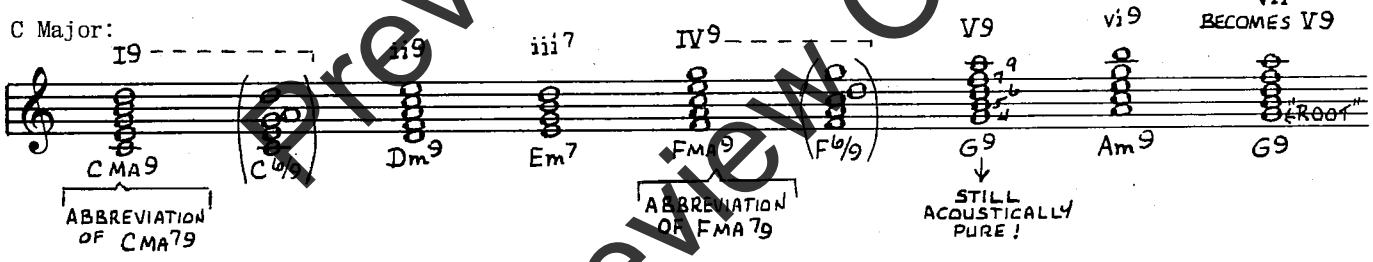
In the case of **Diminished** chords ("dim. 7th" and "Mi$^{7\flat5}$" chords) add the ACOUSTICAL ROOT for the fifth note. The diminished quality is abandoned when the harmony exceeds the four note level. To illustrate:



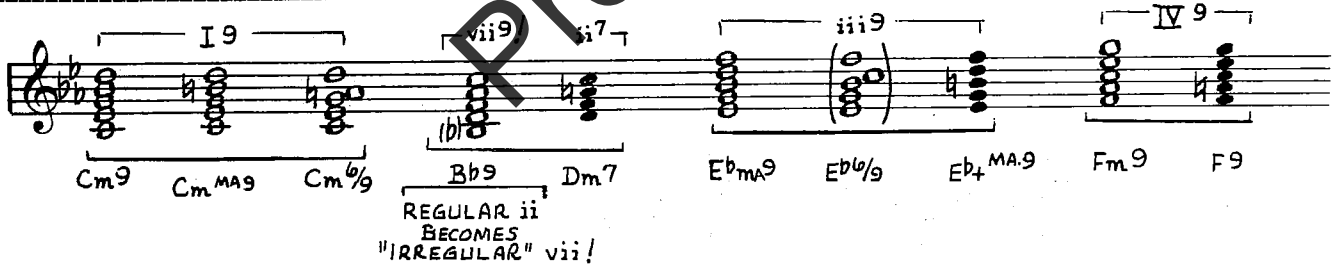
C: vii^7 V^9

The Symbols: 9 means MAJOR 9TH
$\flat$9 means MINOR 9TH
If 7 not mentioned in symbol, a MINOR 7TH is assumed.

The 9th chords in MAJOR



The 9th chords in COMPOSITE MINOR



THE SEVEN NOTE CHORDS ("11th" and "13th" chords)

When the harmony exceeds a five note level, the *vertical sonority* of the chord becomes more important than its relationship to the scale. Consequently, it is occasionally necessary to use chromatically altered notes in order to minimize tension and to gain vertical fusion. The following points are pertinent:

a. A MAJOR 3RD and a PERFECT 11TH are harmonically incompatible. Therefore, if the chord has a MAJOR 3RD, use an AUGMENTED 11TH only, even if this requires an "altered" note.

b. A PERFECT 5TH and a MINOR 13TH are harmonically incompatible. Therefore, if the chord has a PERFECT 5TH, use a MAJOR 13TH only, even if this requires an "altered" note.

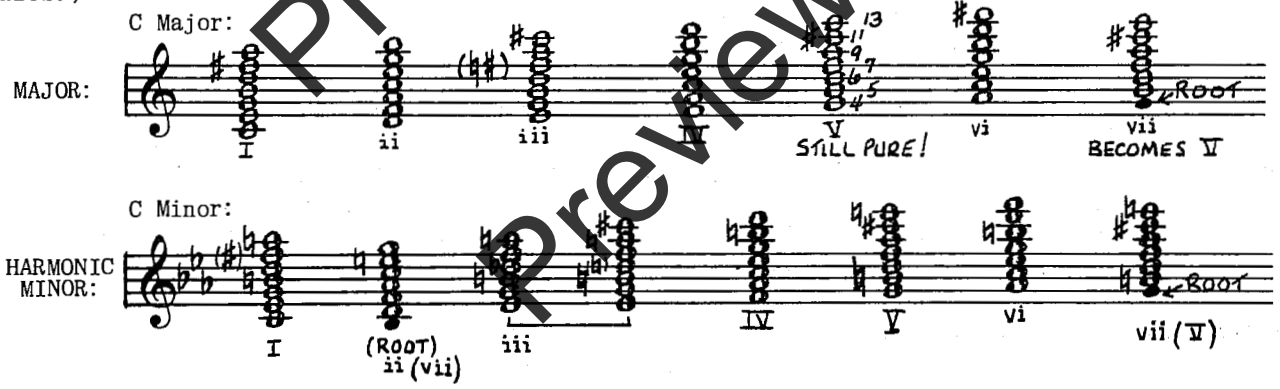
SO:

MAJOR TRIAD	---	7th and 9th from scale	--- Augmented 11th	--- Major 13th
MINOR TRIAD	---	7th and 9th from scale (examine iii in major!)	--- 11th from scale*	--- Major 13th

*Exception: When a Major 7th is used on the I chord in Minor, it may be preferable to use an Augmented 11th, to avoid having the "tonal tritone" in the tonic chord.

DIMINISHED TRIAD	---	Add the acoustical root, and proceed from the resulting Major chord.
AUGMENTED TRIAD	---	Generally extended to a six-note Whole Tone Chord. (See earlier notes on the Whole Tone Scales and Chords.) The Augmented iii chord in minor can be extended as: 7 and 9 from scale, Augmented 11th, *Augmented 13th.*

(This information is primarily for later reference (Volume II), and will not be used immediately. Therefore it seems unnecessary to examine the full Composite Minor, and the following examples are confined to Major (Ionian) and the Harmonic Minor only. But the same principles apply to all scales.)



ASSIGNMENT 16 (The "Extended" Chords)

1. Learn the *principles* which guide the construction of the "extended" chords.

2. Write the 9th chords on each degree of a few Major and Composite Minor scales. Figure each chord, name its type, and occasionally mark the partial numbers.

3. Write the seven note chords on each degree of a few major and minor scales.

4. Review all of the material in the first three chapters.

Chapter 4

Preparatory Considerations
to the
STUDY OF HARMONY

I. A CATALOGUE OF THE HARMONICALLY DISSONANT INTERVALS
II. WRITING TECHNIQUES.
III. THE GENERAL PRINCIPLES OF VOICE LEADING
IV. HARMONIC PULSE

I. A CATALOGUE OF THE HARMONICALLY DISSONANT INTERVALS

(The term **dissonant** is used here in the sense of instability, and not necessarily in the sense of tension.)

Traditionally, certain harmony intervals are regarded as **Dissonant**, and require **Resolution**. These intervals are:

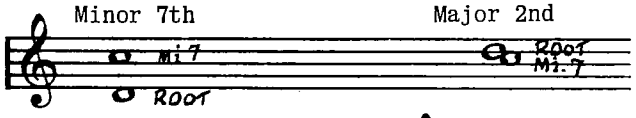
A. Minor 7th - Major 2nd
B. Major 7th - Minor 2nd
C. Major 9th - Minor 9th
D. The Perfect 4th (in "duet" and in $\frac{6}{4}$ chords)
E. All Augmented and all Diminished Intervals

These are "two part" resolutions. When three or more parts are combined into full chord progression there is often modification of the following principles. Nevertheless, *any chord that contains one or more of these Dissonant Intervals will be a* Dissonant Chord, *and its resolution will be guided by consideration for the Dissonant Interval or Intervals in it!*

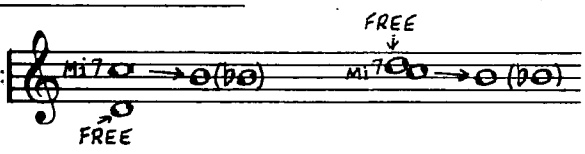
The following catalogue indicates:

a. The Dissonant Interval,
b. The type of chord in which it is MOST LIKELY to occur,
c. Its traditional resolution or resolutions.

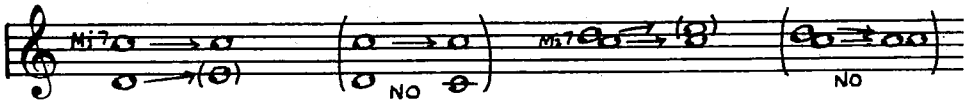
A. Minor 7th and Major 2nd



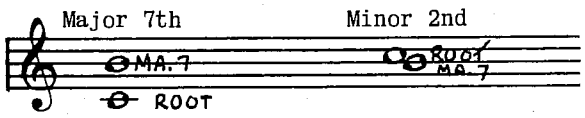
Usual resolution: Minor 7th falls one step, Root is free:



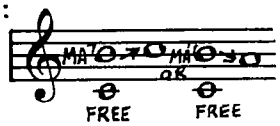
Also: The Minor 7th may remain "passive" in which case the Root usually, but not necessarily, rises one step. (It should not fall one step):



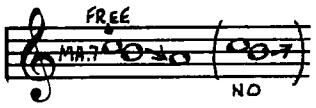
B. Major 7th and Minor 2nd



Resolution: When the Major 7th is *above* the root, it may rise *or* fall one step, with a "free" root, as:



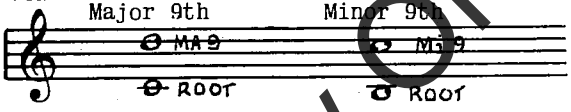
but when the Major 7th is *below* the root (forming a Minor 2nd) the Major 7th *falls* only, as:



(The passive resolution of a Major 7th is possible only under circumstances which will be met at a later point.)

C. Major 9th and Minor 9th

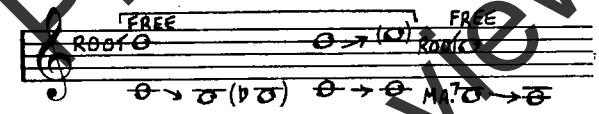
Two possibilities: 1.



In this case, the 9th normally falls one step, the Root is free:

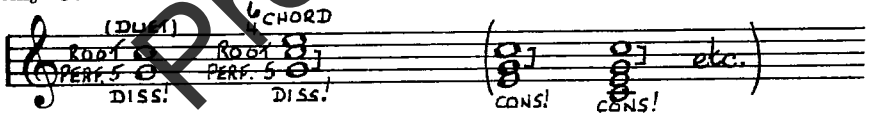
2.

In this case, the Interval is resolved in the same way as the Major or Minor 2nd:

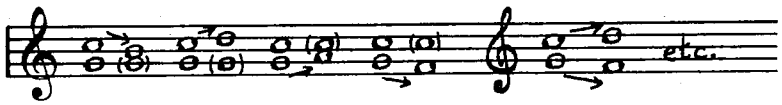


D. Perfect 4th -- The Perfect 4th is dissonant only in two parts (duet) or in a 2nd inversion ($\frac{6}{4}$) chord. Any other Perfect 4th is consonant and needs no consideration.

Example:

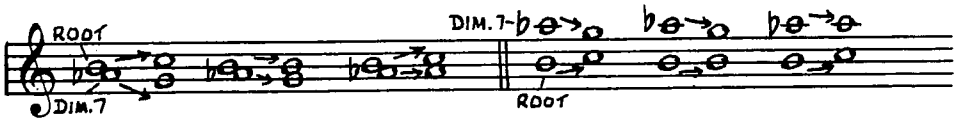


Resolution: Stepwise motion of either the bottom or top note, or stepwise motion of both notes in "contrary motion":

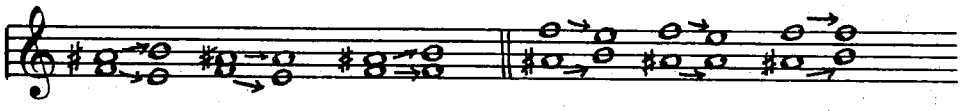


E. Augmented and Diminished Intervals -- In general, Augmented intervals "expand" (⇉) and diminished intervals "contract" (⇇).

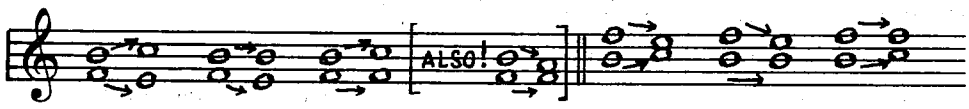
Augmented 2nd and Diminished 7th. (Diminished 7th chords)



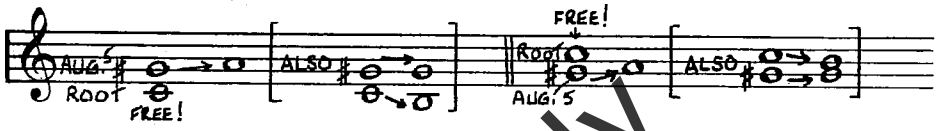
Augmented 3rd and Diminished 6th (Chromatic chords only)



Tritone: Augmented 4th and Diminished 5th (Diminished chords, Dominant 7th chords, etc.)



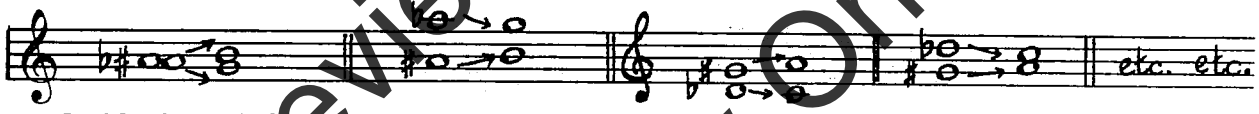
Augmented 5th and Diminished 4th (Augmented chords)



Augmented 6th and Diminished 3rd (Chromatic Augmented 6th chords)

DOUBLY AUGMENTED and DOUBLY DIMINISHED intervals, which are found in chromatic chords only, generally follow an obvious path of resolution.

Example:

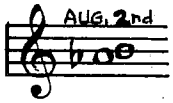


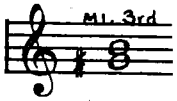
Doubly Augmented Unison | Doubly Diminished Octave | Doubly Augmented 4th | Doubly Diminished 5th

ASSIGNMENT 17 (The Harmonically Dissonant Intervals)

Become familiar, mentally and aurally, with the Harmonically Dissonant Intervals and their resolutions.

Test them at the piano, where you will find that it is often necessary to establish a context before the interval will "sound" the way it is written.

For instance, this: 

will sound, out of context, like this: 

Dissonant! Consonant!

So try to place the intervals in a context where they actually "sound" the way they are written!

II. WRITING TECHNIQUES

There are three main ways to combine voices or instruments into harmonic relationship:

A. Counterpoint
B. Sectional Writing
C. Part Writing

These methods overlap, and certain considerations are common to all. Nevertheless, each technique has characteristics and uses of its own:

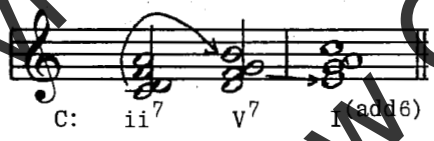
A. Counterpoint

Counterpoint is the combination of two or more melody lines. Concern is shown for the *melodic value* of each part, and each part has, theoretically, equal significance and individuality. Historically, counterpoint was the first form of "harmony" and still remains the most complex, from the point of view of both the writer and the listener. While most of the principles of harmony are derived directly or indirectly from it, counterpoint is a separate study and will not be undertaken in this text.

B. Sectional Writing

Sectional writing is widely used in modern arranging, particularly in areas where the orchestra is composed of separate "sections" (brass, reeds, etc.). The melody is harmonized in more or less consistent *close* or *open* voicing, with only a minimum concern for the melodic logic of any of the supporting parts. For instance, dissonant notes are not necessarily resolved in the part in which they occur, but, through a process called **transference**, may resolve in an entirely different part.

Example:



The end result of sectional harmonization is a sort of "thickened melody". The supporting parts add weight and density to the lead, but have no significant life of their own.

The harmonic progression will be largely pre-determined; that is, the chord progression will, in the main, be chosen before the actual harmonization is done.

Sectional writing is not "self-sufficient". Rather, it needs further accompaniment because:

1. The *bass* will not be present.
2. There will not likely be "rhythmic balance" in the completed work, since the "rhythm" of each part will be similar to the rhythm of the lead.

In most areas where sectional writing is used, the accompaniment is provided by a "rhythm section".

In the book, **Modern Arranging Technique**, a full investigation of sectional writing techniques will be made preparatory to the study of orchestration, but this text on theoretical harmony will NOT use sectional writing. (See example on following page.)

C. Part Writing

As the name implies, part writing concerns itself for the melodic logic and smooth flow of *every* part. Dissonances are normally resolved in the part in which they occur and the voicing will not be consistently *close* or *open*, but will continuously change according to the demands of the "voice leading". The end result is, or should be, a balanced sonority of individual elements, with the top line (soprano) usually being the main element.

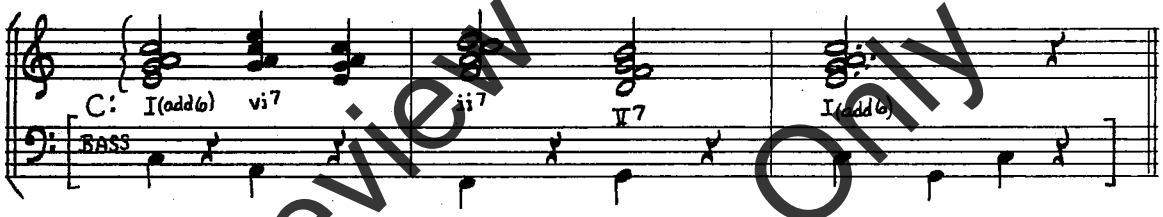
The harmonic progression may be pre-determined, but it is not as necessary for this to be the case as it is with sectional writing. Further, the nature of part writing often leads to "passing" and other subsidiary chords.

Part writing is "self-sufficient". The bottom part is always the *bass* and effort is made to achieve proper rhythmic balance from the overall result. Therefore part writing, although it may have some, doesn't need further accompaniment.

Part writing is used in small group scoring, choral harmonizations, string writing, symphonic scoring, etc. **The study of Harmony will be undertaken with the Part Writing style.**

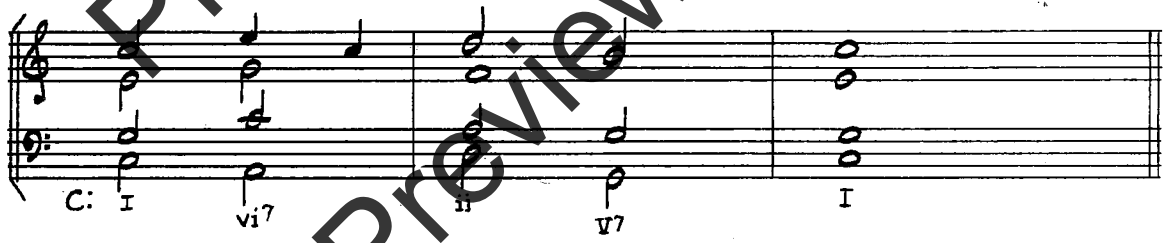
Examples: (each using the same "lead")

1. Sectional writing (four part)

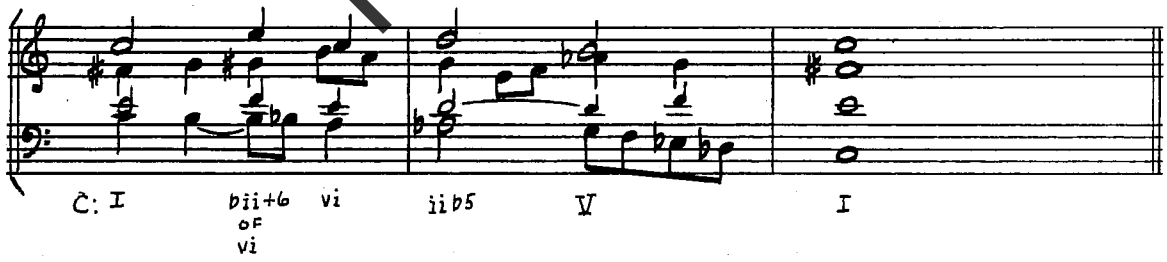


2. Part writing (four part)

Simple:



More elaborate:



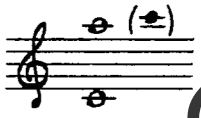
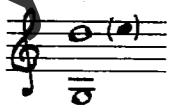
III. THE GENERAL PRINCIPLES OF VOICE LEADING

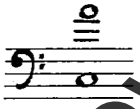
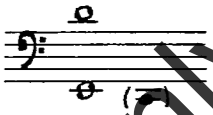
In the study of harmony each part is regarded as a *voice line* and the movement of the parts is termed **voice leading**. The principles which apply to the organization of the voice lines are called the "principles of voice leading". The following pages contain a number of these principles, some of which are applicable as soon as one chord is moved to another and others which will not have reference until later chapters of this and Volume II. The student is advised to:

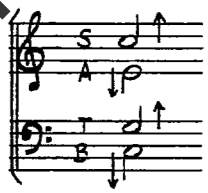
a. read through the principles to gain a general acquaintance with them,
b. refer to them as required throughout the study.

THE VOICES

Four voice lines will be used, termed SOPRANO (S), ALTO (A), TENOR (T), and BASS (B). All writing is done within some range limitation, and for the purposes of the study of harmony, the vocal ranges are as convenient as any. In later areas, some liberties may be taken, but for now the approximate ranges are:

In TREBLE clef: SOPRANO:  ALTO: 

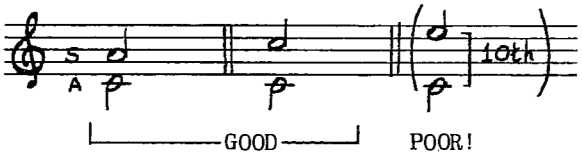
In BASS clef: TENOR:  BASS: 

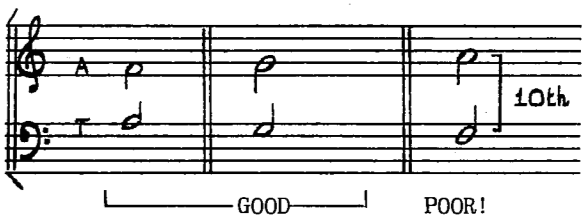
The combined treble and bass staffs will be used (the "great staff") and the "tails" of the shorter notes are written as indicated: 

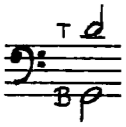
A. The Vertical Considerations

1. SPACING

In the interests of chordal balance and fusion, the parts should not be too far apart. Safe maximum distance between the voices are as follows:

No more than an octave between Soprano and Alto: 

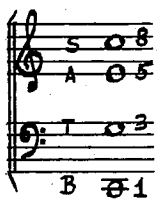
No more than an octave between Alto and Tenor: 

But the bass may be as much as a 12th (sometimes more!) from the Tenor: 

OK!

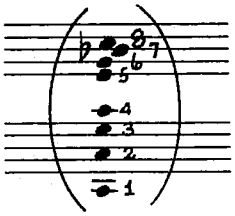
The standard for **vertical** considerations is the Harmonic Overtone Series which, of course, is *open* at the bottom and *close* at the top. For instance, in the following chord the bass and tenor are a 12th apart, while the alto and soprano are only a 6th apart. However, the actual HARMONIC DISTANCE between the alto and soprano is greater, because there are more partials missing!

Example:



2 partials missing!

only 1 partial missing!

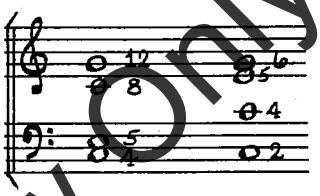


Brief violations of the spacing rules are permissible, if the violation is not heard vertically.

Example:

POOR! BUT: OK (not heard vertically)

The importance of the vertical construction of any chord is in direct ratio to its duration and stress. When a chord lasts long enough to be comprehended as a vertical sound, low partial numbers (i.e., most "clarity") will likely be preferable, as:



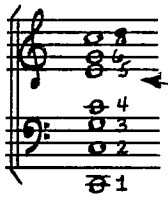
More Clarity!

There is usually a conflict between the interests of the vertical and the interests of the horizontal. *The horizontal considerations take precedence more often than not!* If every chord were built from only an ideal vertical point of view, the movement between them would be graceless and awkward. So the voicing of most chords can be chosen only with consideration for the voicing of the chord before it and the chord after it!

2. DOUBLING

When only triads are used in four part writing, it is obvious that one of the notes of the chord will have to be **doubled**, either at the unison, octave, double or triple octave.

The choice of the double will depend to a large degree on the voice leading in the context. Irregular doubles are often required in order to retain a smooth flow in the part lines, but from a strictly *vertical* point of view, certain doubles are less satisfactory. Again the Harmonic Overtone Series is the criterion. A glance at it will show that there are, in the first eight partials, four roots (1, 2, 4, 8), two 5ths (3, 6), and only one 3rd (5). So, in the following chord, only one 3rd is necessary:



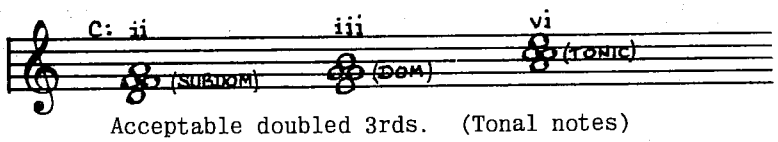
only one 3rd!

With only four parts, then, the root is always an acceptable double; the doubled Perfect 5th is acceptable, but a doubled 3rd is *not always satisfactory* because it may throw the chord out of vertical balance. However, when the 3rd is a **tonal note,** (tonic, subdominant, dominant) composers have regarded it as a preferred double, because of the strong "key emphasis" which results.

A provisional rule regarding doubled 3rds can read, therefore:

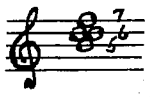
Doubled 3rds are *not ideal, except* **on the ii, iii, and vi chords, where the 3rds are Tonal notes.**

Example:



Acceptable doubled 3rds. (Tonal notes)

Diminished triads are constructed from partials 5, 6, and 7. In most cases, then, the 3rd of a diminished triad is the best double, as:



Each chord of the scale will be examined individually in the later chapters of this Volume, and further observations regarding doubling will be made.

3. OMISSIONS

Omitted root: The root will not be omitted when only triads are used.

Omitted 3rd: The 3rd of the chord determines the Major or Minor quality. Also, it provides "density" to what would otherwise, in a triad, be simply an open Perfect 5th. Consequently, the 3rd is seldom omitted.

Omitted 5th: The Perfect 5th does not contribute to the "character" of the chord. Further, it is always present by implication of the strong 3rd partial. Consequently, the omission of the Perfect 5th is often quite acceptable.

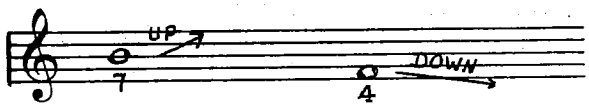
B. The Horizontal Considerations

1. THE SOPRANO

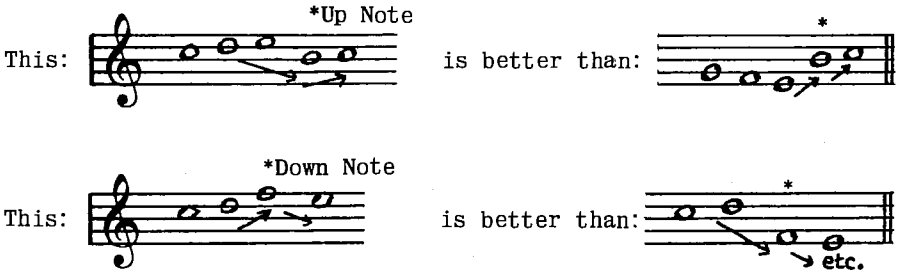
Fully developed melody requires resources, such as non-chordal notes, which are not available in the early stages of this study. However, it is quite possible and very desirable to produce a well formed, logical, and satisfying soprano line. Since it is the top voice, it has the most prominence. An awkward or insensitive soprano will immediately cancel out any musical value the passage might otherwise have. Here are a few clues to aid the writing of an acceptable soprano.

a. Develop sensitivity to the TENDENCIES of the scale notes. In major, the most obvious **tendency tones** are the notes of the Tonal Tritone (4 and 7), as:

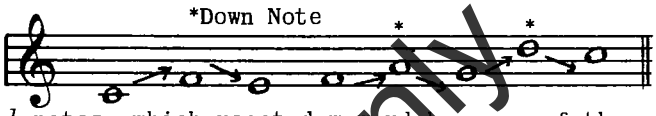
Key of C:



Any note can be comfortably approached by *step* but a *LEAP* to a tendency tone is usually best when the leap is in the opposite direction to the tendency of the note as:



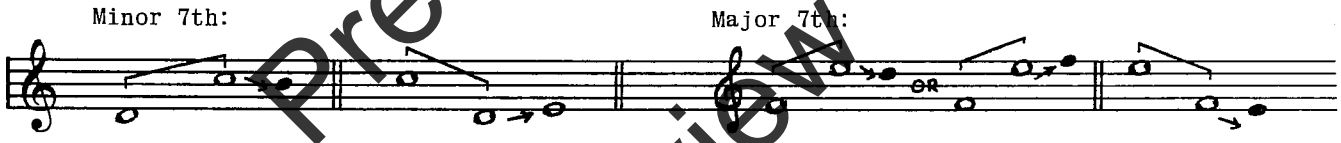
b. When changing direction, try to use a "turning point" note that helps the change of direction. An upper turning point should be either a *down* note or a *neutral* note, and a lower turning point should be an *up* note or a *neutral* note. To illustrate:



*Relatively *neutral* notes, which react downward because of the upward "leap" approach.

*Relatively *neutral* note, which reacts upward because of the downward "leap" approach.

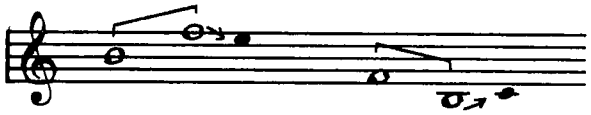
c. In the style being considered, certain intervals are "melodically" dissonant and require melodic "resolution". The dissonant leaps are the MAJOR 7TH, MINOR 7TH AND ALL AUGMENTED OR DIMINISHED INTERVALS. The resolutions are as follows:



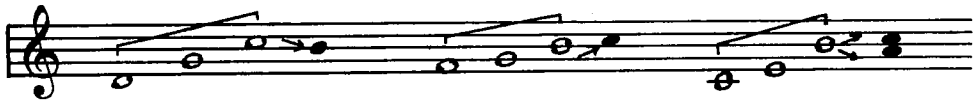
Augmented leaps resolve outside of themselves, usually by step, as:

Diminished leaps resolve inside of themselves, usually by step, as:

(Augmented leaps should be avoided in early work, but diminished leaps, correctly resolved, are acceptable.)



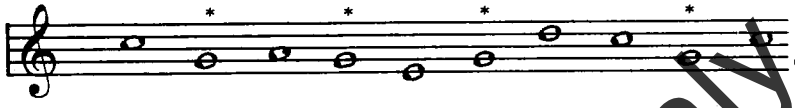
It is important to note that one note (and sometimes more than one note) *between* the notes of a dissonant leap may not "cover" the dissonance, and resolution will still be required.

Example: 

d. Try to have only <u>one</u> HIGH POINT in the melodic sentence, and let the high point be either a *down* note or a *neutral* note. (The leading-tone is the least effective high point, because of its upward tendency.)

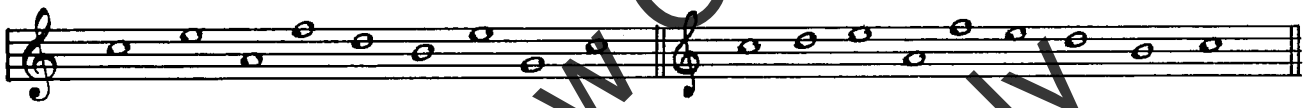
e. Repetition of the LOW POINT is not as obvious as a repeated high point, but it's better to have one only. Let it be either an *up* or a *neutral* note. (The subdominant is often the least effective low point, because of its downward tendency.)

f. Avoid repeating any one note too often, such as:



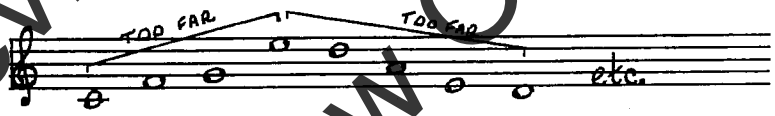
Too many G's. Monotony!

g. It is only rarely that angularity is desirable. Therefore, it is usually better to have more "steps" (conjunct motion) than "leaps" (disjunct motion). To illustrate:



Angular line (leaps) Smoother (more steps)

h. Strive for a controlled melodic "curve" and, in general, don't proceed more than an octave in the same direction, as:

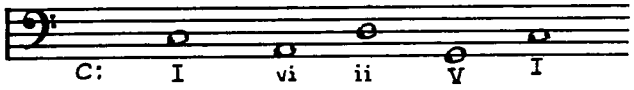


i. In even a short sentence, the soprano will likely end on the tonic (Perfect cadence).

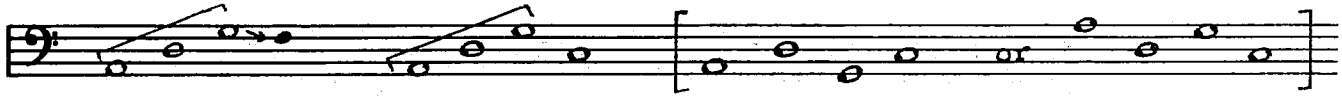
2. THE BASS

The bass line is second in importance only to the soprano - and a close second. It is an "exposed" part and requires melodic consideration. Most of the considerations which lead to a good soprano line are also applicable to the bass.

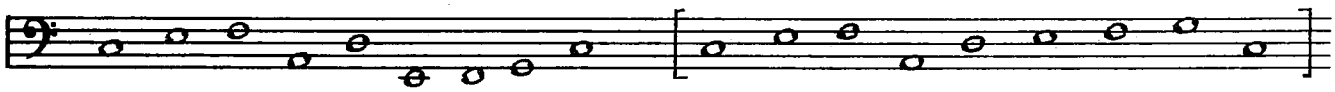
Because of harmonic requirements, and its importance in outlining the chord progression, the bass will leap more often than the soprano. For instance, when Root Positions are used, the bass will simply leap from root to root, as:



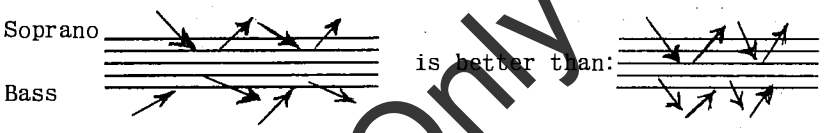
The leaps must be controlled and contained, however. For instance, two consecutive leaps of a 4th add up to a 7th and should be resolved as such. To illustrate:



The more active nature of the bass can lead to a "sprawling" line. Keep it in an established range, as:



If a choice exists, "contrary" motion is better between the bass and soprano, as:



(This is a general point only. Consistent contrary motion between the bass and soprano is impossible, and not always desirable.)

3. THE INNER PARTS

The alto and tenor are not heard as readily or as clearly as the "exposed" soprano and bass. Therefore their melodic value is not nearly as important. (Voice leading flaws are not desirable in any part, of course, but a flaw will be considerably less obvious in an inner part.)

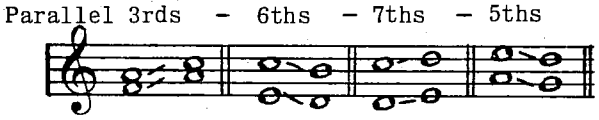
Avoid all unnecessary leaps in the inner parts. Where necessary, the leap of a 6th can be regarded as a safe maximum. Voice leading in the inner parts should always be as smooth as possible.

C. Considerations Concerning The Relationship Between The Voices

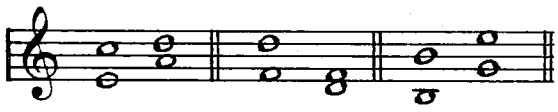
1. TYPES OF MOTION

There are four ways for the lines to move in combination with one another:

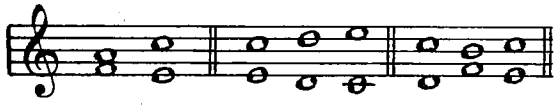
a. Parallel motion (same direction at a consistent interval relationship)



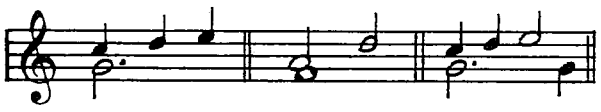
b. Similar motion (same direction, but not parallel)



c. Contrary motion (opposite directions)



d. Oblique motion (movement of voice or voices against a stationary part)



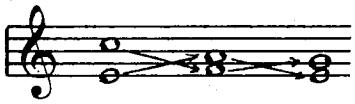
Independence of line increases as follows:

PARALLEL → SIMILAR → CONTRARY → OBLIQUE

(least individuality of parts) → (most individuality of parts)

2. CROSSING PARTS

Illustration:



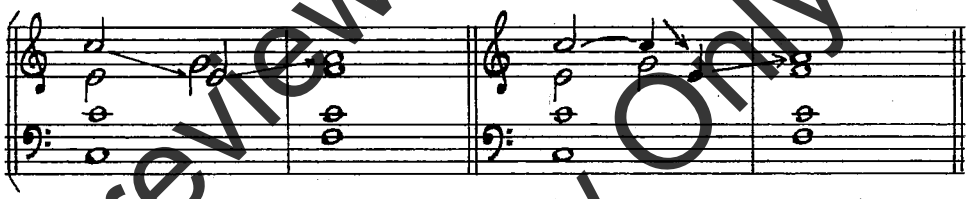
Objections:

a. Possible confusion of voice lines

b. Poor *balance* which could result from the placing of a "heavier" voice above a "lighter" one.

The crossing of parts is not usual and should be called upon only exceptionally. Crossing the the inner voices (alto and tenor) is the least dangerous, since this will not affect the clarity of the outside lines.

It should be noted that conflicting attacks and oblique motion will minimize confusion, as:



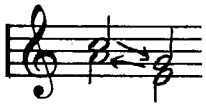
Main melody line obscured BUT: OK (no confusion)

3. OVERLAPPING PARTS

"Overlapping" occurs when two voices move in similar motion and the lower voice moves to a higher note than the one just left by the upper voice, as:

OVERLAP!

or, in similar motion downward:



OVERLAP!

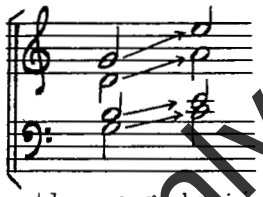
Overlapping tends to work against the clarity and individuality of the voice lines, and shouldn't be overdone. Use it only when necessary.

4. SIMILAR MOTION IN ALL PARTS

When all voices move in the same direction an *emphasis* results, which breaks the even flow of sound. Compare:

Overemphasis Better balance of energy

The more leaps that are involved in the similar motion, the more *emphasis* there is:

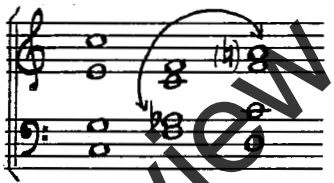


Greatly overemphasized!

Consequently, *try to avoid similar motion in all parts,* particularly with leaps, unless the emphasis which results is specifically desired. (The specialized technique of "Parallel Harmony" exploits similar motion. This will be separately examined in Chapter 7, Volume II.)

5. CROSS RELATION

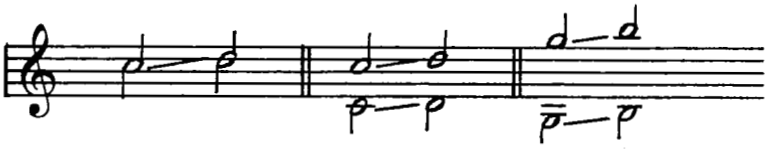
Definition: The use of an "altered" note immediately preceding or immediately following the diatonic version of the same note, in a *different part.* To illustrate:



As the example will demonstrate, cross relation produces a surprise *emphasis.* Whether or not the emphasis is acceptable depends on the melodic logic of the parts involved in it. (For instance, the above example will sound more logical if the A♭ and A are reversed!) Cross relation will be examined in more detail in Volume II.

6. PARALLEL OCTAVES AND UNISONS

The movement of any two parts in parallel unison, octaves, or double octaves, etc., is forbidden:

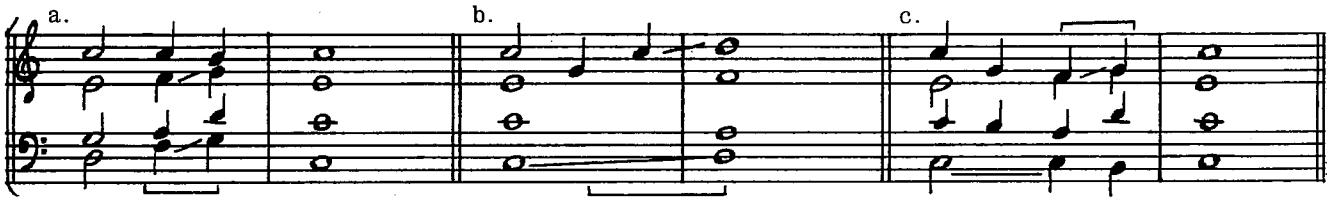


The objections:

a. The texture of the music is reduced at the point of the parallels, from four to three parts. (or three to two, etc.)

b. The powerful harmonic strength of the octaves overemphasizes the parts which are involved, and the balance is destroyed.

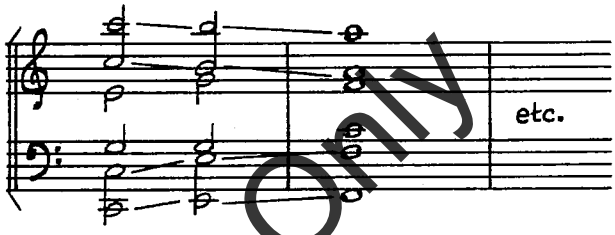
Examples: (All unacceptable)



The effect of Ex. c. above cannot be fully felt on the piano, but the overemphasis from the parallel octaves in Ex. a. and Ex. b. can be heard.

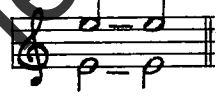
In orchestration, the melody and/or the bass, and often other parts, are doubled in octaves or in unison.

Example:



This orchestration technique does not concern us here. Throughout the study of harmonic theory parallel octaves and unisons will be regarded as unacceptable.

Note: The term "parallel" refers only to notes which step or leap. Repetition of the SAME notes is NOT considered parallel:

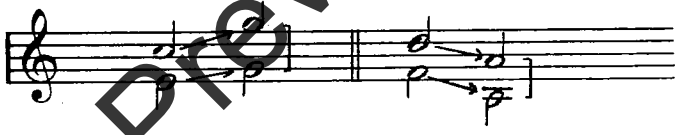


OK!

7. HIDDEN OCTAVES

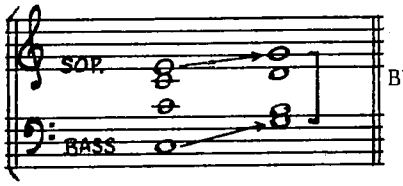
The term "hidden octave" is applied to an octave or double octave which is approached in *similar* motion.

Example:



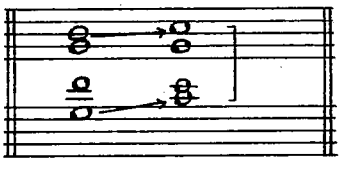
A hidden octave is not as dangerous as a parallel octave and can be used much more freely. There are two situations in which it should be avoided, however:

a. Avoid a hidden octave between "exposed" or outside parts, *when both parts leap:*



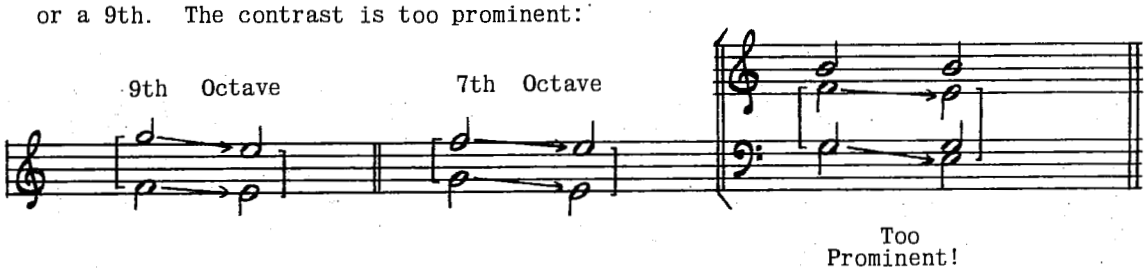
POOR. Too much emphasis on the "G"

BUT: if one of the parts moves by STEP ONLY, the emphasis is considerably lessened!



OK!

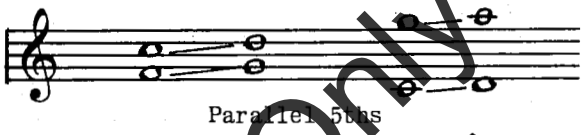
b. Avoid hidden octaves *between any two parts* when they are approached from the interval of a 7th or a 9th. The contrast is too prominent:

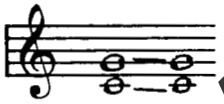


Summation: Avoid hidden octaves between outside parts when both leap, and between any two parts when approached from a Dissonance (7th or 9th).

8. PARALLEL 5THS

The term "parallel 5th" is applied to parallel movement of two voices in Perfect 5ths or 12ths:



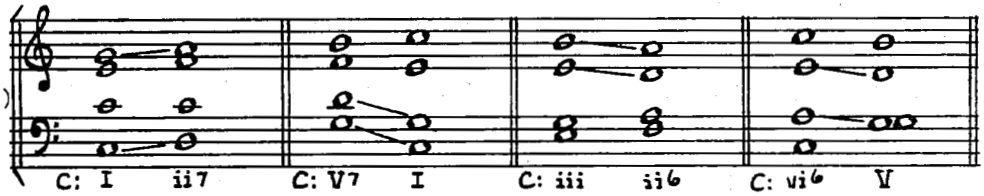
Repetition of the same Perfect 5th is NOT regarded parallel: 

Because of their excessive harmonic strength, parallel Perfect 5ths tend to dominate the chord movement. They are generally avoided between any two parts.

All parallel 5ths do not produce identical results however, and in some contexts their use may be acceptable, and even desirable. For instance, parallel 5ths by chromatic half step are less crude than those by full step or leap. Compare:

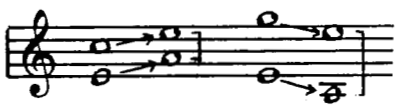
Parallel 5ths that occur between notes other than the root and perfect 5th of the chord are usually acceptable and, of course, "parallel harmony" employs parallel 5ths. To forbid parallel 5ths entirely, then, would simply not be consistent with common practice. Nevertheless, they cannot be ignored; if used, they must be used consciously and with full appreciation of the effect produced. The subsequent text will see many modifications of the parallel 5th rule but, in the early stages of the work, AVOID THEM.

Examples: (All unacceptable)



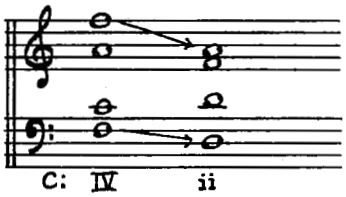
9. HIDDEN 5THS

The term "hidden 5th" is applied to a perfect 5th or 12th which is approached by two voices in *similar* motion, as:



Here again, it is the *emphasis* produced which can be objectionable. But the objection is not as severe as the objection to parallel 5ths, or even to hidden octaves. There is only one situation in which it should be avoided in four part writing: Do not use a hidden 5th between the Bass and Soprano (outside voices) when *both* parts are LEAPING!

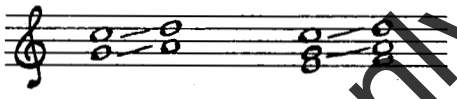
Example: (Unacceptable)



POOR!

10. PARALLEL PERFECT 4THS

Parallel perfect 4ths have a bleakness somewhat similar to parallel 5ths. However, differing from 5ths, their effect is completely covered when other notes are present, as:



"Hollow" OK!

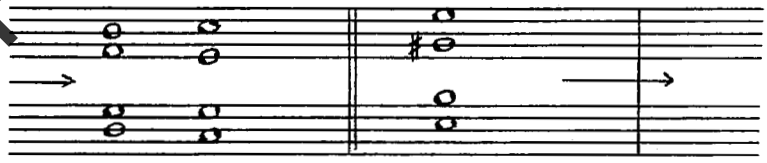
Therefore, parallel perfect 4ths in duet, or in any independent movement of two voices, may be undesirable. Otherwise they need no concern.

11. PARALLEL DISSONANCES

Parallel 2nds and 7ths occur occasionally in progressions involving 7th and 9th chords, and in parallel harmony. As long as they occur from a logical handling of the voice lines involved, they are usually acceptable.

12. THE CESURA

A **cesura** is a pause or break in the proceedings. Just as the rules of grammar in written English carry the sentence to a close, at which point a new sentence may be started, so do the rules of part writing carry the musical sentence to a close. After the cesura, the new sentence may start at another level, and it isn't always necessary to stitch the end of the sentence to the beginning of the next. Consequently, the rules of part writing may be suspended, to be taken up again with the start of the new thought. To illustrate:



End New area

Cesura

Note parallel 5ths, similar motion in all parts, and cross relation. All normally undesirable, but acceptable in this kind of situation.

Postcript to THE GENERAL PRINCIPLES OF VOICE LEADING

The preceding points are offered as guides to the student. They, along with most of the study material to follow, are based on what has been done, and not necessarily on what may be. The principles are based on the practice of musicians in the Romantic period, which is the basis for all present day uses of tonality and the wellspring of all the more modern techniques.

These principles are concerned with *part writing* and not with *sectional writing*. Nevertheless, they have important reference in all areas of modern arranging.

Eventually, it is hoped, the student will write music on his own responsibility and on his own terms. The restrictions found in any academic investigation are aimed ultimately at artistic freedom, and there are no real *rules* in music except those provided by the limits of the style and the environment. Ungrammatical, but true is the dictum: "What sounds good is good", and some of the most "correct" music is also the dullest. The student is advised that he may break any rule he cares to, provided:

A. He is aware of it.

B. His music sounds better for it.

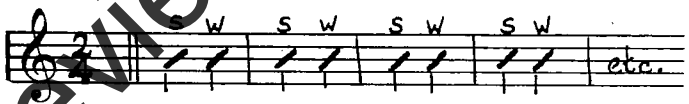
IV. HARMONIC PULSE

The effectiveness of a chord progression cannot be determined without reference to the position it occupies in the established rhythm. A chord movement that is correct in all of its grammatical details will nevertheless sound wrong if it happens in the wrong place!

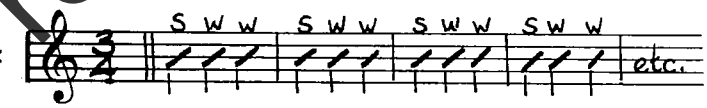
All time signatures break down into some arrangement of **Strong** and **Weak** beats and the relationship of any chord change to these Strong and Weak beats must be taken into account.

Here are a few time signatures, with the **Strong** (S) and **Weak** (W) beats indicated:

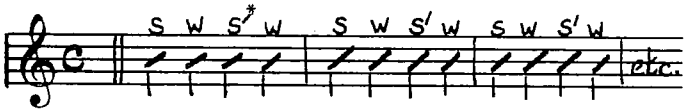
Simple DUPLE times. $\left(\frac{2}{16}\ \frac{2}{8}\ \frac{2}{4}\ \frac{2}{2}\right)$ Example:



Simple TRIPLE times. $\left(\frac{3}{16}\ \frac{3}{8}\ \frac{3}{4}\ \frac{3}{2}\right)$ Example:



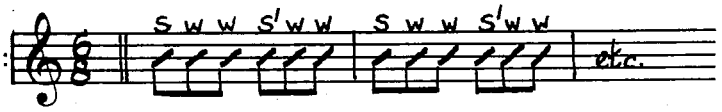
QUADRUPLE times. $\left(\frac{4}{16}\ \frac{4}{8}\ \frac{4}{4}\ (C)\ \frac{4}{2}\right)$ Example:



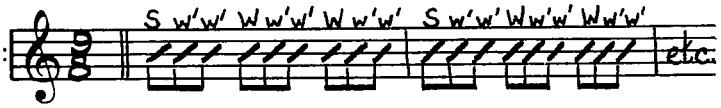
$\frac{4}{4}$ is called "common time" and is often indicated with **C**.

*Tick (/) indicates slightly less strong.

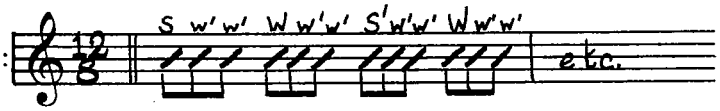
Compound DUPLE times. $\left(\begin{smallmatrix}6 & 6 & 6 & 6\\16 & 8 & 4 & 2\end{smallmatrix}\right)$ Example:



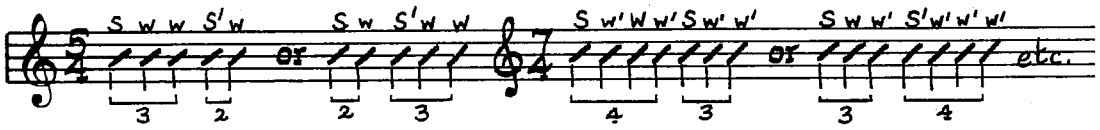
Compound TRIPLE times. $\left(\begin{smallmatrix}9 & 9 & 9\\16 & 8 & 4\end{smallmatrix}\right)$ Example:



Compound QUADRUPLE times. $\left(\begin{smallmatrix}12 & 12 & 12\\16 & 8 & 4\end{smallmatrix}\right)$ Example:

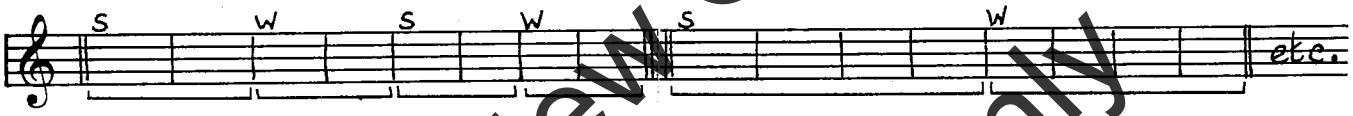


More complex times:

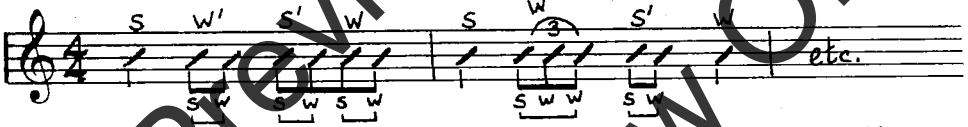


Further, the **Bars** tend to arrange themselves into DUPLE groupings of Strong and Weak, no matter what the time signature:

Similarly:



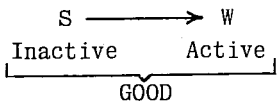
Further, any single beat, when subdivided, will break into obvious arrangements of Strong and Weak, as:

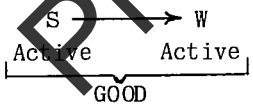


In calculating the relationship of the harmonic progression to the rhythm, the generally reliable guiding principle is:

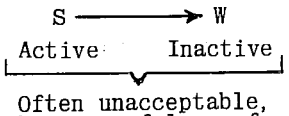
ACTIVATE WEAKNESS!

To illustrate:





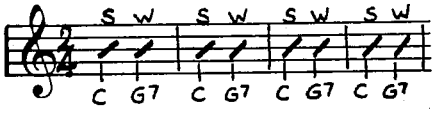
BUT:



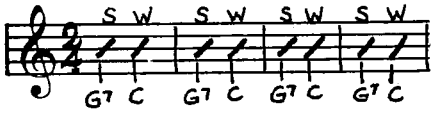
Often unacceptable, because of loss of "forward motion".

Examples:

This:

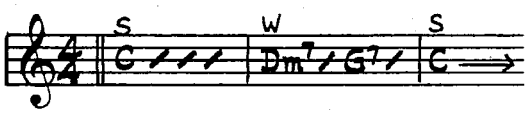


is more "natural" and has better "forward motion" than:

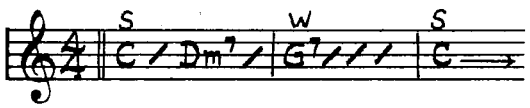


Reason: The **C** chord (no dissonance) is Inactive, but the G^7 (dissonance) is Active. The first example **activates weakness.**

and this:



has better "forward motion" than:



Reason: The first example has *more activity* in the *weaker* second bar.

Important Addendum: The second example above, which shows a loss of forward motion, would be quite acceptable at the END of a passage. A *braking* or "slowing down" is undesirable at the beginning or in the body of a passage, but is entirely appropriate at the ending.

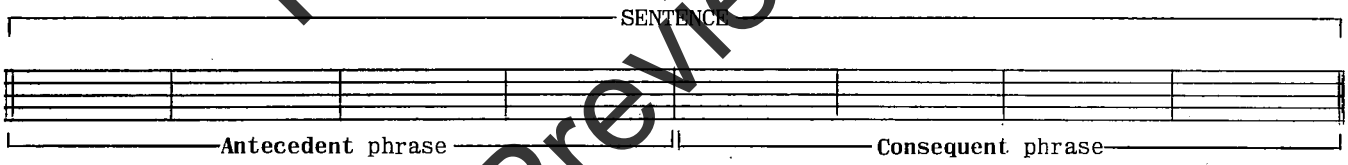
A. Rhythmic Divisions

A musical composition is made up of sections similar to the chapters, paragraphs, and sentences of a book. In fact, the shortest complete thought in music is called a **sentence**.

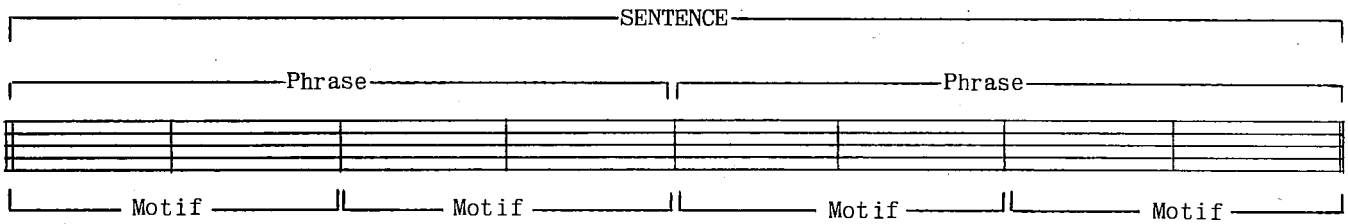
Sentences are seldom less than eight bars. (Example of exception: the first sentence of "America", which is only six bars.) Sentences are seldom, if ever, longer than sixteen bars.

In dance music, marches, jazz, and other forms where the rhythm is rigidly organized, sentences are normally in multiples of two, with the eight bar sentence being the most common. (The blues uses a twelve bar sentence, and many melodies of Cole Porter provide examples of sixteen bar sentences.)

Sentences will subdivide into **Phrases**. An eight bar sentence, for example, will break into two phrases, called **Antecedent** and **Consequent**, as:



Sometimes the phrases themselves will break into subdivisions, often called **Motifs**, as:



B. Cadences

At the end of every Rhythmic Division, some sort of **cadence** occurs. Cadences are similar to punctuation in written English, and they are primarily associated with rhythm, but certain *harmonic* patterns have become associated with the cadence positions:

1. "FINAL" CADENCES (similar to periods):

   a. "Authentic" cadence: V - I
   b. "Plagal" cadence: IV - I

   All final cadences are V - I, IV - I, or modifications or substitutions for these.

2. "DECEPTIVE" CADENCES:

The movement of V, at a cadential point, to a chord other than I, is called, descriptively, a "Deceptive cadence". Its purpose: prolongation.

3. "HALF" CADENCES (similar to commas):

A half cadence is the end of a rhythmic division on a "tendency chord" (often V). Examples: end of antecedent phrase; end of a "1st ending", etc.

The first requirement in part writing is the ability to join one chord successfully to another! Therefore, this text will use the "two chord" cadence patterns as vehicles for the first examination and use of the principles of voice leading.

Chapter 5

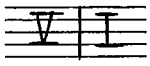
THE CADENCES

I. THE FINAL CADENCES

A. "V - I"

A cadential "V - I" is called an **authentic** cadence. It is the standard final cadence harmonic formula.

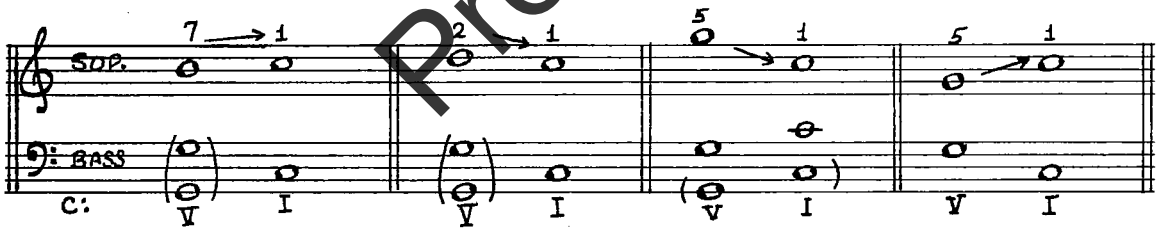
Introductory:

Two Rhythmic forms		Two Structural forms	
Masculine (usual)	Feminine (unusual)	Perfect	Imperfect
I occurs at a strong beat, as: 	I occurs at a weak beat, as: 	Soprano ends on the tonic. Both chords are in root position.	Soprano ends on a note other than the tonic or both chords are not in root position.

Final sentences usually end with Perfect cadences. Imperfect cadences are valuable at the end of sentences which are not intended to be final, since they sound less conclusive.

For now, we will use *Root Positions only,* so the matter of Perfect or Imperfect will depend on the final soprano note.

Here are the bass and soprano for the possible Perfect V - I cadences in C major:



Taking into account the Rhythmic and Structural forms, the available V - I cadences are:

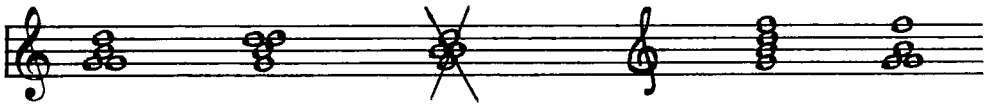
- MASCULINE PERFECT (most frequent)
- MASCULINE IMPERFECT
- FEMININE PERFECT
- FEMININE IMPERFECT (least frequent)

1. V - I IN MAJOR

a. Vertical considerations

1. Structure of V ("short score" examples)

V triad: C: V

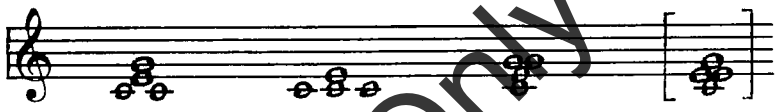


Doubled root	Doubled 5th	Doubled 3rd	C: V^7	Full 7th	Omit 5th
BEST	OCCASIONAL	NEVER			Double root
				BOTH FINE!	

Note: V^7 is more frequently used than V triad - EVEN WHEN ALL OTHER CHORDS ARE TRIADS!

2. Structure of I

I triad: C: I

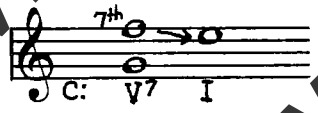


(I^7 will NOT be used for now.)

Doubled root	Tripled root	Doubled 5th	Doubled 3rd
BEST	OK	OCCASIONAL	IRREGULAR
			Don't use on final I.

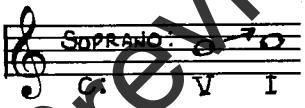
b. Voice Leading ("Horizontal" considerations)

1. When 7th is used on V (and it most often is), it MUST FALL TO THE 3RD OF I:

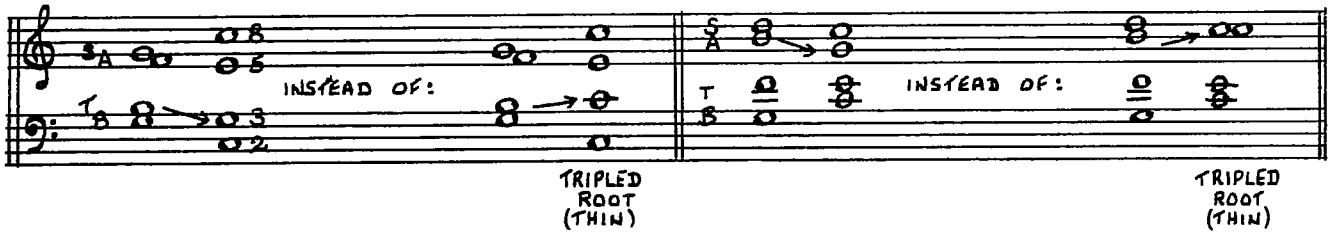


For now, this is obligatory.

2. If the 3rd of V (the "leading-tone") is in the soprano, it will rise to the tonic of I:

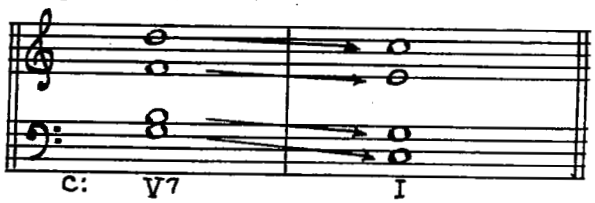


However, if it is in a "buried" inner part (alto or tenor) it may either rise to the tonic, or *fall to the 5th of I,* IF the 5th of I is not available in any other part. To illustrate:



Reason: Since the I triad has no "forward motion", it is always heard "vertically" and composers have preferred to allow the 3rd of V to fall to the 5th of I, in order to "fill-out" the important I CHORD. This movement is confined to INNER voices only!

3. While similar motion of all parts is generally undesirable, the following situation IS acceptable on V - I:



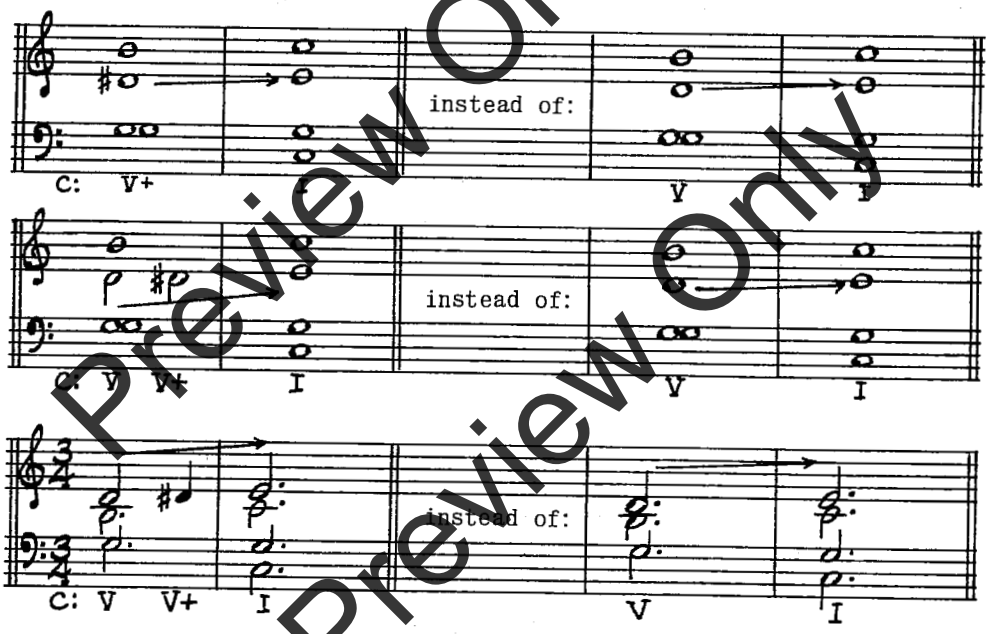
The *emphasis* which similar motion produces is not objectionable here, since it is not inconsistent with the "full stop" quality of V -I.

4. All other grammatical principles of voice leading are applicable. These are found under "General Principles of Voice Leading" in the previous chapter. Consult them!

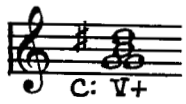
Addendum: While it is certainly not the intention at this point to enter a study of chromatic harmony, there is one chromatic form of V *in Major* that is familiar and widely used: the "V+". There seems no harm in introducing it here.

Proposition: When the 5th of V (the supertonic) is moving UP to the 3rd of I (the mediant), it may be chromatically raised (by accidental) to bring it closer to, and lead it into, the mediant. The resulting chord is "V+" and it may be used INSTEAD of the diatonic V, or BETWEEN diatonic V and I.

Example:



Structure of V+:



Doubled root only.

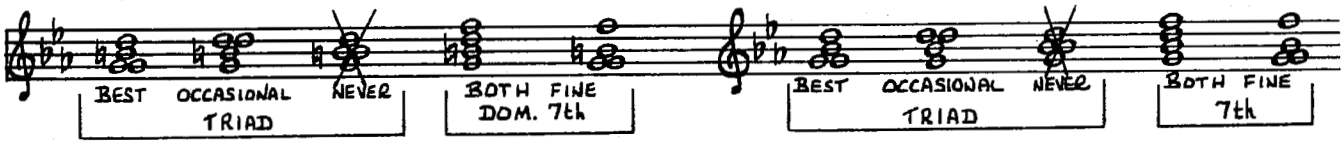
Caution: For now, *don't use the 7th with V+*. The Augmented 5th is performing the same function as the 7th and if both are used, a "doubled 3rd" on I will result:

2. V - I IN MINOR

The considerations of Masculine or Feminine, Perfect or Imperfect are the same as they are in Major.

a. Vertical considerations:

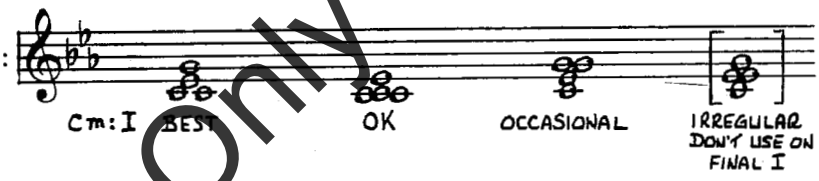
Two forms of V:



This is the Tonal (or Musica Ficta) V, and is the *Regular* form. Unless otherwise specified, the term "V" in Minor IMPLIES THIS FORM OF THE CHORD.

This is the Modal V (or Vmi) and is the *Irregular* form. See notes in this section dealing with "Modal Cadences".

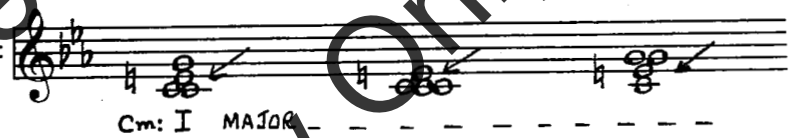
Structure of I (triad only for now):



The "Tierce de Picardie" (Picardy 3rd)

Proposition: The final tonic chord in Minor may be a MAJOR chord. The Major 3rd is called the "Tierce de Picardie".

Example:



b. Horizontal considerations

NOTE: The following text is in three divisions:

A. TONAL cadence
B. MODAL cadence
C. MODAL-TONAL cadence

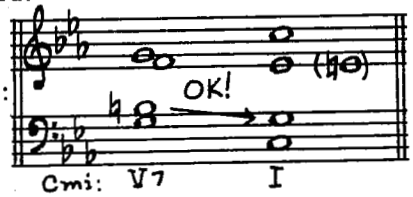
A. The TONAL cadence

Example: C minor: | G major triad or G_7 → Cmi (or Cma.)

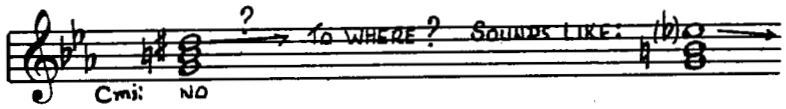
The *overwhelming majority* of V - I cadences in minor are in this form. In its details it is exactly the same as V - I in major, but note these points:

1. Don't forget the leading tone accidental on the 3rd of V.
2. The Musica Ficta leading tone can still fall to the 5th of I, *in an inner part,* in order to "fill out" the tonic chord:

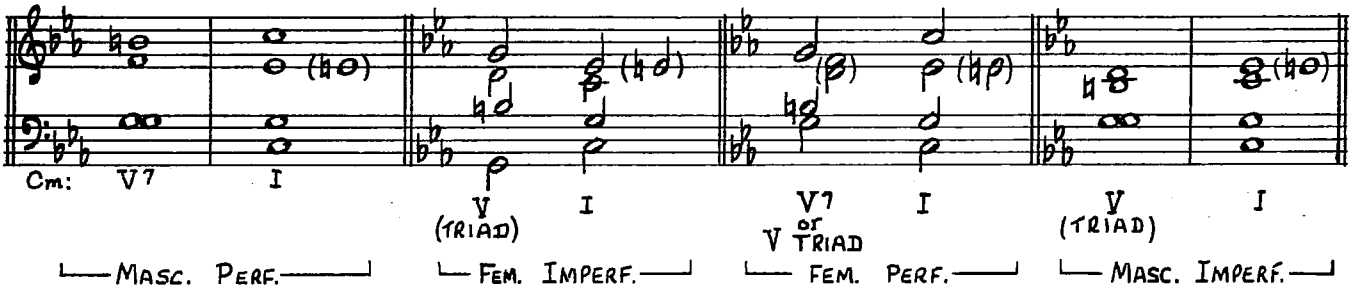
Example:



3. The V+ is NOT available in minor:



Here are a few examples of Tonal V - I cadences in minor. Note their similarity to V - I in major; and when the Tierce de Picardie is used, the sound is identical:

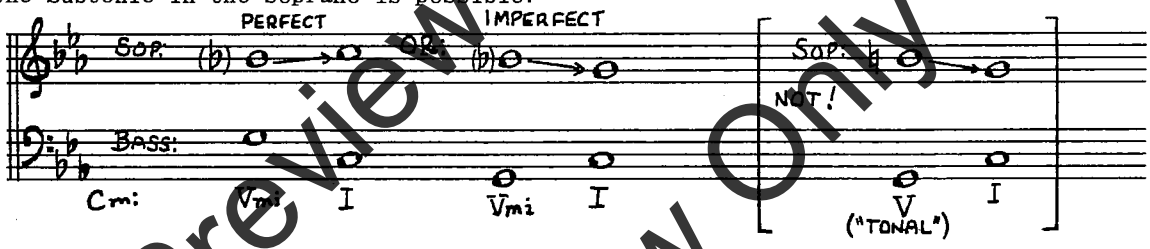


B. *The MODAL cadence*

Example: C minor: [G minor triad or Gmi^7] → Cmi (or Cma.)

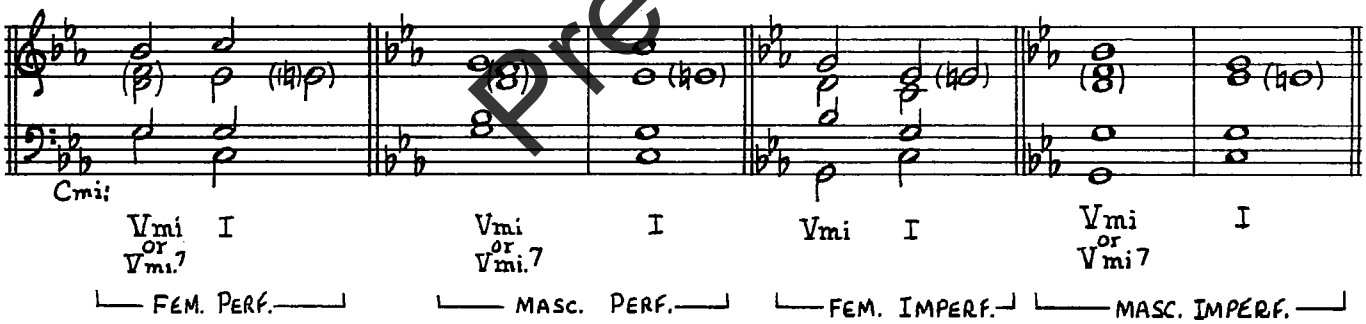
The use of "Modal V" as a cadential approach to I is not common, either in traditional or popular harmony. It has a passive and dignified quality, lacking the energy and conclusiveness of the the Tonal cadence.

All the technical considerations are the same, but it is worth noting that an Imperfect cadence from the Subtonic in the soprano is possible:



Here are a few examples of Modal V - I cadences in minor. Note these points:

1. Use of the Tierce de Picardie with a Modal cadence produces an interesting contrast.
2. The use of Vmi as a triad only may be more suitable to the passive quality of a modal cadence.

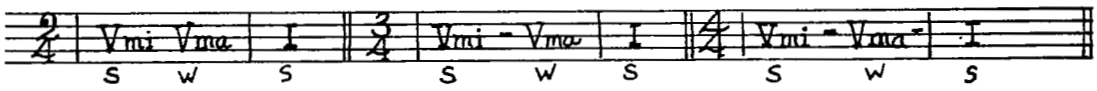


C. *The MODAL-TONAL cadence*

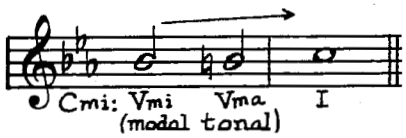
Example: C minor: [Gmi - Gma -] → Cmi (or Cma.)

(modal-tonal)

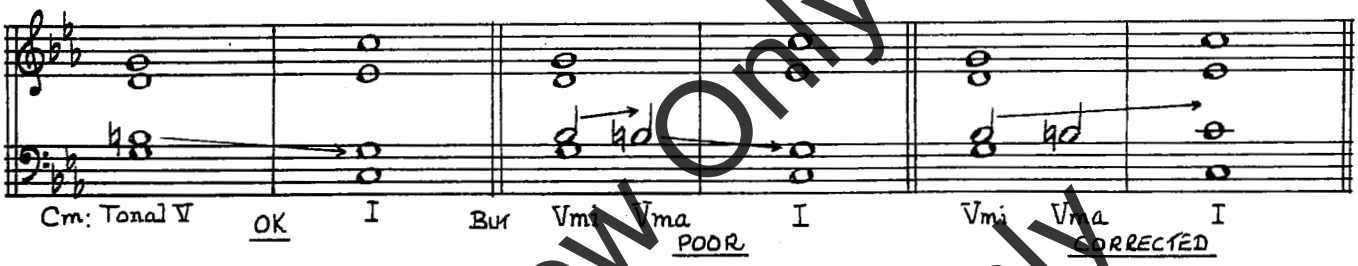
The V chord is initially struck in Minor form, and then changed to Major form to lead it more definitively into I. The Vmi - Vma movement will be from *strong* to *weak*, with the subsequent I occuring at a *strong* position, so that the Modal-Tonal cadence formula is Masculine only, as:



The "essence" of the Modal-Tonal cadence is the movement of the subtonic up to the leading tone, and this normally occurs in the same part, as:

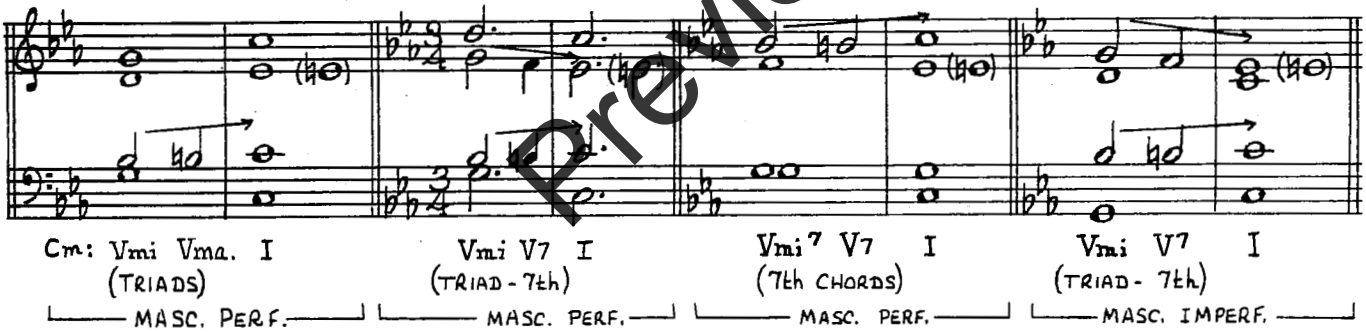


Because of the *chromatic* nature of this movement, the leading tone should continue on up to the tonic, no matter what part it occurs in. Consequently, it may often be necessary to use the "tripled root" form of I. To illustrate:



Here are a few examples (Masculine only) of Modal-Tonal cadences in minor. Note these points:

1. Both Vmi and Vma can be triads only.
or 2. Both can be 7th chords.
or 3. Vmi can be a triad with the 7th introduced into Vma - thus giving the Tonal V an even greater *leading* urge to I.



Thus, the available "authentic" V - I cadences in Minor are:

Tonal cadence: ------Tonal V or Tonal V^7---I (or Ima.)
Modal cadence: ------Modal V or Modal V^7---I (or Ima.)
Modal-Tonal cadence: [Modal V - Tonal V; Modal V - Tonal V^7; Modal V^7 - Tonal V^7]---I (or Ima.)

ASSIGNMENT 18 (V - I in Major and Minor)

1. In four parts, (S, A, T, B) write:

   Ten Masculine Perfect V - I cadences in various major keys
   Ten Masculine Imperfect V - I cadences in various major keys
   Six Feminine Perfect V - I cadences in various major keys
   Six Feminine Imperfect V - I cadences in various major keys

   Use mostly V^7, but make some use of V triad and V+. ROOT POSITIONS ONLY! - but strive for variety in the soprano line and the voicings.

2. Write:

   Ten Masculine Perfect TONAL V - I cadences in various minor keys
   Ten Masculine Imperfect TONAL V - I cadences in various minor keys
   Six Feminine Perfect TONAL V - I cadences in various minor keys
   Six Feminine Imperfect TONAL V - I cadences in various minor keys

   Use mostly V^7, but make some use of V triad. Use Tierce de Picardie occasionally. ROOT POSITIONS ONLY!

3. Write sufficient examples of Modal cadences in various minor keys; Perfect and Imperfect, Masculine and Feminine. Use Tierce de Picardie occasionally. ROOT POSITIONS ONLY!

4. Write sufficient examples of Modal Tonal cadences in various minor keys. Masculine only, but use Perfect and Imperfect forms. Use Tierce de Picardie occasionally. ROOT POSITIONS ONLY!

5. **The ear:** Make every effort to "hear" the notes, chords, and chord joinings as you are writing them. Cultivate the ability to recognize, on hearing, both the overall effect of V - I and the more subtle details of the various forms it can take.

B. "IV - I"

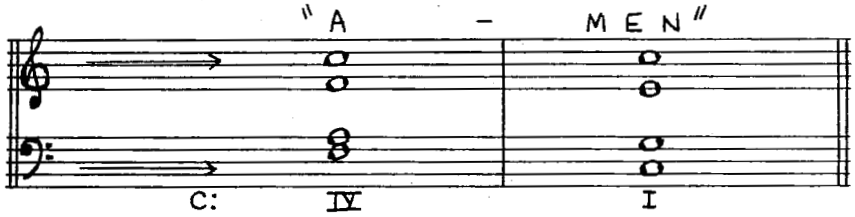
A cadential "IV - I" is called a **Plagal** cadence. It is considerably less energetic and more passive than the authentic "V - I". Reasons:

1. No "leading tone" in IV.
2. IV - I is a SECONDARY progression whereas V - I is a PRIMARY progression. (See next chapter.)

Introductory:

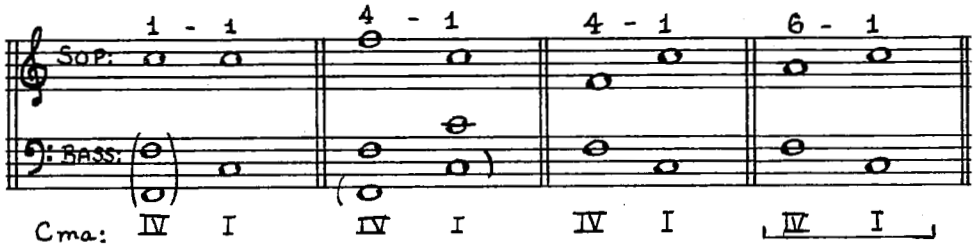
Probably the most familiar use of the Plagal cadence is the "AMEN" formula.

Example:



Certain areas of basic jazz exploit this sound, probably because of its "Spiritual" implication.

Because of its lack of decisiveness, the Plagal cadence is rarely used in Feminine rhythm, but the Perfect and Imperfect forms are available. Here are the bass and soprano for the possible Perfect IV - I cadences in C major:

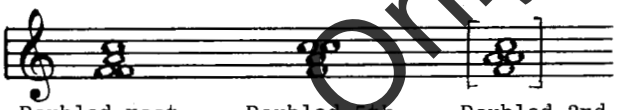


Note the "pentatonic" flavor of the submediant-tonic melody.

1. IV - I IN MAJOR

a. Vertical considerations

1. Structure of IV (short score)



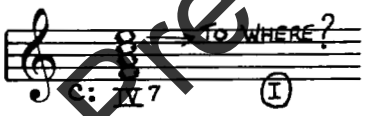
Cma: IV Doubled root Doubled 5th Doubled 3rd

Both final

Irregular

(Not necessary in Plagal cadence)

IV^7 will NOT be used in the Plagal cadence. The I chord offers no satisfactory resolution note for the major 7th of IV since, at this point, the major 7th must either rise or fall one step:

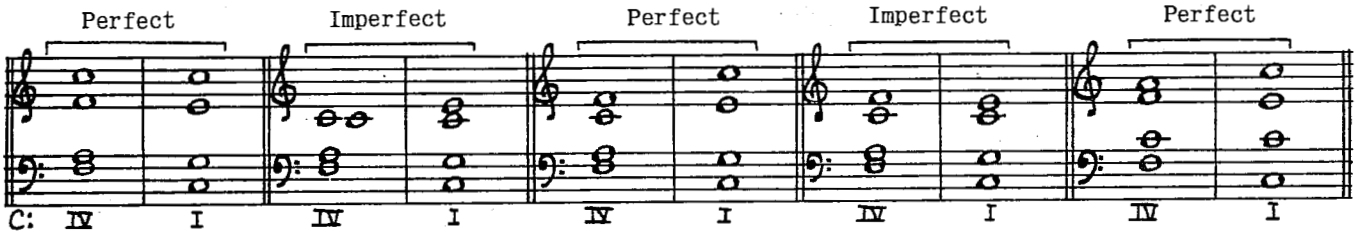


2. Structure of I - Same as before. (See V - I in major.)

b. Horizontal considerations

Since IV is a consonant chord, containing no *specific* dissonances, its voice leading is relatively free. It is advisable, particularly with inner parts, to take the line of least resistance. In other words, don't leap if a step is available, don't step if the same note can be retained.

Here are a few examples of Perfect and Imperfect Plagal cadences in major. (For now, root positions only.)

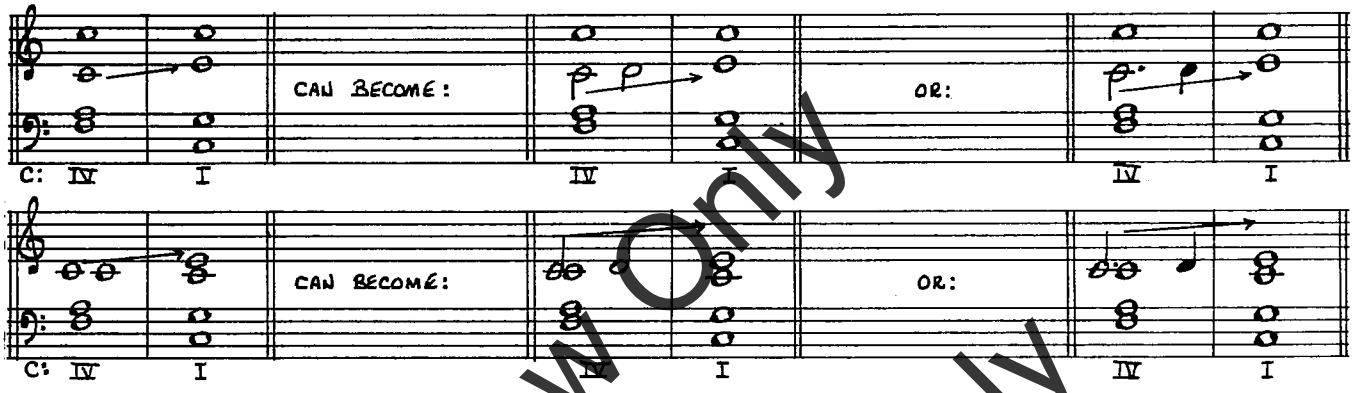


The "passing 6th" on the Plagal cadence

While it is not the intention here to enter a study of "non-chordal" tones, there is one familiar modification of the Plagal cadence which involves a "passing tone".

Proposition:

In situations where the TONIC in IV (its 5th) is *leaping up* to the MEDIANT in I (its 3rd), the leap may be bridged - at a *weak* beat or fraction of a beat - with a passing SUPERTONIC. This supertonic stands in the relation of a "6th" to the IV chord and, consequently, is called a "passing 6th". The following examples should make the process clear:



2. IV - I IN MINOR

a. Vertical considerations

1. Structure of IV (two forms)

Cmi IV: Doubled root Doubled 5th Doubled 3rd — Doubled root Doubled 5th Doubled 3rd

BOTH FINE! — IRREGULAR — BOTH FINE! — NO

Not necessary in Plagal cadence

REGULAR — IRREGULAR ("Dorian IV")

See notes on "Dorian Plagal cadence"

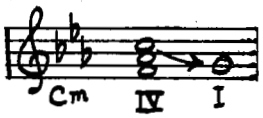
2. Structure of I - Same as before, including possible *Tierce de Picardie* (See V - I in minor).

b. Horizontal considerations

1. Regular Plagal cadence (Regular IV to I)

Again, IV is a consonant chord, containing no specific dissonances, so that its voice leading is relatively free. It is worth noting, however, that the 3rd of Regular IV in minor is the "minor submediant", situated only one-half tone above the attractive dominant. It exhibits a clear *scale tendency* to fall to the dominant.

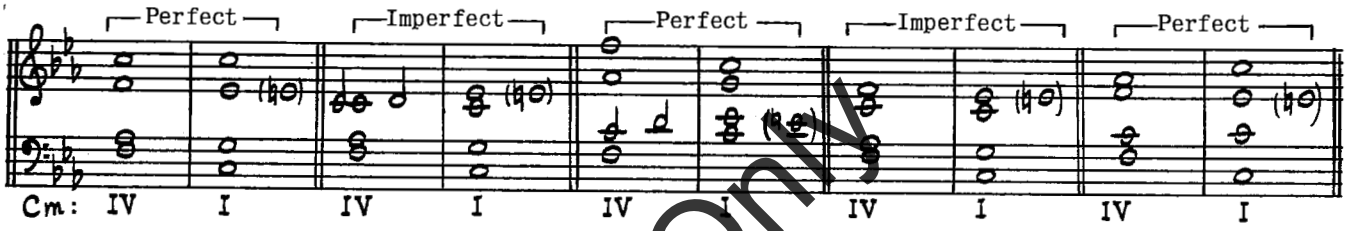
half-tone

Example: 

No *law* is involved here, but the above movement IS the most obvious and sensitive leading of the 3rd in Regular IV.

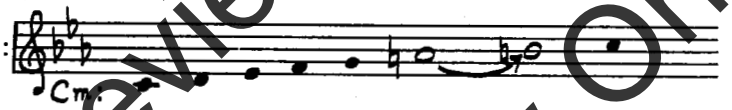
Here are a few examples of Perfect and Imperfect Regular Plagal cadences in minor. Note the availability of:

a. the "passing 6th"
b. the "Tierce de Picardie"

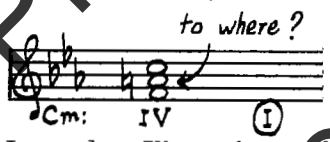


2. The "Dorian" Plagal cadence

What we have called the "logical" use of the raised 6th degree in minor, follows the principle of the *ascending melodic minor scale*. That is, the 6th degree is raised, by accidental, to lead it UP to the raised 7th degree.

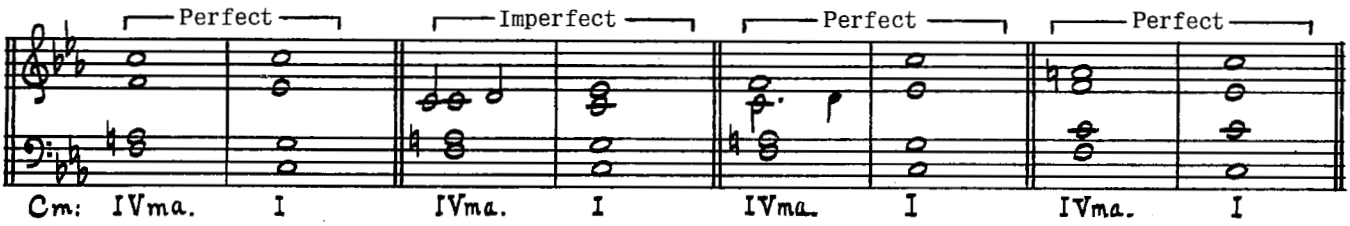
Example: 

Since the I chord doesn't contain the raised 7th degree, there is obviously no "logical" voice leading reason to employ the Irregular IV when moving to I.

Example: 

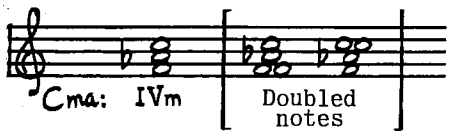
Nevertheless, the Irregular IV *can* be used to move to I, simply for a "Dorian" reference. No special directions are necessary; the "Dorian 6th" can be regarded as free. (One point: If the Tierce de Picardie is used on the I in a Dorian Plagal cadence, the "Dorian quality" will be lost. The result will be identical to IV - I in major.)

Here are a few examples of "Dorian" Plagal cadences:

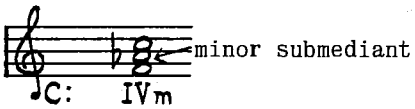


C. The "Altered Plagal Cadence" (in MAJOR ONLY)

Proposition: The "IVmi" (IV$^{\flat 3}$) chord may be used in MAJOR:



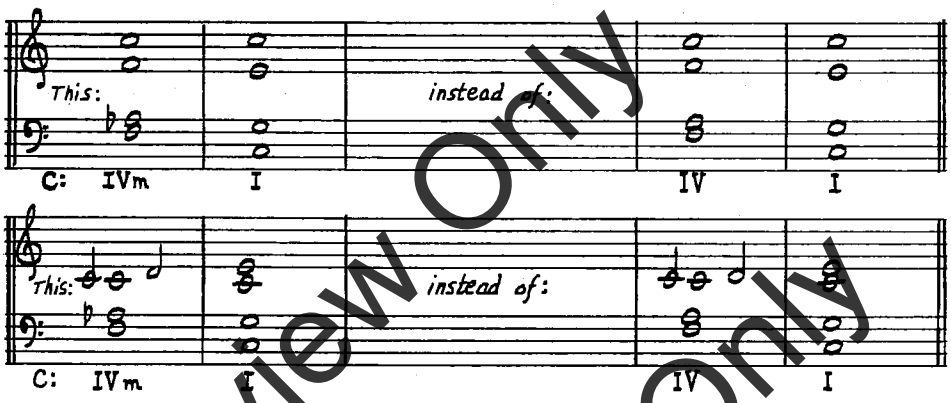
This chord represents our first encounter, in harmony, (but by no means our last!) with the "minor submediant" in MAJOR, as:



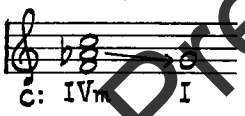
The IVmi chord is *borrowed* from the parallel minor, where it is the Regular IV chord.

The Altered Plagal Cadence makes use of the IVmi chord in two basic ways:

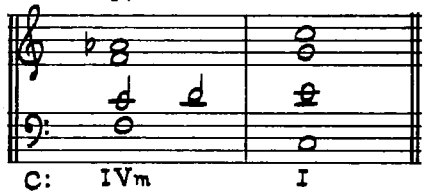
1. IVmi MAY BE USED *INSTEAD OF* IV:



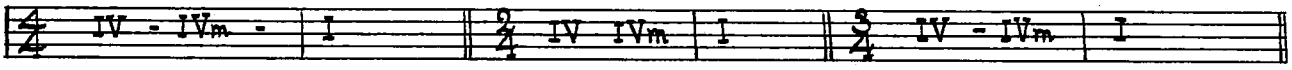
When used as above, the 3rd of IVmi (the minor submediant) will logically fall to the dominant in I, as:



However, since it is not specifically a "harmonic dissonance", it COULD leap, such as:

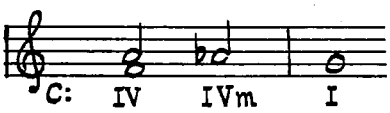


2. IVmi may be used chromatically *between* IV and I. (This is, in fact, the more common use in popular harmony.) The movement of IV to IVmi will be from strong to weak, with the subsequent I occurring at a strong beat; so the chromatic form of the Altered Plagal Cadence will be in Masculine form only, as:

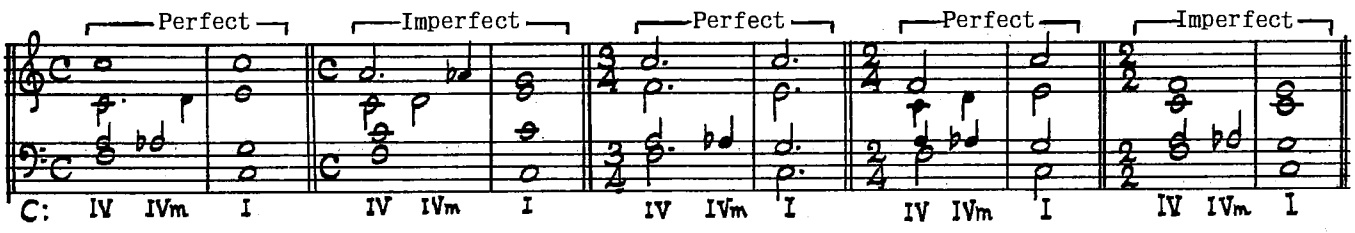


When any chromatically altered note is preceded by the diatonic version of the same note, it is required to continue - by half step - in the *same direction,* in order to complete the chromatic movement. Therefore, when the Altered Plagal Cadence is used chromatically, the minor submediant (3rd of IVmi) will fall to the dominant.

Example:



Here are a few examples of chromatic Altered Plagal Cadences. Note use of the "passing 6th":



ASSIGNMENT 19 (The Plagal Cadences)

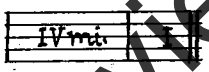
NOTE: Root Positions only in all the following exercises.

1. In four parts, write sufficient Perfect and Imperfect "Amens" in various major keys. Construct some to show use of "passing 6th" between the 5th of IV and the 3rd of I.

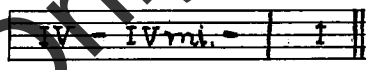
2. Write sufficient Perfect and Imperfect REGULAR Plagal cadences ("Amens") in various minor keys. Construct some to show use of "passing 6th", and use an occasional Tierce de Picardie.

3. Write a few Perfect and Imperfect "Dorian" Plagal cadences in various minor keys.

4. Write sufficient Perfect and Imperfect ALTERED PLAGAL CADENCES in various MAJOR keys, with IVmi used *instead of IV,* as:



and in CHROMATIC form, as:



Construct some to show use of "passing 6th".

5. **The ear:** Develop a familiarity with, and the ability to recognize, both the overall effect of IV - I and the more subtle details of its various forms.

II. THE DECEPTIVE CADENCES

Introductory:

Definition: The movement of "V", at a cadential position, to a chord other than "I".

Purpose: Prolongation! The deceptive cadence avoids the conclusion, and keeps the music moving. It is usually followed by material leading back to a regular cadence.

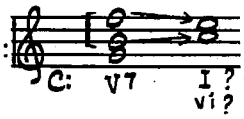
In diatonic tonality, the available deceptive cadences are:

V - ii
V - iii
V - IV
V - vi

(V - vii would be only a change of form of the same harmony.)

In traditional harmony, the most common and most adaptable of these is V - vi. The vi chord can resolve the dissonance in V and V^7 in the same way that I can resolve it.

Example:



The terms "Perfect" and "Imperfect" are NOT applied to deceptive cadences. They are, by their nature, always "Imperfect".

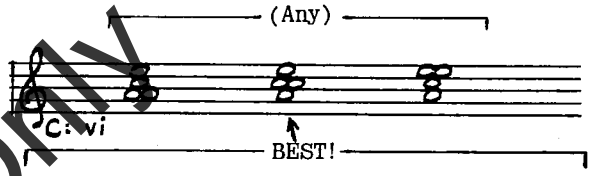
A. "V - vi"

1. V - vi IN MAJOR

a. Vertical considerations:

1. Structure of V and V^7 - Same as before.

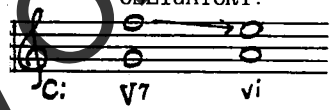
2. Structure of vi (triad only for now):



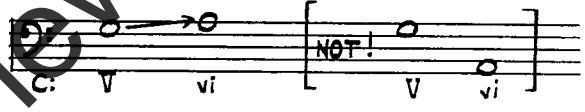
(When the 3rd is a TONAL note, as it is in the ii, iii, and vi chords, it is not only an acceptable double, it is the *preferred* double!)

b. Horizontal considerations

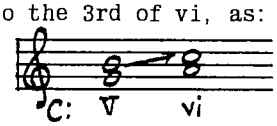
1. The 7th of V, when used, will fall to the 5th of vi:



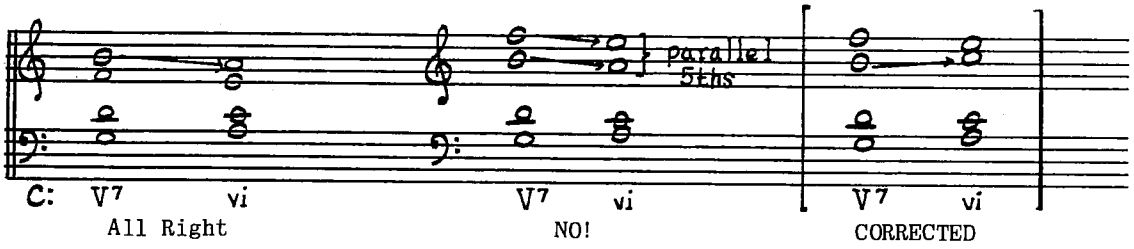
2. Root position only will be used for now, and the bass will rise one step:



3. The 3rd of V (the leading-tone) will most likely rise to the 3rd of vi, as:

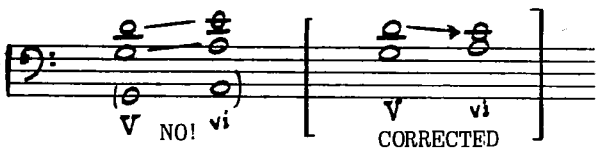


but, it may fall to the root of vi, provided it doen't cause parallel 5ths with the falling 7th. So:

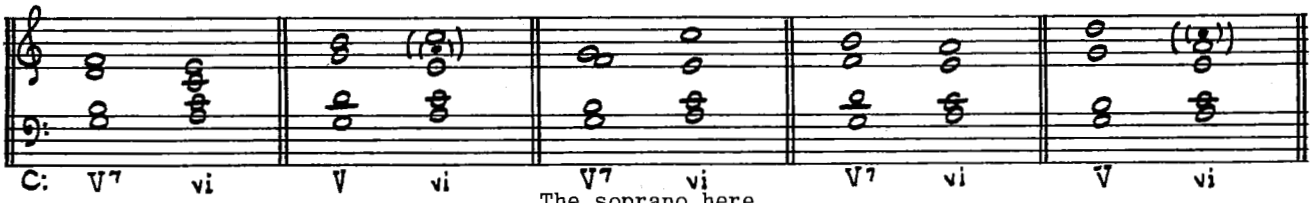


4. Avoid parallel 5ths between the root and 5th of the chords. **(This particular parallel 5th is a major hazard in all "step" progressions!)**

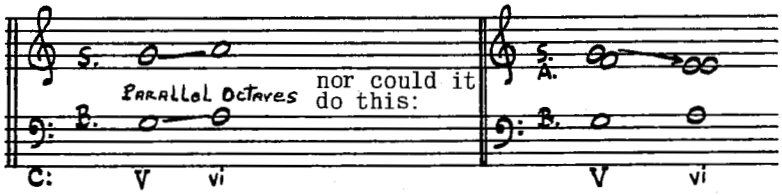
Example:



Here are a few examples of V - vi and V^7 - vi in major:



The soprano here could not do this:

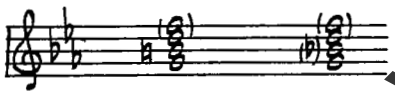


nor could it do this:

Hidden unison from a dissonance (2nd)

2. V - vi IN MINOR

There are two forms of "V" and two forms of "vi" in minor:



C minor: V REGULAR (Tonal V) IRREGULAR (Modal V)

V

C minor: vi REGULAR IRREGULAR (Dorian vi)

vi

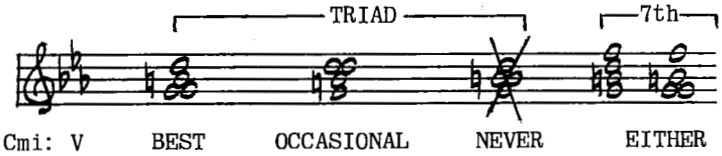
Consequently, there are four possible V - vi movements in minor:

Tonal V (or V^7) —— Regular vi
Tonal V (or V^7) —— Dorian vi
Modal V (or Vmi^7) —— Regular vi
Modal V (or Vmi^7) —— Dorian vi

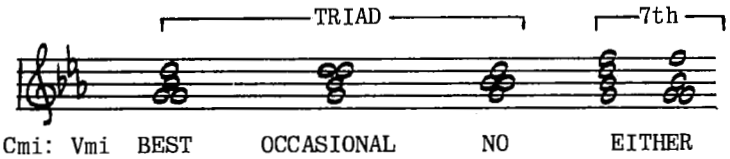
Of these, the usual is Tonal V (or V^7) to REGULAR vi. (In fact, the use of the Modal V in a deceptive cadence is not at all common.)

a. Vertical considerations

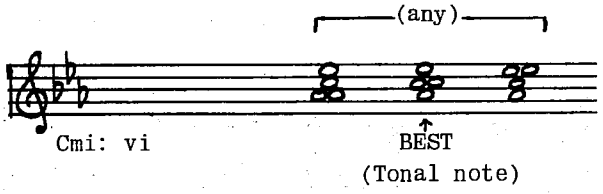
1. Structure of Tonal V - as before:



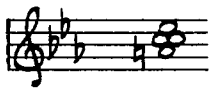
2. Structure of Modal V - as before:



3. Structure of Regular vi (triad only for now):



4. Structure of Irregular (Dorian) vi (triad only for now):

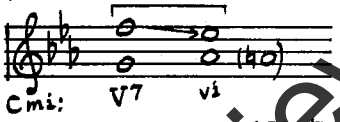


Reasons: a. Never double a diminished 5th.

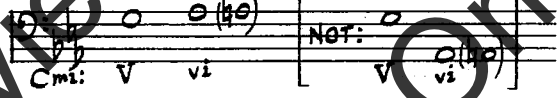
b. The root here is an "altered" note, and altered notes are normally not doubled.

b. Horizontal considerations

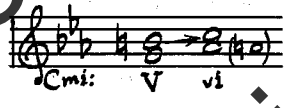
1. The 7th of V, when used, (and it most often IS used) will fall to the 5th of vi or Dorian vi:



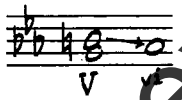
2. The bass will rise a 2nd:



3. The 3rd of Tonal V (the leading-tone) will rise to the 3rd of vi:

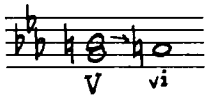


It will NOT do this:



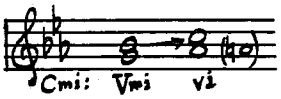
(The augmented 2nd leap from the Harmonic Minor scale is not normally used in voice leading.)

nor will it do this:

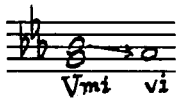


1. "Illogical" Musica Ficta.
2. Results in doubled root in Dorian vi.

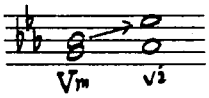
4. The 3rd of Modal V (the "subtonic") may rise to the 3rd of vi:



Or it may fall to the root of Regular vi:

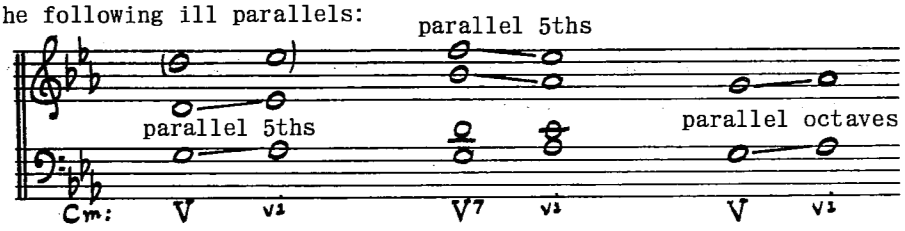


In fact, since it is a relatively free note, it could also leap to the 5th of vi:

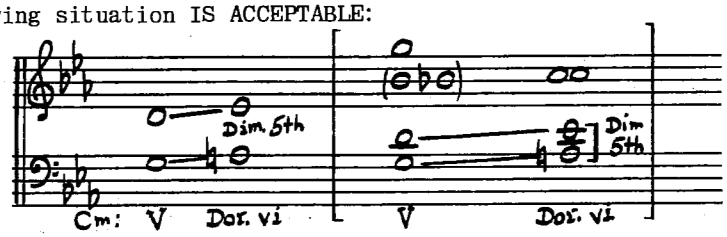


It will NOT, however, fall to the root of Dorian vi, since this will result in a doubled root in the Dorian vi chord:

5. AVOID the following ill parallels:



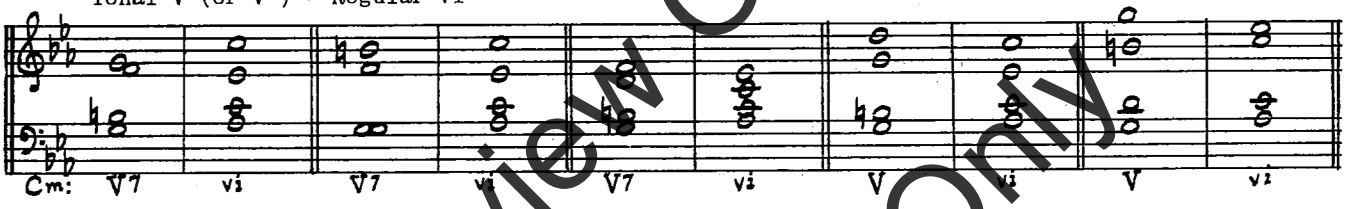
The following situation IS ACCEPTABLE:



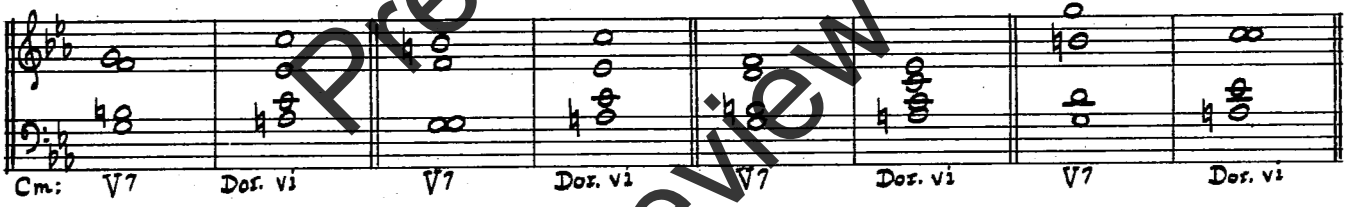
Reason: Parallel 5ths are *only objectionable when the notes of the second 5th are the Root and PERFECT 5th of the chord!* In this case, the second 5th is a DIMINISHED 5th.

Here are a few examples of V - vi in minor:

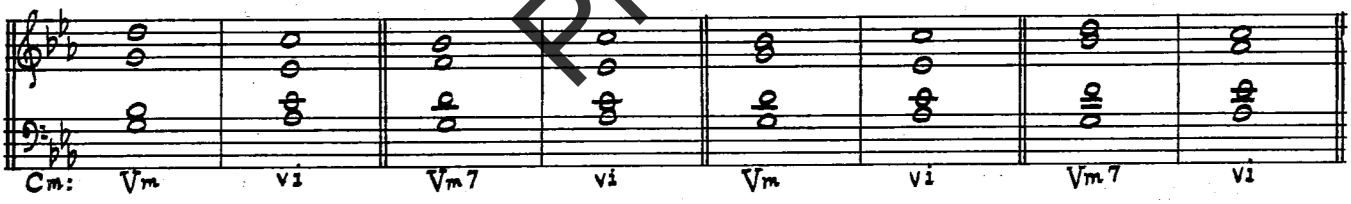
Tonal V (or V^7) - Regular vi



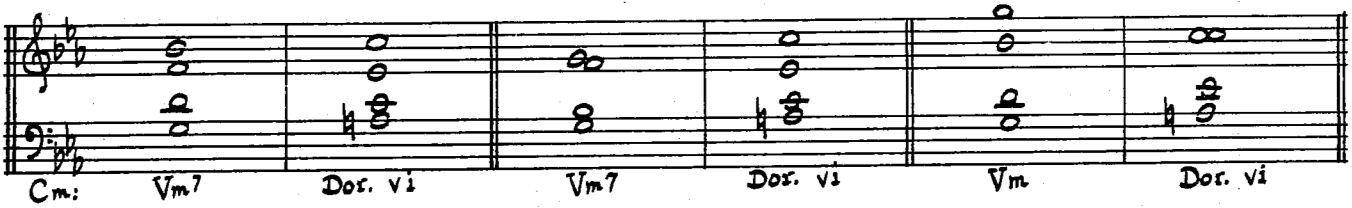
Tonal V (or V^7) - Dorian vi



Modal V (or Vmi^7) - Regular vi



Modal V (or Vmi^7) - Dorian vi



B. "V - IV"

Quality: Feeling of "resignation" - a "backwards" quality that is common to all "down a 2nd" progressions. (See next chapter.)

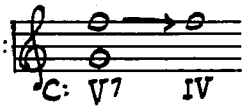
1. V - IV IN MAJOR

a. Vertical considerations

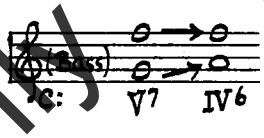
1. Structure of V and V^7 - Same as before.
2. Structure of IV (triad only for now) - Same as before.

b. Horizontal considerations

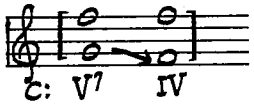
1. When V^7 is used before IV, the 7th will resolve "passively", as:



Therefore, IV must be in 1ST INVERSION (IV^6), as:



in order to avoid this:



which is a **false resolution** of the Minor 7th interval, and is **to be avoided.**

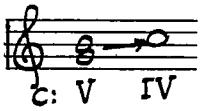
Therefore, while V TRIAD may move to ROOT POSITION IV, V^7 requires the 1ST INVERSION OF IV!

ROOT POSITION V TRIAD ——— ROOT POSITION IV

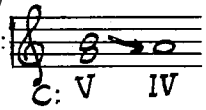
ROOT POSITION V^7 ——— IV^6

(*But* NOT: *Root Position* V^7 ——— *Root Position IV!*)

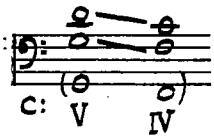
2. The 3rd of V (the leading-tone) may rise to the 5th of IV, as:



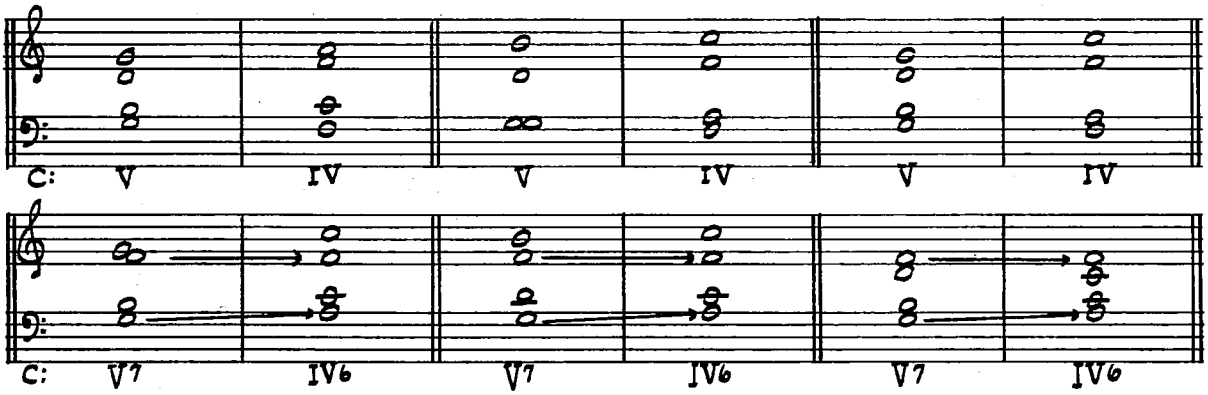
or, in some cases, may fall to the 3rd of IV, as:



3. Avoid parallel 5ths between the root and 5th of the chords:



Here are a few examples of V - IV and V^7 - IV^6 in major:



2. V - IV IN MINOR

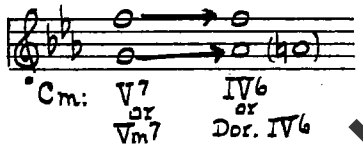
a. Vertical considerations

1. Regular (Tonal) and Irregular (Modal) V chords are available as triads or as 7th chords. Structures as before.

2. Regular and Irregular (Dorian) IV chords are available but as triads only for now. Structures as before.

b. Horizontal considerations

1. Similar to major, when V^7 is used, the 7th will resolve "passively" and the root will rise to the 3rd of IV, as:



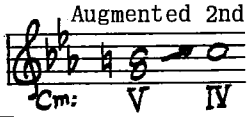
Therefore, the following arrangements of V - IV are available in minor:

Tonal V triad ——— Root Position IV or Dorian IV
Tonal V^7 ——— IV^6 or Dorian IV^6

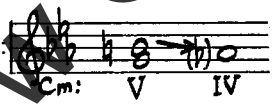
Modal V triad ——— Root Position IV or Dorian IV
Modal V^7 ——— IV^6 or Dorian IV^6

But NOT: *Root Position V^7 (or Vmi^7) ——— Root Position IV (or Dorian IV)!*

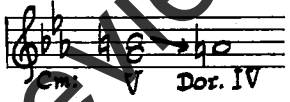
2. The 3rd of Tonal V (the leading tone) will rise to the 5th of IV, as:



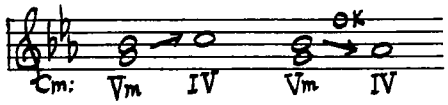
but it shouldn't fall to the 3rd of Regular IV, as:



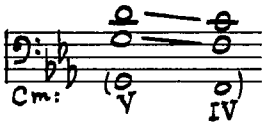
Possible: (backwards Musica Ficta)



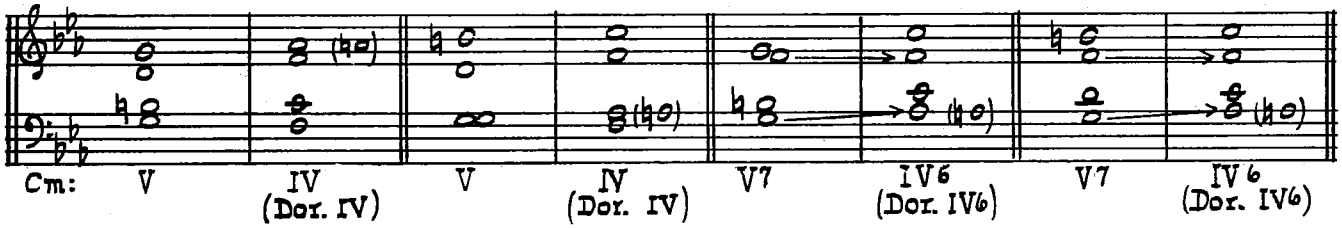
However, the 3rd of Modal V (the subtonic) may rise to the 5th of IV or sometimes fall to the 3rd, as:



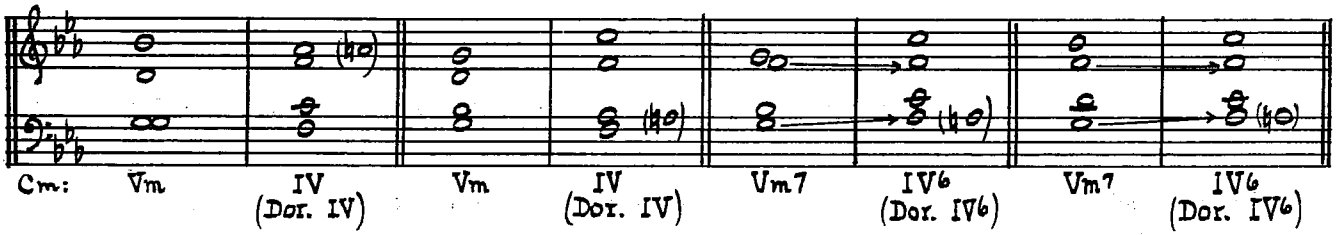
3. Avoid parallel 5ths between the root and 5th of the chords:



Here are a few examples of the various V - IV and V^7 - IV^6 possibilities in minor. In practice, the use of the Regular forms is most common.



Continued "V - IV" and "V^7 - IV^6" examples:



C. "V - ii"

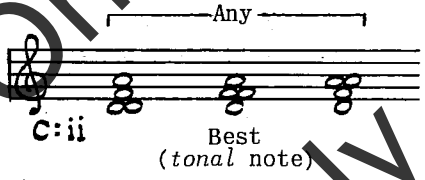
Similar to "V - IV" this is a "secondary" progression (See next chapter) and has a retrogressive (backwards) quality.

1. V - ii IN MAJOR

a. Vertical considerations

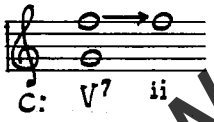
1. Structure of V and V^7 - Same as before.

2. Structure of ii (triad only for now):

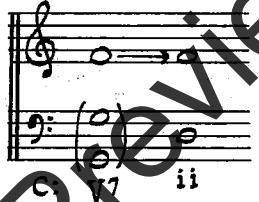


b. Horizontal considerations

1. When V^7 is used before ii, the 7th will resolve "passively" (to the 3rd of ii) as:

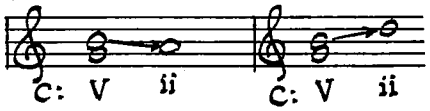


However, the root of V^7 may leap to the root of ii, as:

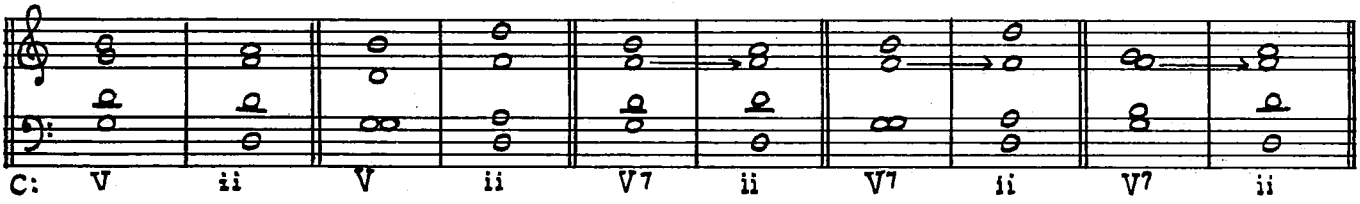


(This would not be regarded as an ideal treatment of a minor 7th interval in two part writing, but is quite acceptable in full harmony.)

2. The 3rd of V (the leading-tone) may either fall to the 5th of ii or leap up to the root of ii, as:



Here are a few examples of V - ii and V^7 - ii in major:

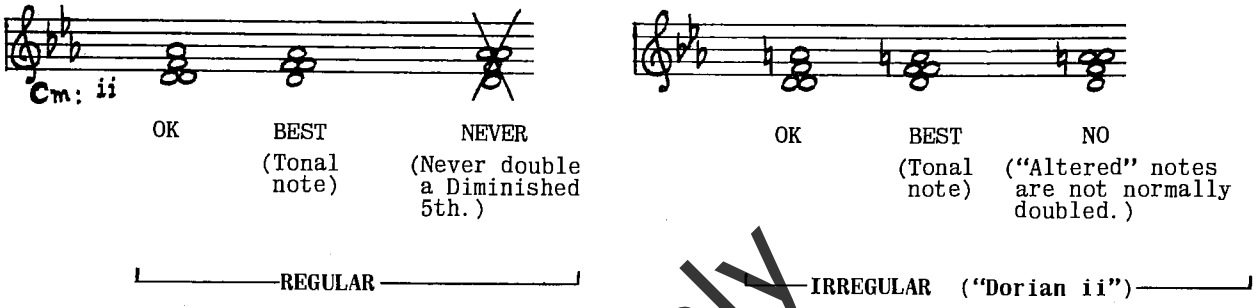


2. V - ii IN MINOR

a. Vertical considerations

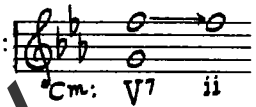
1. Regular (Tonal) and Irregular (Modal) V chords are available as triads or as 7th chords. Structures as before.

2. Structure of ii (two forms), triads only for now:

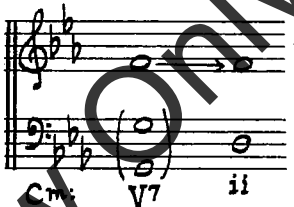


b. Horizontal considerations

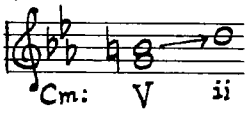
1. The 7th of V, when used, will resolve "passively" (to the 3rd of ii):



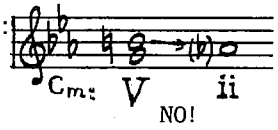
but the root of V may leap to the root of ii, as:



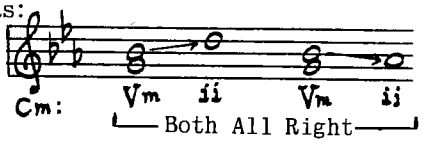
2. The Musica Ficta leading tone in Tonal V may leap up to the root of ii, as:



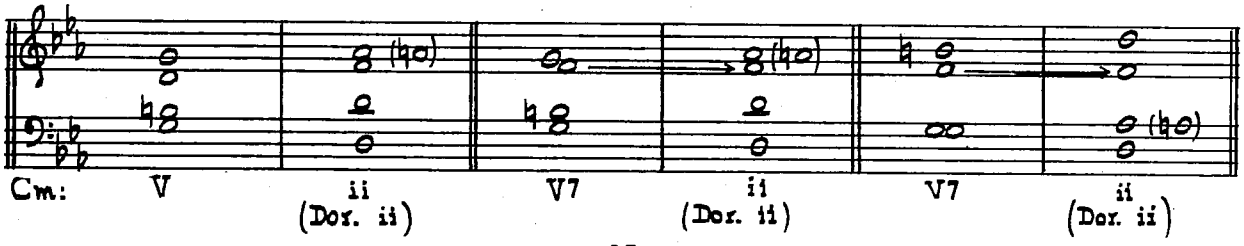
but it shouldn't fall to the 5th of Regular ii, as:



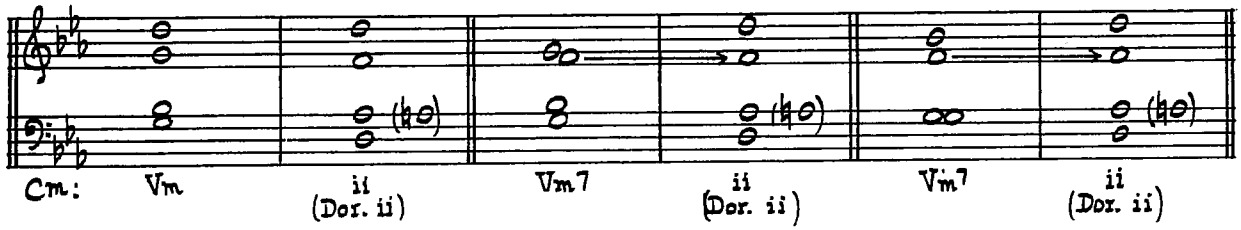
However, the 3rd of Modal V (the subtonic) enjoys more freedom.
It may leap up to the root of ii or fall to the 5th of ii, as:



Here are a few examples of V - ii in minor. In practice, the use of the Regular forms is most common.



Continued V - ii examples:



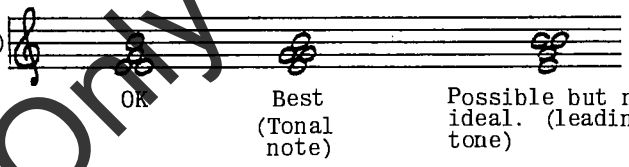
D. "V - iii"

1. V - iii IN MAJOR

a. Vertical considerations

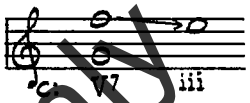
1. Structure of V and V^7 - Same as before.

2. Structure of iii: (triad only for now)

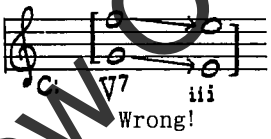


b. Horizontal considerations

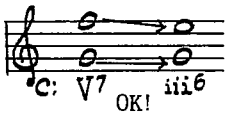
1. The 7th of V, when used, will fall to the root of iii, as:



Therefore, when V^7 is used do not move down to root position iii, because a "hidden octave from a dissonance (7th)" will result, such as:

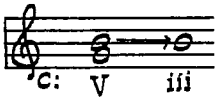


Solution: Use the 1st inversion of iii (iii^6), as:

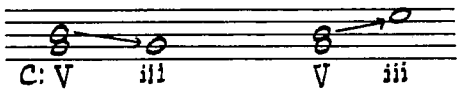


So, root position V TRIAD may move to root position iii, but root position V^7 will require the use of "iii^6"!

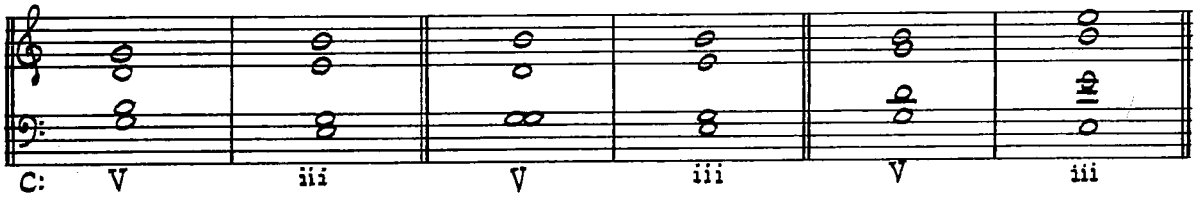
2. The 3rd of V (leading-tone) may simply remain to become the 5th of iii, as:



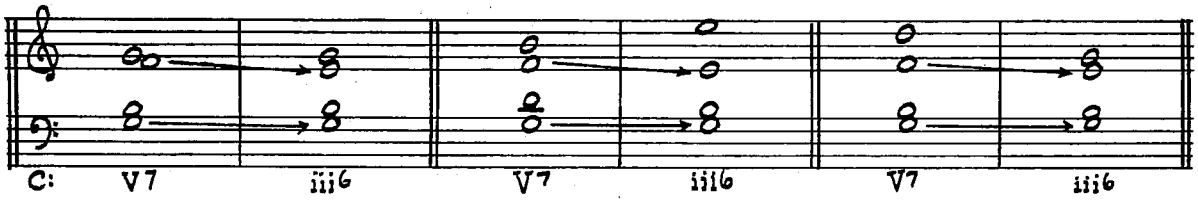
or it may leap, as:



Here are some examples of V - iii in major.



Continued V - iii examples: (Note that iii^6 is used following V^7.)

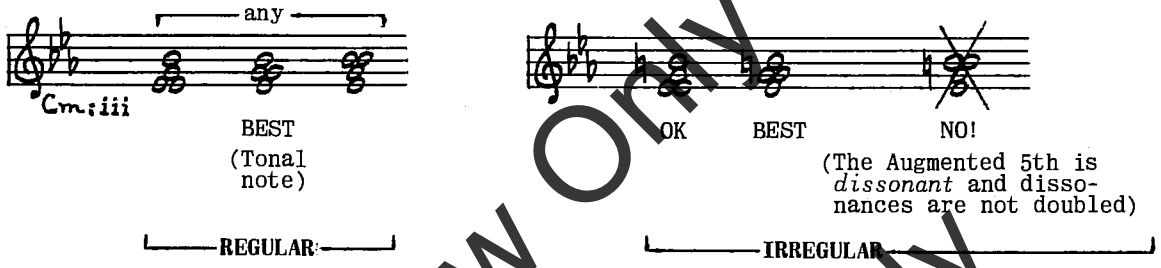


2. V - iii IN MINOR

a. Vertical considerations

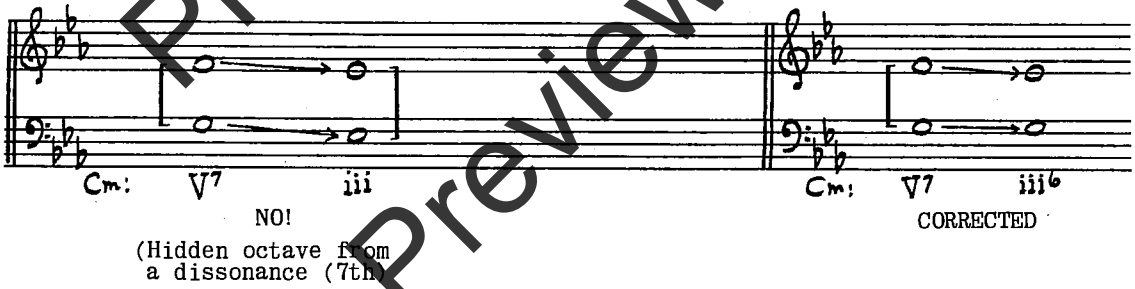
1. Two forms of V: **Tonal V** (and Tonal V^7)
   Modal V (and Modal V^7) —— Structures as before.

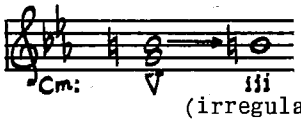
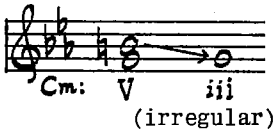
2. Two forms of iii:

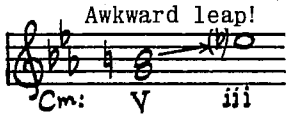
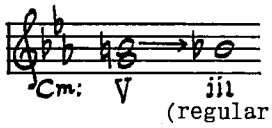


b. Horizontal considerations

1. As in major, Root Position V TRIAD may move to Root Position iii, but if V^7 is used, follow it with the 1st inversion of iii (iii^6):

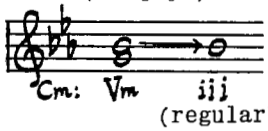


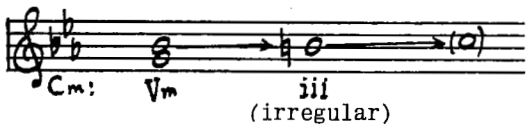
2. The Musica Ficta leading-tone of Tonal V will either remain to become the 5th of Irregular iii, as:  or leap to the 3rd of Irregular iii, as: 

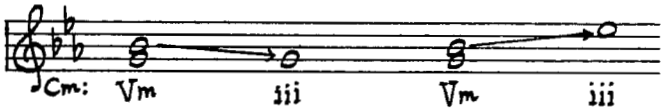
But not:  and probably not:  because this is not a

reasonable or logical use of the Musica Ficta leading-tone.

Therefore, it is inadvisable to follow Regular (Tonal) V with the Regular iii!

On the other hand, the 3rd of Modal V (the subtonic) enjoys, as always, more freedom. It may remain to become the 5th of Regular iii, as:  or rise chromatically to the

5th of Irregular iii, as: 

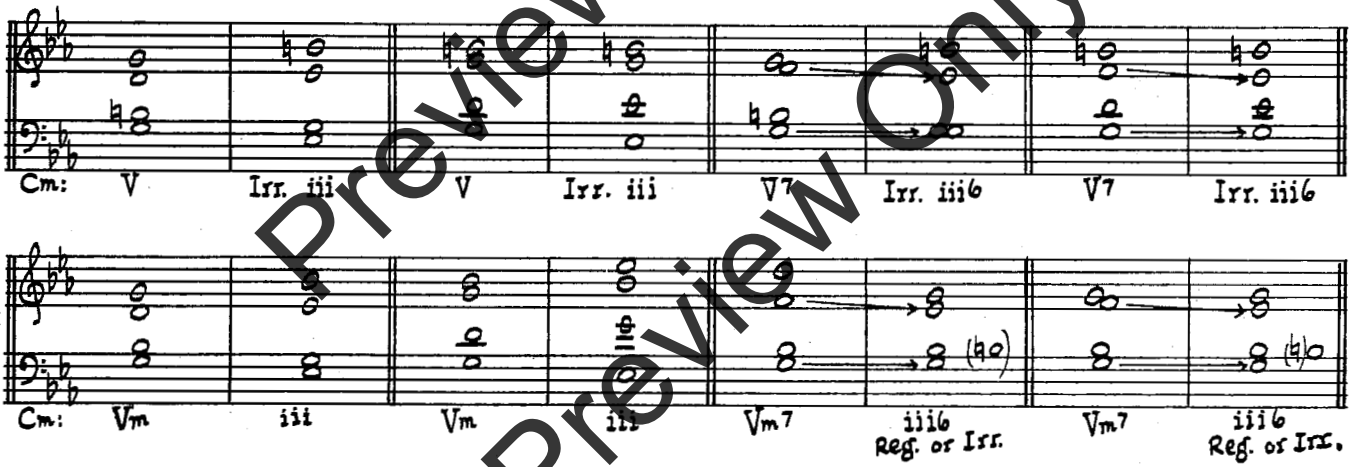
or it may leap, as: 

So, the following "V - iii" movements are available in minor:

Tonal V triad——Irregular iii (Root Position)
Tonal V^7——Irregular iii^6

Modal V triad——Regular or Irregular iii (Root Position)
Modal V^7——Regular or Irregular iii^6

Here are a few examples. (Note that iii^6 is used following V^7.)



ASSIGNMENT 20 (The Deceptive Cadences)

Note: Except where IV^6 and iii^6 are required, use ROOT POSITIONS ONLY.

1. In various major keys write sufficient examples of:

V (and V^7) - vi
V -- IV
V^7-- IV^6
V (and V^7) - ii
V -- iii
V^7-- iii^6

2. In various minor keys write sufficient examples of:

V - vi
- Tonal V (and V^7) / Modal V (and Vmi^7) → Regular vi
- Tonal V (and V^7) / Modal V (and Vmi^7) → Dorian vi

V - IV
- Tonal V / Modal V → Regular IV and Dorian IV
- Tonal V^7 / Modal V^7 → Regular IV^6 and Dorian IV^6

V - ii
- Tonal V (and V^7) / Modal V (and Vmi^7) → Regular ii
- Tonal V (and V^7) / Modal V (and Vmi^7) → Dorian ii

V - iii
- Tonal V ——— Irregular iii
- Tonal V^7 ——— Irregular iii^6
- Modal V ——— Regular and Irregular iii
- Modal V^7 ——— Regular iii^6 and Irregular iii^6

3. **The ear:** Develop the ability to hear the sound of the deceptive movements from V.

a. Note the "forward motion" in V - vi, and the particularly "Romantic" quality of the Regular V - vi in minor.
b. Note the "retrogressive" sound of V - IV and V - ii.
c. Note the "passive" sound of V - iii which, because of two common tones between the triads, lacks the element of contrast.

Chapter 6

A Basic Theory of
CHORD PROGRESSION

Introductory

"Any chord can move to any other chord" is probably the only flat statement that can be made about chord progression. Thus, any examination of chord progression can only be an attempt to narrow down the possibilities, and to establish a working basis.

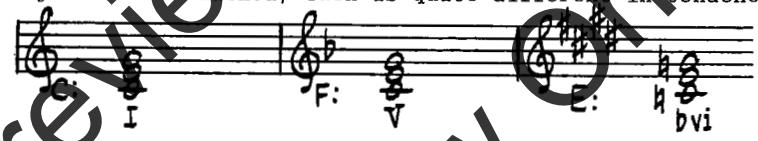
No written "theory" can be substituted for the ear. Ultimately, any chord movement must be understood by the ear and "How does it sound?" is the only true basis for judgment.

Normal chord movement is primarily a "linear" process. That is, a chord shows activity, or doesn't, according to the character of the **notes in the chord**. The notes are affected by:

a. Their relationship to one another.

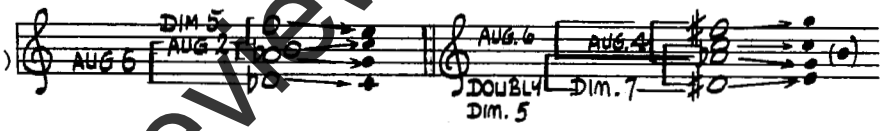
b. Their relationship to the established scale.

To illustrate: Each of the following is a theoretically "consonant" C major triad but, when the indicated keys are established, each is quite different in tendency and in emotional quality:

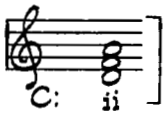


The tendency of chromatic chords which contain a number of **Harmonically Dissonant Intervals** is relatively easy to see and to hear. To illustrate:

(assume established key of C major)



A simpler chord often presents more of a problem. For instance:



To where?
Why?

The following text attempts to find at least a provisional answer to this question.

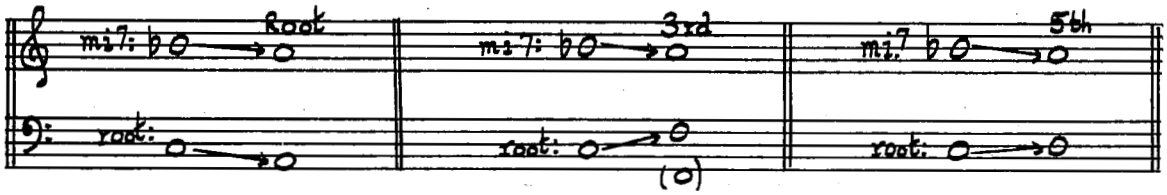
THE THEORY OF ROOT MOVEMENT

Root movements fall into two categories:

A. **Primary** root movements
B. **Secondary** root movements

The technical difference between them concerns the MINOR 7TH. The minor 7th is the most critical and influential note in chord progression, because it is the only "extension" that cannot be satisfactorily *resolved* on the same chord. It needs a new chord for its resolution.

The minor 7th tends naturally to *fall one step*. The Primary root movements allow it to step down to a consonance (i.e., the Root, 3rd, or 5th of the next chord). To illustrate:

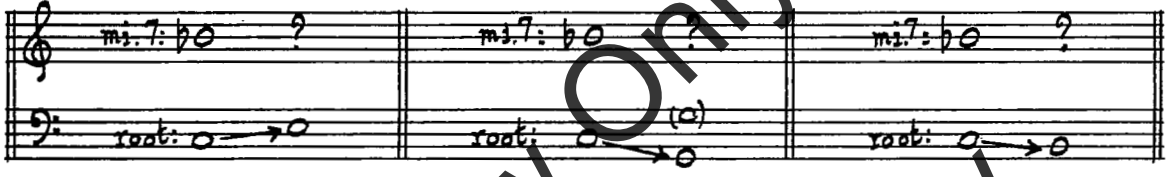


Root Movements: DOWN 3 (Hidden octave from dissonance not relevant here) UP 4 (Down 5) UP 2

So: The **Primary** root movements are:

UP 4
DOWN 3
UP 2

The remaining three root movements (there are only six) are called **Secondary**. They do NOT allow the critical minor 7th to fall one step to a consonance. To illustrate:



Root movements: UP 3 DOWN 4 (Up 5) DOWN 2

So: The **Secondary** root movements are:

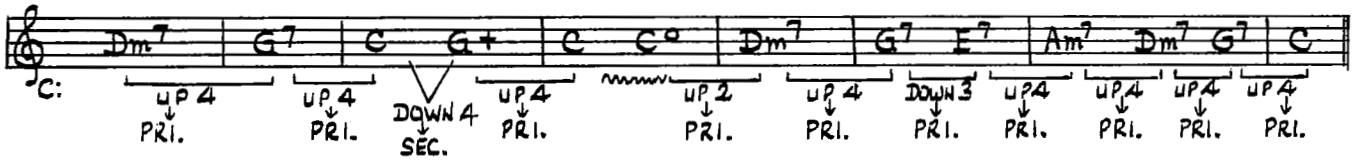
DOWN 4
UP 3
DOWN 2

The theory of root movement is intended to be a *provisional working principle* only. It is NOT the only consideration in chord progression. (For instance, the chromatic chords illustrated in the introductory notes to this chapter are motivated by the chromatically altered notes rather than from any consideration of root relationship.)

Nevertheless, it has been estimated that approximately 80% of the basic chord movements in Bach are PRIMARY. In contemporary popular harmony, Primary root movements account for an even higher percentage!

Here, to illustrate, is the chord pattern for a familiar standard melody. Note the PRIMARY root relationships:

"BODY AND SOUL"



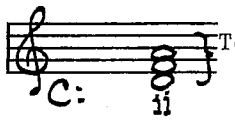
It is significant that the only Secondary progression above is *from the tonic chord.* In general, the tonic chord is removed from any consideration of root movement. **The "I" chord may go anywhere or nowhere!**

Some Observations:

PRIMARY PROGRESSIONS	SECONDARY PROGRESSIONS
Up 4 (Down 5) ◄———	———► Down 4 (Up 5)
The "strongest", most obvious, and most expected of all progressions. It has the implication of "Dominant to Tonic"; a movement *towards stability*. The "UP 4" is THE MOST COMMON OF ALL PROGRESSIONS!	The "strongest" of the Secondary progressions. It has the implication of "Tonic to Dominant", a movement *away from stability*. A retrogressive quality which is the emotional opposite to the Primary "Up 4".
Up 2 ◄———	———► Down 2
Great "contrast". All notes of the triad change. (Examine, for instance, V - vi.) It is not as *defined* a root movement as "Up 4", but it has a clear "forward motion".	Similar to the Primary "Up 2", the Secondary "Down 2" has much contrast, because all of the notes of the triad change. (Examine, for instance, V - IV.) It has a retrogressive quality, with a feeling of resignation, almost depression.
Down 3 ◄———	———► Up 3
Most "passive" of the Primary progressions. It has the least contrast, because only one note of the triad changes. Because of this lack of contrast, "Down 3" can sometimes be ineffective over a bar line (i.e., into a strong beat).	Similar to the Primary "Down 3", the Secondary "Up 3" is passive and lacks contrast, because only one note of the triad changes. It is often ineffective over a bar line. Not only does "Up 3" lack contrast, but it also has the retrogressive quality common to all Secondary root movements. The "Up 3" is THE LEAST USED OF ALL PROGRESSIONS!

The theory of root movement is based on the resolution of the minor 7th. The Primary root movements allow the minor 7th to fall one step to a consonance.

The question arises: If a chord is a TRIAD only, and doesn't contain a 7th, will the matter of Primary or Secondary root movement from it be of any consequence? In fact, our original question:

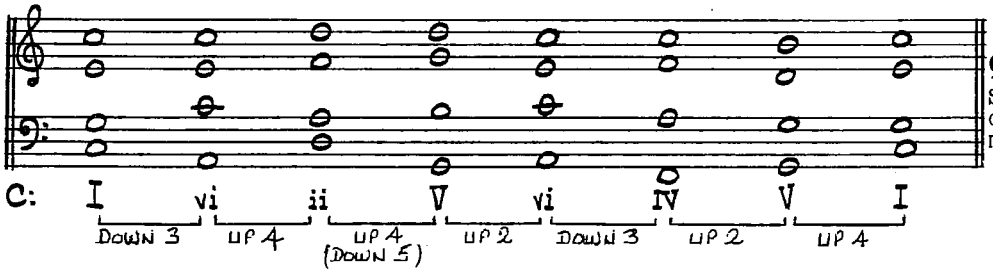


To where?
Why? hasn't been answered.

In an attempt to answer this question, and to draw some overall conclusions, herewith is a "psychological" analysis of Primary and Secondary root movements with both TRIADS and 7th CHORDS. Diatonic C major is used for example purposes, and the conclusions drawn are subjective:

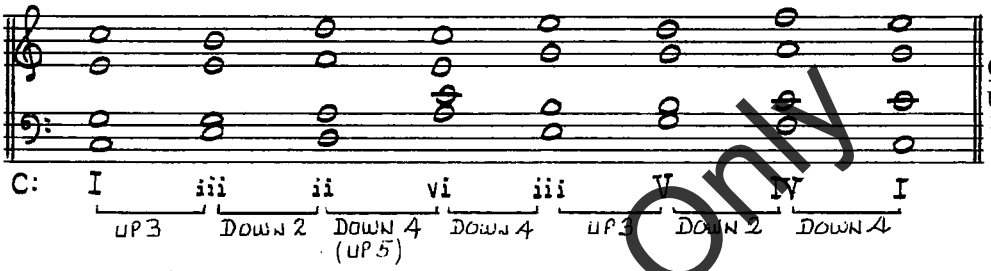
P L A Y!

A. **Triads** only, by **Primary** root movement:



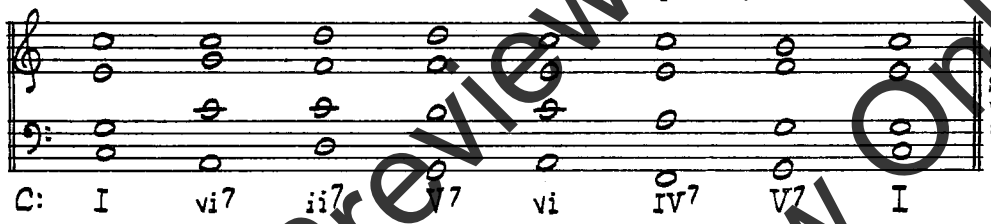
Conclusion:
Strong, clear, obvious, certain, forward motion.

B. **Triads** only, by **Secondary** root movement:



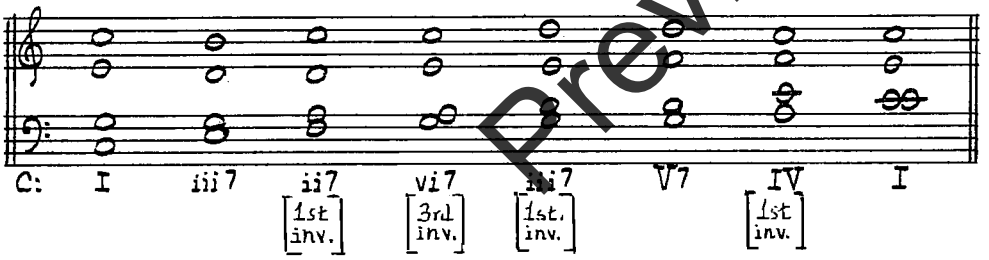
Conclusion:
Uncertain, vague, indecisive.

C. **7th chords**, by **Primary** root movement. (Same progression as Example A.)



Conclusion:
Similar to A., but with more density and energy.

D. **7th chords** by **Secondary** root movement. (Same progression as Example B., but some inversions are necessary in order to avoid grammatical errors. The inversions do NOT affect the actual root movement.)



Conclusion:
Somewhat confusing and frustrating, since the expected resolutions of the 7ths are continuously aborted.

Overall Conclusions

Primary root movements are satisfactory and reliable WITH TRIADS or WITH 7TH CHORDS. They provide "forward motion" and they move the harmony along smoothly and logically with a minimum of resistance. The jazz improviser will have no trouble with Primary progressions.

Primary root movements:

- **UP 4** (Down 5) - Defined forward motion. Most common root movement.
- **UP 2** - Most contrast of the Primary progressions.
- **Down 3** - Most "passive" of the Primary progressions.

Secondary root movements are less decisive, less certain, and more introspective. They are valuable for the mood they create, and also simply to "break up" the possible monotony of continuous Primary movements.

In general, however, Secondary root movements are *more effective with triads only.* When a 7th chord is left by Secondary movement, the 7th cannot receive its expected resolution. This tends to "trip" the progression and leads to a loss of forward motion. (This adverse result is more likely to be apparent in a succession of 7th chords by Secondary movement, as in the illustration, than it would be with only an occasional use.) The jazz improviser will tend to have more trouble with a passage of Secondary movements than he will with Primary movements.

Secondary root movements:

- **DOWN 4** (Up 5) - Clearest presentation of the Secondary feeling.
- **DOWN 2** - Contrast, with obvious "depression".
- **UP 3** - "Passive". Least common progression.

Although popular harmony does not make an extensive use of Secondary progressions, some of the better song writers have made effective use of them, in association with the lyrics, to summon feelings of longing, distance, unrequited love, loss of fantasy and dreamlike qualities. The "I - vi - iii" movement at the beginning of "Over the Rainbow" is an example, and contemporary popular songs seem to be making a wider use of Secondary progressions than do most "standards".

Perhaps the best example to illustrate the psychological difference between Primary and Secondary progressions is a comparison of the Primary "V - I" cadence (Up 4) with the Secondary "IV - I" cadence (Down 4):

Strong, certain

Humility? Faith?

ASSIGNMENT 21 (Theory of Chord Progression)

1. Learn the Primary and Secondary root movement.

2. Examine sheet music, lead sheets, or whatever else is at hand, to note the use of Primary and Secondary progressions. When the progression is Secondary, note whether it serves any "psychological" purpose.

3. Theories of chord progression differ, although most end up at roughly the same point. The theory presented here is only one approach. Look for others, through personal experimentation and through examination of other texts.

4. **The ear:** Become familiar, by playing the examples in the text, with the differences in quality between the Primary and Secondary root movements.

Chapter 7

Chord Progression In

DIATONIC IONIAN

Including:

I. THE PRIMARY CHORDS
II. THE ii AND vi CHORDS
III. THE 7TH CHORDS
IV. THE iii CHORD IN MAJOR
V. THE 1ST INVERSION
VI. THE USE OF AN INITIAL CHORD OTHER THAN "I"
VII. THE IRREGULAR RESOLUTIONS OF THE MINOR 7TH
VIII. CHANGE OF POSITION ("Arpeggiation")
Part 1: without irregular structures
Part 2: with irregular structures
IX. THE vii CHORD IN MAJOR

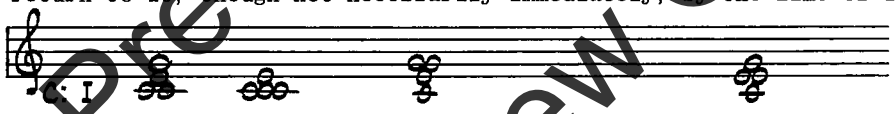
I. THE PRIMARY CHORDS (I, IV, V)

A. The Tonic Triad ("I")

"I" is distinguished by a feeling of security, repose, finality. It is the only fully consonant triad in music. It is almost always the final chord in tonal music and, more often than not, the initial chord.

As a triad, it places no demands. It may move to any other chord; the consideration of Primary or Secondary movement *from* the tonic chord is of no real concern. On leaving it, however, there is always an urge to return to it, though not necessarily immediately, by the line of least resistance.

Structure of I:



Best OK Occasional Irregular

Avoid the doubled 3rd on a final I, but if the voice leading in the body of a passage clearly demands this *doubled 3rd,* **use it!**

B. The Dominant Chord ("V")

"V" exhibits a *linear* tendency and a *root* tendency toward "I" and this is where it most often goes. This movement to I is called the **Dominant Function** and certain other chords which are sometimes used to substitute for V in a cadential approach to I (e.g., iii^6 - pg. 122, vii - pg. 144, etc.) are said to be performing the **Dominant Function.**

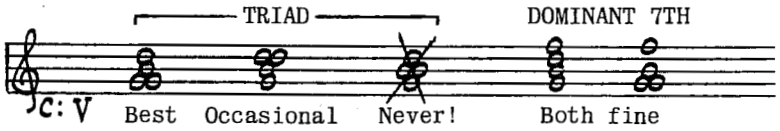
"V" is the traditional cadential approach chord to I and the movement of V to I is so expected that music theory has a special name for situations where the cadential V doesn't go to I! ("Deceptive Cadence"). Traditionally, the most common "deceptive" move from V is to vi, but all other movements are available.

The simplest harmonic "complete thought" or "tonal unit" in tonality is the formula:

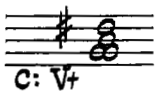
I ——— V ——— I
(Home) Chord which most easily and logically returns "home". (Home)

Very often a seemingly complicated progression will be nothing more than an elaboration or elongation of the "I - V - I" formula. (And the "A - B - A", statement - contrast - recapitulation, implication of the "I - V - I" pattern is the basis of the traditional three part ("ternary") form.)

Structure of V and V^7:



Also available:
(to lead to I)



C. The Subdominant Chord ("IV")

As earlier noted, any diatonic melody can be, and often is, harmonized with only the Primary chords.

Traditionally, IV has two main uses:

1. To lead, by Primary "up 2" movement, to V ("IV - V"). The use of IV to precede V is called the **Subdominant Function** and any other chord used to lead into V is said to be performing the Subdominant Function. The use of IV as an approach chord to V elongates the basic "I - V - I" formula into "I - IV - V - I". This is a strong and clear progression consisting of the Primary Chords moving by "Primary Root Movements". It underlies a great deal of classical harmony, and traditional music in all idioms has made extensive use of it.

2. To lead, by Secondary "down 4" movement (which is the most obviously "Secondary" of the Secondary progressions) to I. "IV - I" provides a valuable foil for, and contrast to, the Primary "V - I", and has always been used as such. "IV - I" forms the **Plagal Cadence** and the pattern "I - IV - I" can be called the **Plagal formula**.

Examine, and listen to, the following permutations of the Primary chords:

I - IV - V - I

Strong, defined, primary, - "forward motion"

I - V - IV - I

Strong primary chords in retrogressive "secondary" progression. Infrequent.

I - IV - I - V - I
Passive — Active

Eminently satisfying. Increase of energy. This pattern has enjoyed wide use and is, in fact, the pattern of the basic "blues" progression.

I - V - I - IV - I
Active — Passive

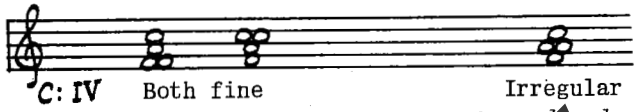
Loss of energy and forward motion. Less frequent.

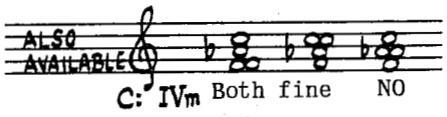
Although the current assignment will include only the Primary chords, the following observations will shortly be pertinent:

IV - ii - **Primary (down 3)**, but the two common tones between the triads result in a lack of contrast which may be unsatisfying over a bar line.

IV - iii - **Secondary (down 2)**. Retrogressive and has the quality of "depression" found in all "down 2" movements.

IV - vi - **Secondary (up 3)** also lacks contrast because of two common tones. "Up 3" movements are infrequent, and vi is the least likely chord to follow IV.





ASSIGNMENT 22 (The Primary Chords in Major)

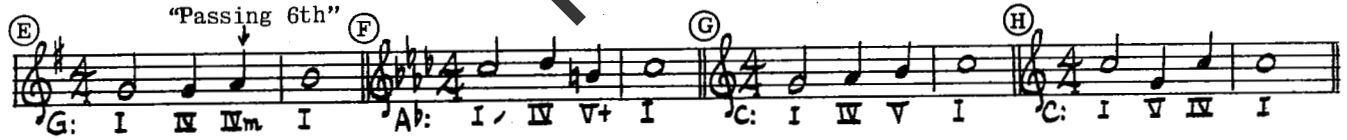
USE ROOT POSITIONS ONLY (unless "IV^6" is required from "V^7").

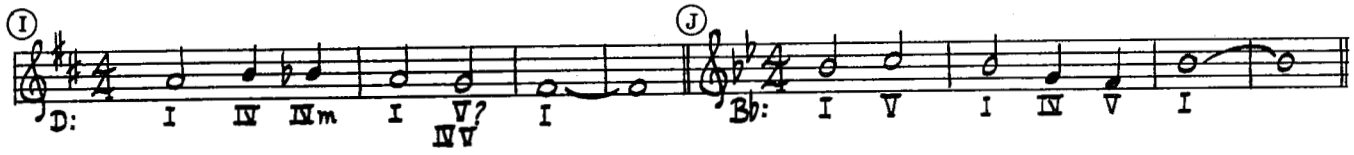
"I" and "IV" ARE TO BE TRIADS ONLY, BUT "V^7" IS AVAILABLE EVEN WHEN DIRECTIONS READ JUST "V".

1. Lead (soprano) given. Complete for four parts, directions as above.

*Use an "ABA" symmetry (i.e., voice the two "I" chords in the same way).

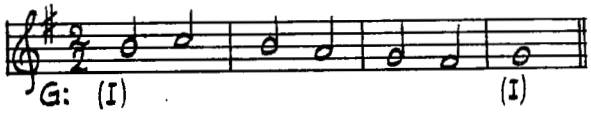
(See Sample Solutions page 191.)



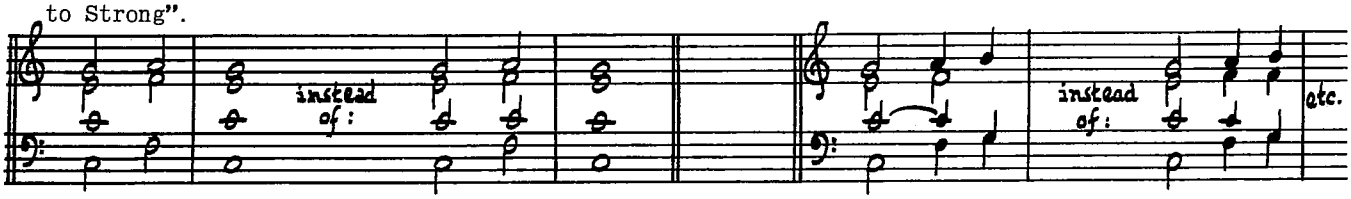


2. Lead only given. Complete for four parts using only Primary chords:

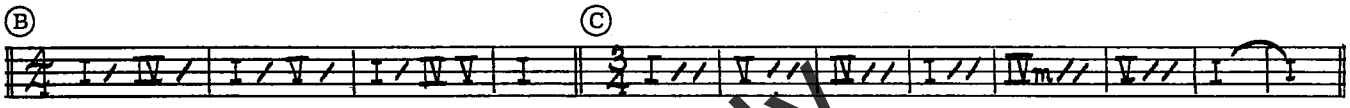
(See Sample Solutions page 191.)



3. Work the following progressions for four parts (as indicated on preceding page). Use no "arpeggiation", that is, no part is to move unless the chord changes. However, a note can be held through a change, rather than repeated, if the movement is from "Strong to Weak" or from "Strong to Strong".



Choose various major keys.



4. **The ear:** Endeavor to "hear" the work as you are doing it! Test it at the piano. Cultivate the ability to recognize the progressions involving the Primary chords. Locate familiar melodies that use the Primary chords in the underlying harmony, in arrangements such as:

"I - V - I" (Scores of familiar melodies use the pattern: "I - V - V - I" over four or eight bars.)

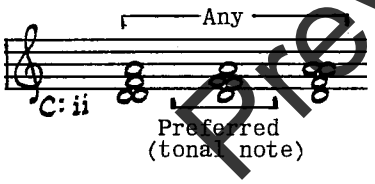
"I - IV - V - I" (e.g., "Little Brown Jug")

"I - IV - I - V - I" (e.g., "Battle Hymn of the Republic")

II. THE ii AND vi CHORDS IN MAJOR

A. The ii Chord

Structure: (triad)



Quality: Minor

Function:

1. The ii most often moves, by strong Primary "up 4" movement, to V. That is, it most often performs the "Subdominant Function". In fact, in popular harmony, the "ii - V" formula is considerably more common than "IV - V". (Perhaps because the minor quality of ii gives the formula a more romantic feeling than the bold major quality of "IV - V".) In any case, the IV and ii are pretty much interchangeable with respect to the Subdominant Function. Provided the voice leading is satisfactory, *don't hesitate to substitute "ii - V" for "IV - V", and vice versa.* Both formulas are "functionally" identical.

2. Further:

Primary "ii - iii" is excellent, with the contrast found in all "step" progressions. (At this point the iii chord is not available.)

Secondary "ii - vi" has the most obviously Secondary quality from ii. "Down 4" (up 5) movements always present the Secondary feeling most clearly.

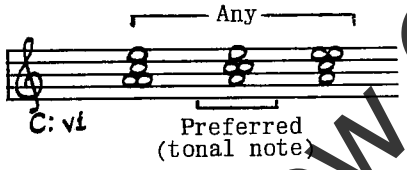
Secondary "ii - I" has a flavor similar to the Plagal "IV - I", with the feeling of resignation common to all "down 2" movements. The use of root position ii as a cadential approach to root position I is relatively infrequent.

Secondary "ii - IV" is the least likely move from ii. "Up 3", as well as having the retrogressive quality found in Secondary progressions, lacks contrast because of the two common tones between the triads. "ii - IV" is likely to be ineffective over a bar line.

Addendum: "ii - **IVmi**" is considerably more satisfactory and convincing, because there is only <u>one</u> common tone involved. Try it!

B. The vi Chord

Structure: (triad)



Quality: Minor. vi is the *Tonic Chord of the Related Minor.*

Function:

1. The vi most often moves by strong Primary "up 4" movement to ii. This leads to one of the most common formulas in popular diatonic harmony: "I - vi - ii - V - (I)".
   └pri.┘└pri.┘└pri.┘└pri.┘

   This formula, and variations of it, has been, and continues to be, *extensively used in the harmonic basis of popular songs.*

2. Further:

   Primary "vi - IV" is also frequent, but because of the two common tones involved, has less contrast than "vi - ii". ("vi - IVmi" would, of course, have more definition.) The frequent use of of vi as an approach chord to ii or to IV would suggest that it could reasonably be called a "Pre-Subdominant Function" chord.

   Secondary "vi - iii", the "down 4" (up 5) movement, has the most obviously Secondary feeling from vi. (See the beginning of "Over the Rainbow".)

   Secondary "vi - V" is the use of vi as a Subdominant Function chord (i.e., as an approach chord to V). This is not frequent in popular harmony, where "vi - ii - V" or "vi - IV - V" are more likely, but it is not infrequent in Bach. "vi - V" contains the contrast and the resigned quality common to "down 2" progressions.

   Secondary "vi - I" is the *least likely* move from vi. "Up 3" movements are not only Secondary but lack contrast. Consequently, an approach to the *strong* I chord from vi is rather unconvincing. In fact, "vi - I" is probably the *least used of all progressions!*

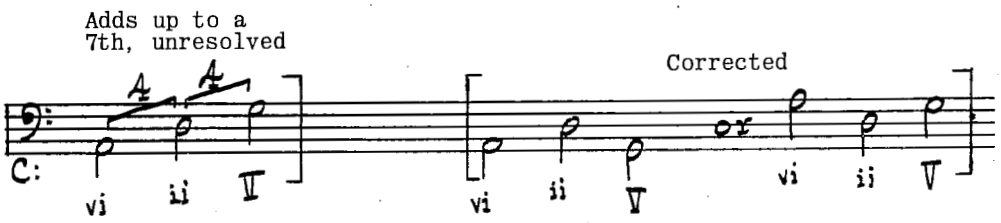
ASSIGNMENT 23 (Addition of ii & vi Chords in Major)

ROOT POSITIONS ONLY*

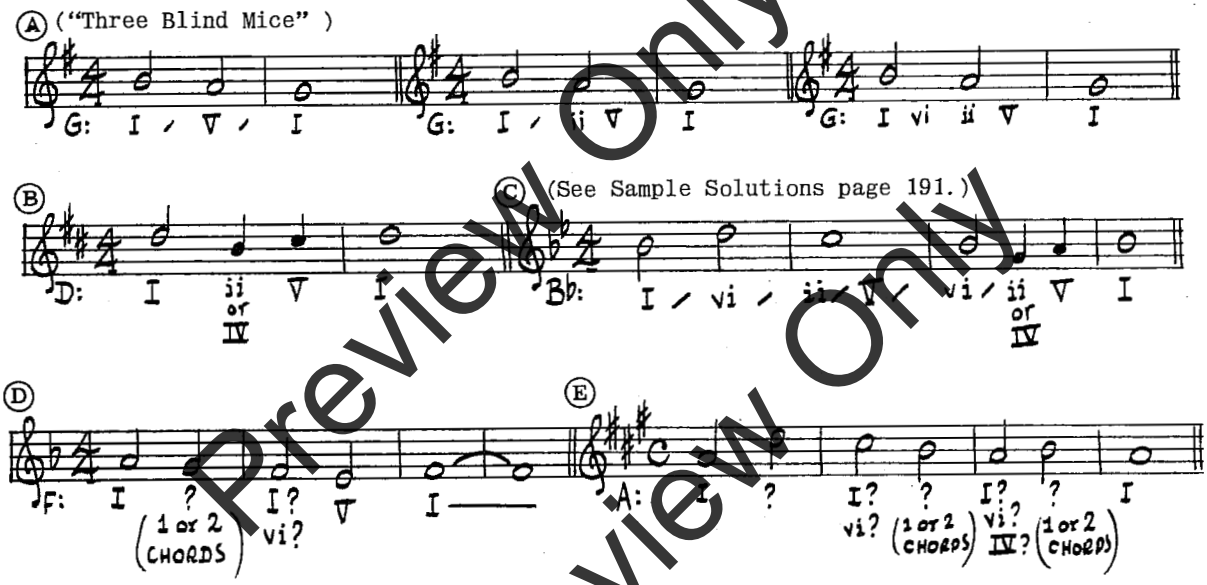
V^7 IS AVAILABLE, BUT ALL OTHER CHORDS ARE TO BE TRIADS ONLY.

NO "ARPEGGIATION"

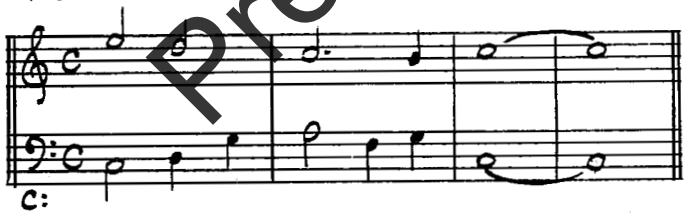
*Try to avoid two leaps of a 4th in the same direction in the Bass. To illustrate:



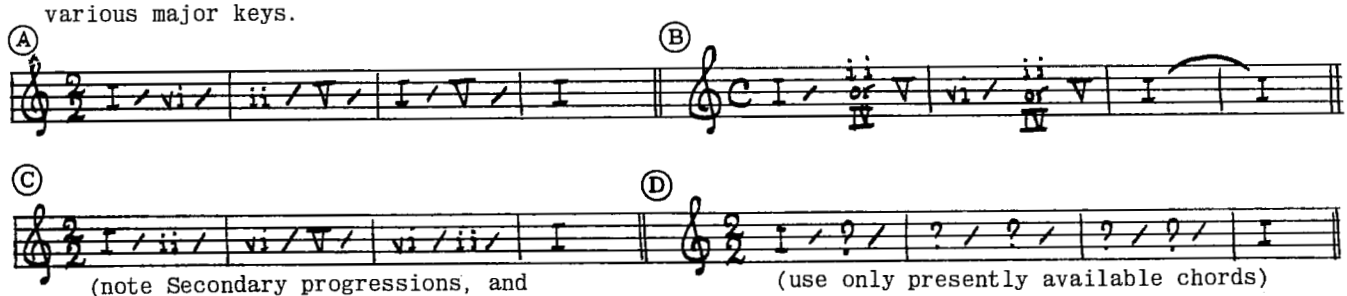
1. Lead (soprano) given. Complete for four parts, directions as above.



2. Soprano and Bass (roots) given. Add the inside parts:



3. Work the following for four parts, directions as above. Strive for a controlled, interesting, and graceful soprano line. (Examine notes on "The Soprano" in Chapter IV.) No arpeggiation. Choose various major keys.



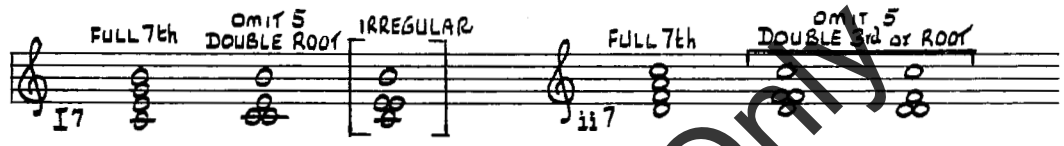
4. **The ear:** As always, strive to "hear" what you are writing, and test it at the piano. The ability to recognize the actual chord progression is the first requisite. The subtleties of the voice leading, and the grammatical principles, are refinements.

Locate familiar melodies which use the ii and vi chords in the underlying harmony. Note how often the "I - vi - ii - V" formula occurs. (e.g., "Blue Moon", "I Got Rhythm", etc. etc.)

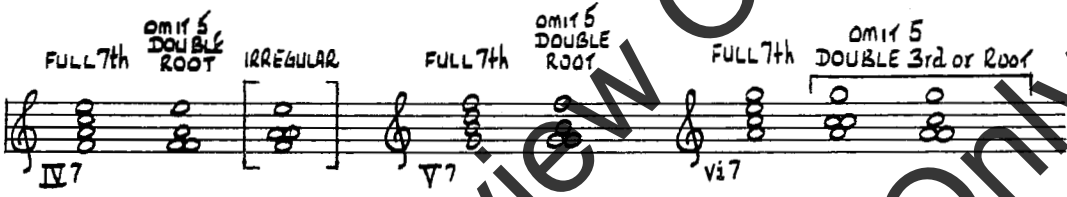
III. THE 7TH CHORDS (on I, ii, IV, V, and vi in Major)

Introductory:

The Structures: (key of C major)



iii^7 : see later text



vii^7 : see later text

Note: Chords with MAJOR 7ths - I^7 and IV^7 - have more *tension* than those with MINOR 7ths. ("Sharp dissonance" as opposed to "Mild dissonance".)

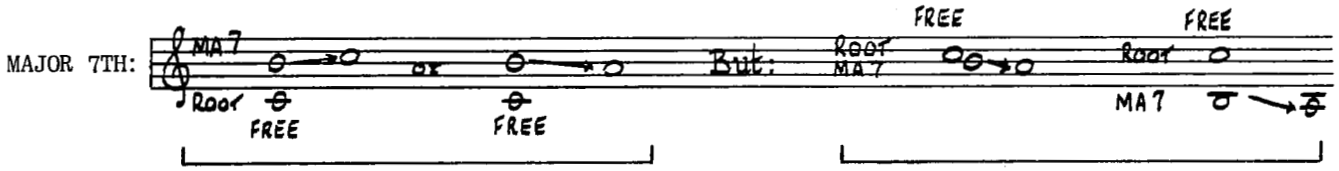
The regular resolution of 7ths should be familiar. Herewith is a brief review:

The minor 7th falls one step. Root is free.

USUAL! (Primary progressions)

The minor 7th remains passive.

Secondary progressions

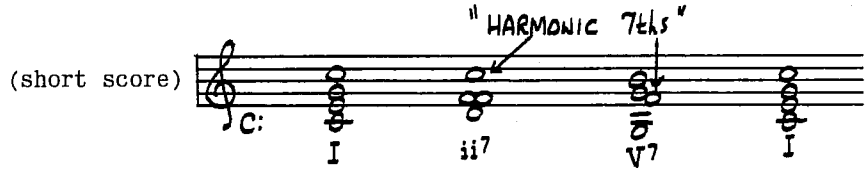


If the major 7th is *above* the root, it may *rise* or *fall* one step.

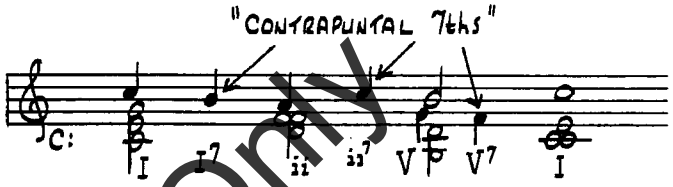
If there is a root *above* the major 7th, it *falls only*.

The 7th of the chord may be used in two main ways:

A. **The Harmonic 7th**: The chord is struck as a "7th chord", with the 7th used as a full member of the harmony, as:



B. **The Contrapuntal 7th**: The chord is initially struck as a TRIAD, and the 7th is introduced afterward in independent movement of one voice, such as:



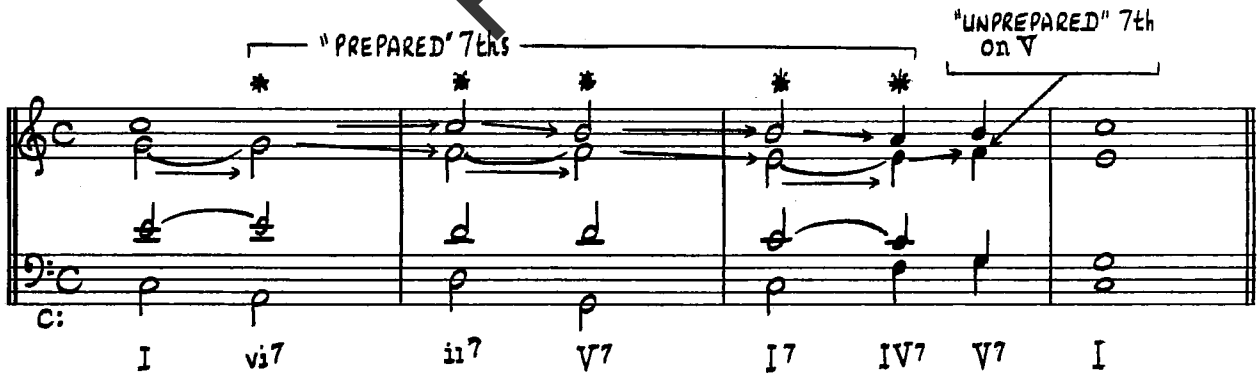
Each of these uses is examined in detail below. Historically, the Contrapuntal 7th occurred first, but this text will start with the Harmonic 7th.

A. The Harmonic 7th

Composers have shown, to varying degrees, a concern for the *approach* to the dissonant 7th, as well as a concern for its *resolution*. (This is on all chords except "V^7", which has enjoyed remarkable freedom of approach since about 1600!) As point "4" indicates (next page), modern practice places no severe restrictions on the approach to the 7th, but a little bit of historical perspective on its use can be valuable. Herewith is a more or less chronologically ordered survey of the evolution of attitudes toward the **Harmonic 7th**:

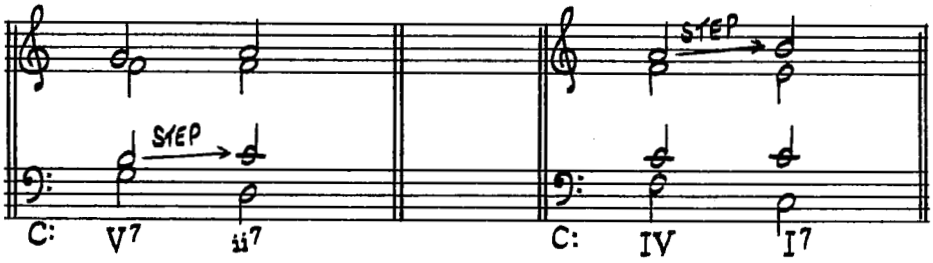
1. The "Prepared" 7th

A 7th chord is relatively commonplace to our ears. In fact, popular harmony is at a four note level more often than not, but to earlier musicians the 7th chord was a daring dissonance. Consequently, in order to minimize the impact, the 7th was taken by "common tone" from the preceding chord, in the same part. This is called **Preparation**, and the 7th is "eased in". To illustrate:



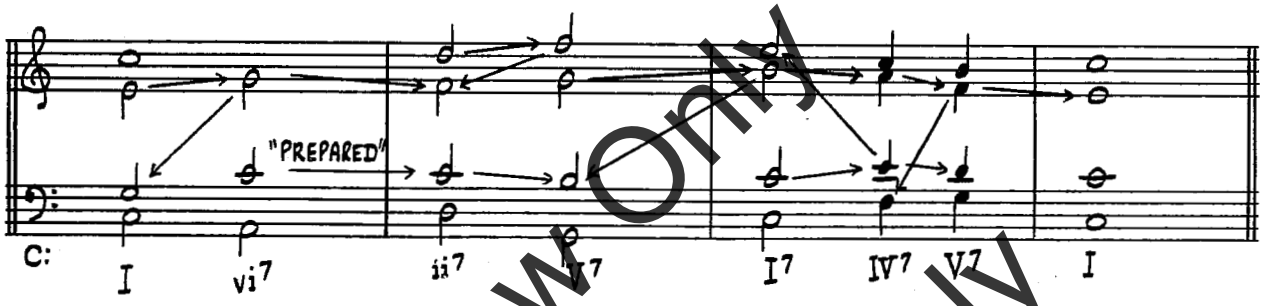
At one time, strict *preparation* of the 7ths in this manner was felt to be obligatory on all chords except V, but this is no longer the case. Nevertheless, it produces a very smooth and professional result!

2. Next, in order to allow 7ths from Secondary progressions, the 7th could be taken **by step.** To illustrate:



Not quite as *smooth* as the Prepared 7th, but quite inoffensive!

3. Next, the 7th could be taken **by leap**, provided the same note appeared SOMEWHERE in the previous chord. That is, it could be Prepared in a DIFFERENT PART. To illustrate:

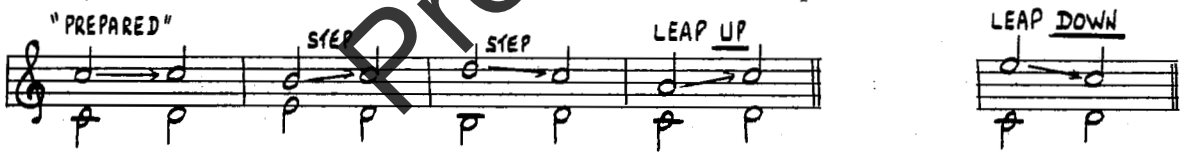


(This is the same chord progression as the example in "1." where the 7ths were *prepared* in the same part. It isn't quite as smooth.)

4. Finally, and this is the present attitude, 7ths may be approached in *any manner consistent with logical voice leading and the avoidance of awkwardness.* In the style being examined here, the preparation of a dissonance is not a major concern, *but the resolution of it is!*

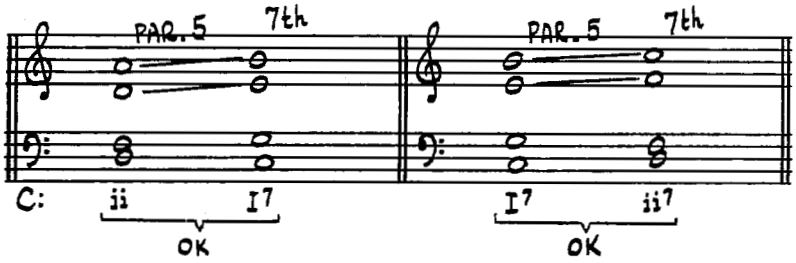
Nevertheless, there would be no point in *avoiding* preparation if the situation allows it! In accordance with the principle that it is better, when leaping, to leap DOWN to "UP" notes and UP to "DOWN" notes, **it is better to leap UP to a minor 7th. Try to avoid leaping down to one.** To illustrate:

Any one of these: is preferable to:



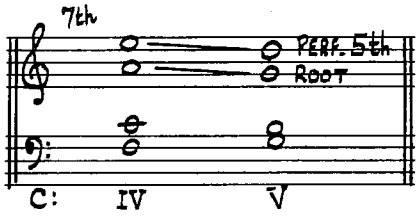
An important note relating to parallel 5ths in 7th chords.

IF ONE OF THE NOTES OF THE **SECOND** 5TH IS A 7TH (or any other dissonance) THE PARALLEL 5TH IS **ENTIRELY ACCEPTABLE.** To illustrate:



It is generally felt, however, that if the FIRST 5th contains a 7th, but the SECOND 5th is the root and 5th of the chord, the parallel 5th IS objectionable.

Example:



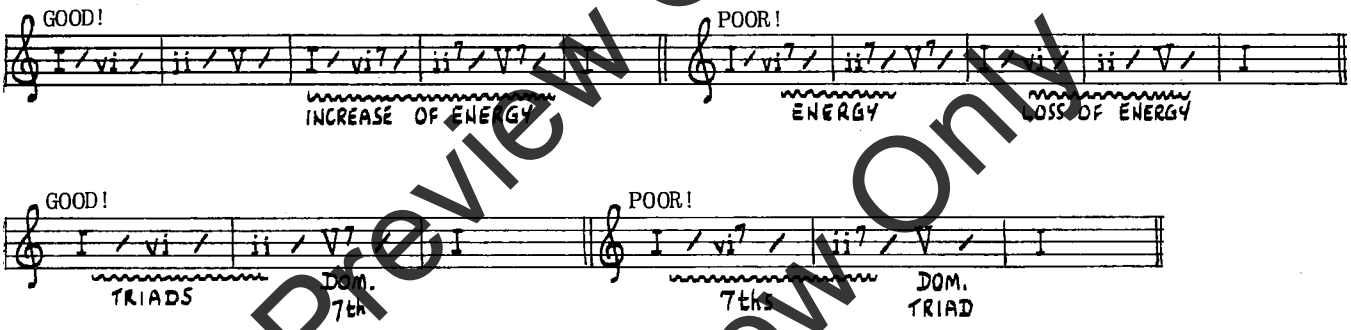
Not universally accepted!

You may find that a parallel 5th created by a 7th in the FIRST 5th (as in example above) *is unavoidable*, except by clumsy or awkward voice leading. If such a case exists, it may be used provided:

1. You are AWARE of it, and
2. There is no reasonable alternative.

It is called a **"PRACTICAL PARALLEL 5TH"** - a handy term which shouldn't be abused!

In conclusion, try to avoid an uneven texture or too much loss of forward motion. For instance:



ASSIGNMENT 24 (Harmonic 7ths)

Introductory:

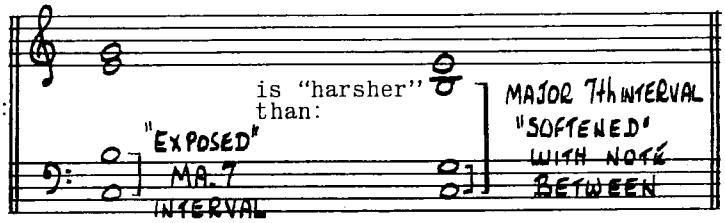
ROOT POSITIONS ONLY.

TAKE UTMOST CARE TO RESOLVE ALL 7THS PROPERLY, CREATING NO GRAMMATICAL ERRORS.

NOTE THAT THE USE OF 7THS IN THE CHORDS CREATES ADDED DENSITY AND INCREASES "FORWARD MOTION".

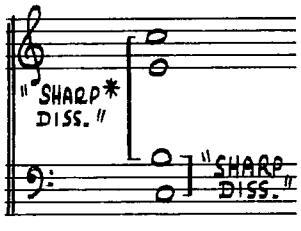
NOTE THAT SOME VOICINGS OF A MAJOR 7TH CHORD CAN BE RATHER "HARSH". To illustrate:

This:



is "harsher" than:

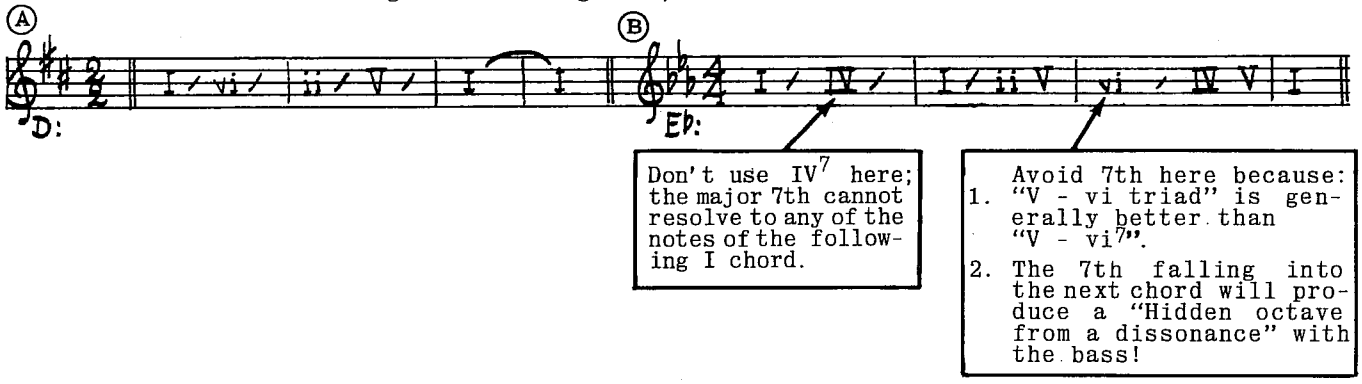
This is particularly harsh:



*(A chord with only one "sharp dissonance" in it will be more biting than a chord containing only "mild dissonance", and the above voicing has TWO sharp dissonances!)

(The above illustrations are observations only, not "directions".)

1. Work the following progressions for four parts. Use Prepared 7th chords where possible. (7ths are not indicated in the given chord figures.)

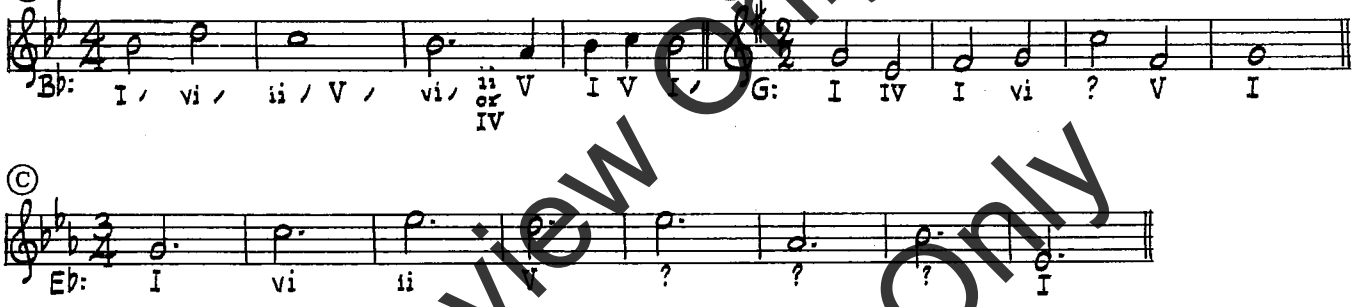


Don't use IV^7 here; the major 7th cannot resolve to any of the notes of the following I chord.

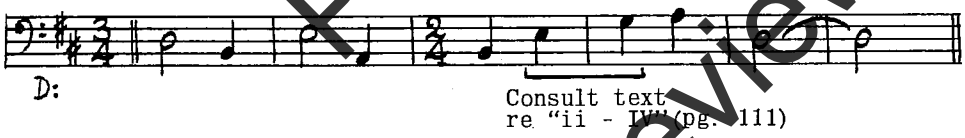
Avoid 7th here because:
1. "V - vi triad" is generally better than "V - vi^7".
2. The 7th falling into the next chord will produce a "Hidden octave from a dissonance" with the bass!

2. Lead given. Complete for four parts, using some Harmonic 7ths - *prepared* where possible but not necessarily so. Try to avoid *leaping* DOWN to a minor 7th! (7ths are not indicated in the given chord figures.)

Ⓐ (See Sample Solutions page 192.)



3. Bass only given (roots). Add the upper parts and make some use of 7th chords, *prepared* and *unprepared*. As always, strive for a well-shaped soprano line: (See Sample Solutions page 192.)



Consult text re "ii - IV" (pg. 111)

4. Work out a logical eight bar progression in whole notes, half notes, or a rhythmically sound combination thereof. Use a full cadence at the seventh or eighth bar and a "half-cadence" at the end of the fourth bar. Use root positions only.

5. **The ear:** Develop the ability to hear the sound of the 7th chords and their resolutions.

B. The Contrapuntal 7th

Proposition:

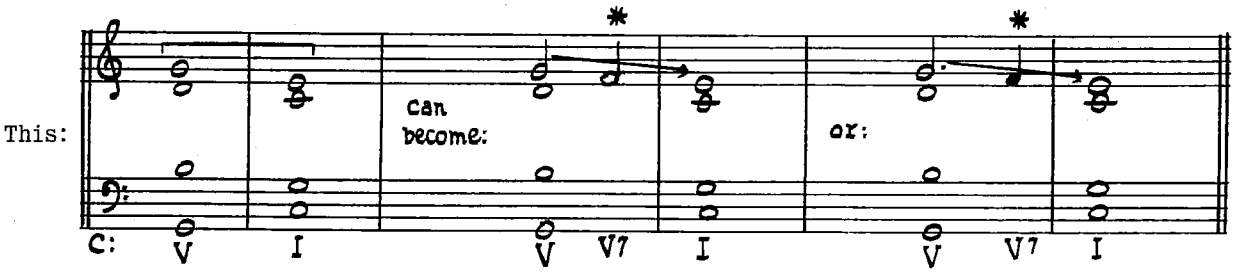
The chord may be struck initially as a **triad**, with the 7th introduced afterward in independent (i.e., **contrapuntal**) movement of one voice.

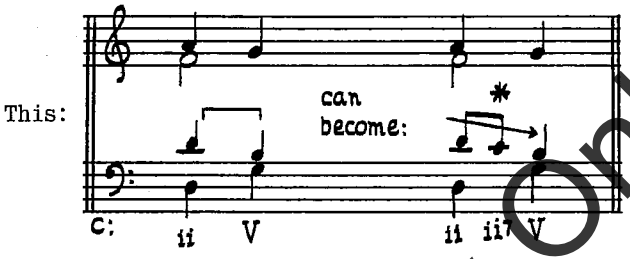
The **Contrapuntal 7th** is used in two ways:
1. **The Passing 7th** (more common)
2. Taken **by leap** from another note of the chord.

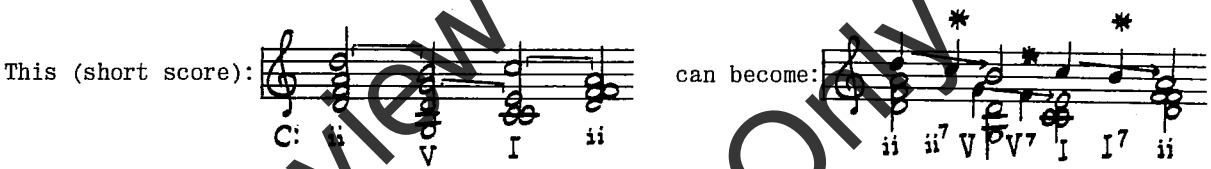
Both forms of CONTRAPUNTAL 7TH occur at a WEAK beat or FRACTION OF A BEAT!

1. The Passing 7th

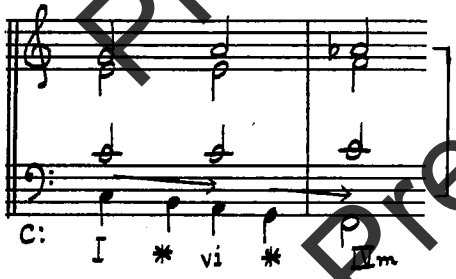
The 7th is used as a "passing tone" at a weak beat or fraction of a beat, between the root of the chord and a note *lying a 3rd below it in the next chord, in the same part.* To illustrate:







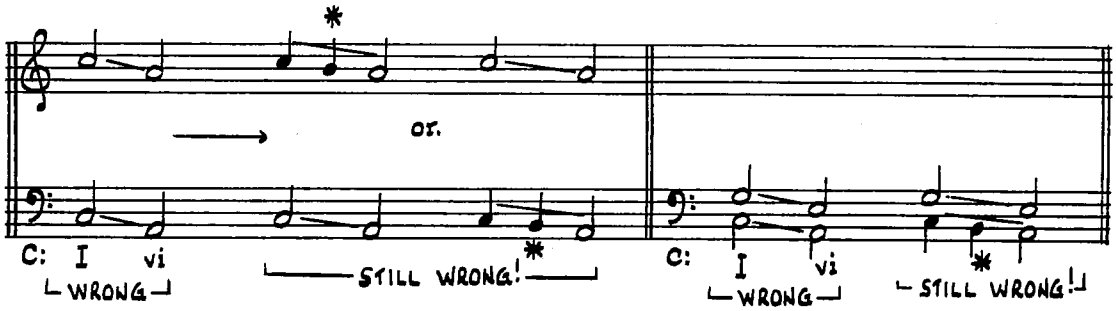
If the situation allows a Passing 7th in the BASS, you may use it, as:



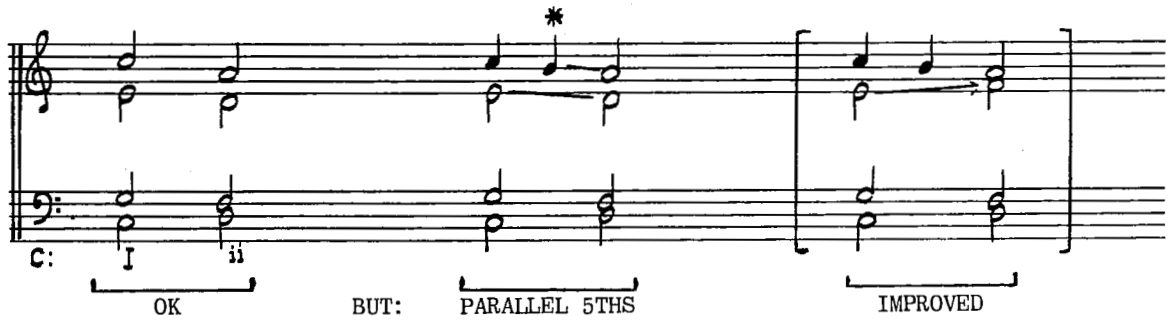
This is *not* meant to be taken as a freedom to use 3rd inversions; only a Passing 7th in the bass, if and when it is practical.

CAUTIONS:

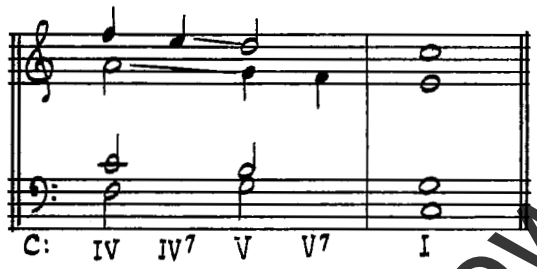
a. THE PASSING 7TH WILL NOT CONCEAL FORBIDDEN PARALLELS!



b. THE PASSING 7TH MAY CREATE PARALLEL 5THS WHERE NONE EXISTED WITHOUT IT!



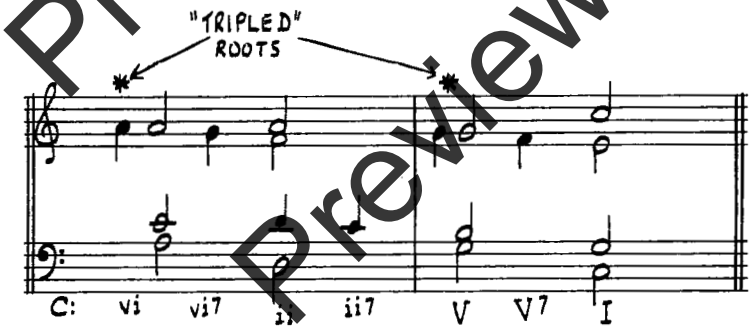
Occasionally, parallel 5ths created by a Passing 7th *may be unavoidable*. If so, they may be acceptable as "Practical" parallel 5ths *provided you are aware of them* and *provided there is no reasonable alternative*. To illustrate:



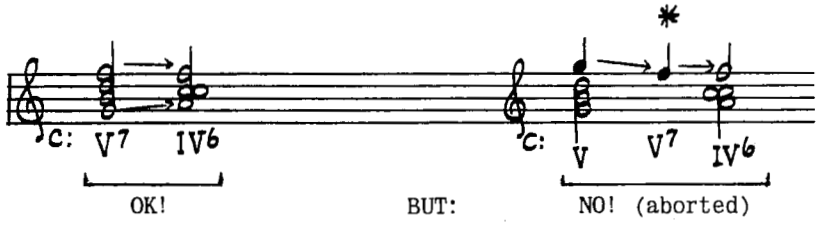
REASONABLE, "Practical" parallel 5ths.

(With this soprano and bass, no other graceful alternative exists.)

c. IT MAY OCCASIONALLY BE NECESSARY TO TRIPLE A ROOT IN ORDER TO USE A PASSING 7TH. THIS IS ACCEPTABLE. To illustrate:



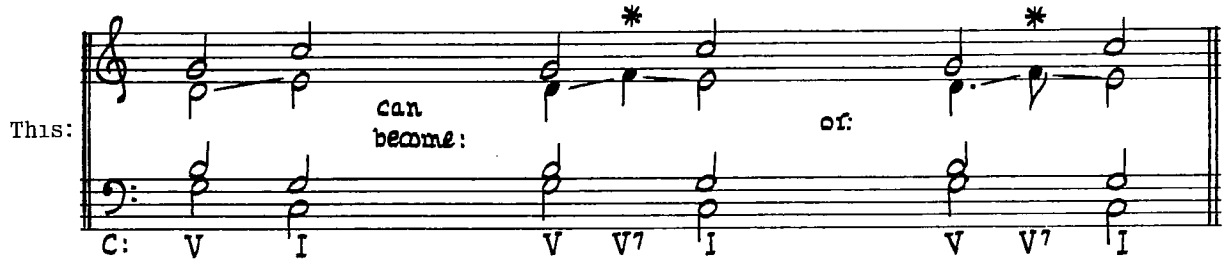
d. Finally, DO NOT USE A PASSIVE RESOLUTION OF A PASSING 7TH. It results in an "aborted" quality which frustrates the forward motion. To illustrate:

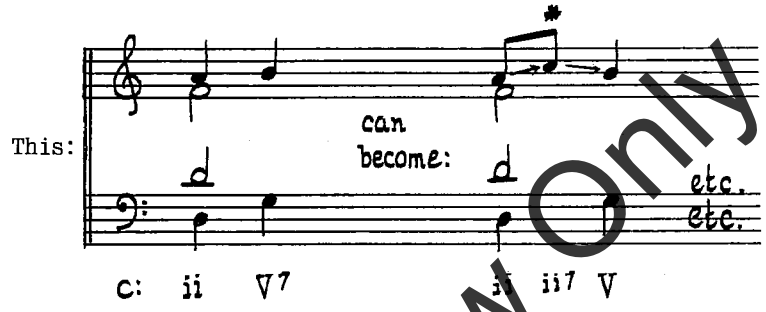


Clearly then, the use of a Passing 7th is best confined to PRIMARY progressions.
(i.e., progressions where the 7th is able to fall one step.)

2. The Contrapuntal 7th taken by leap.

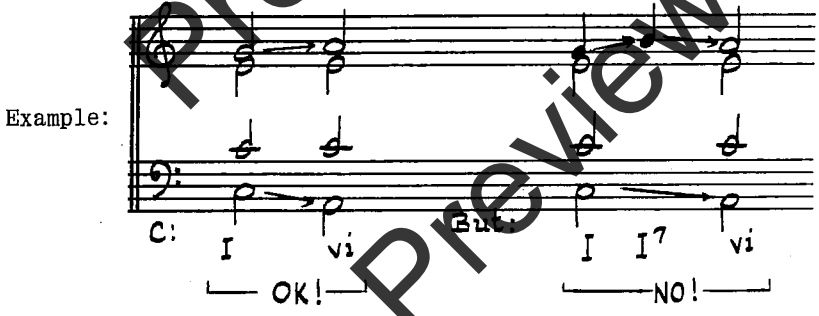
The 7th is taken by leap, at a weak beat or fraction of a beat, from another note of the same chord. Usually this is done by a leap up from the 5th. To illustrate:



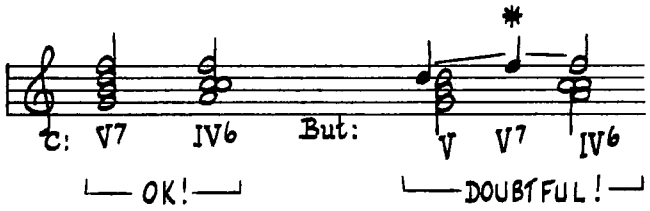


CAUTIONS:

a. AVOID CREATING A "HIDDEN OCTAVE FROM A DISSONANCE":

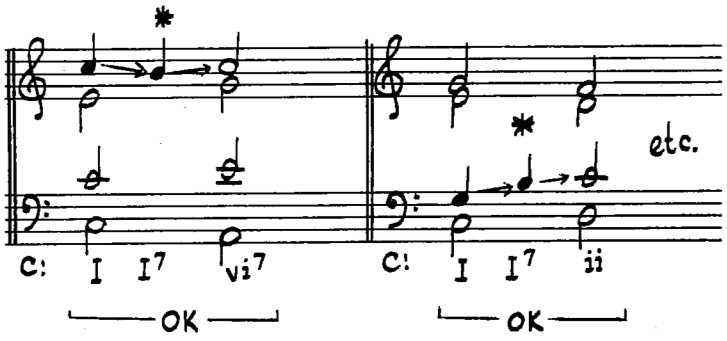


b. Similar to a Passing 7th, this form of Contrapuntal 7th is brought individually to the attention of the listener. Consequently, a Passive resolution of it will sound "aborted" and may be unsatisfactory. It is better to confine its use to Primary progressions, where it can resolve normally. To illustrate:

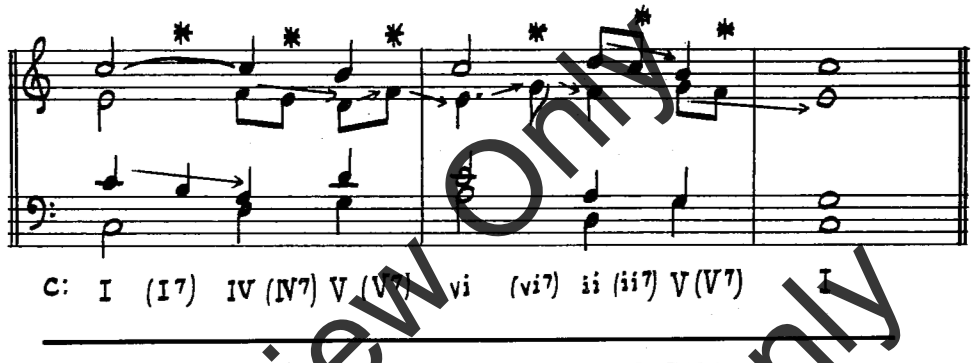


c. Finally, since a MAJOR 7TH can resolve by rising one step - *provided it stands <u>above</u> the root* - it is occasionally possible to use a *rising* Contrapuntal MAJOR 7TH.

Example:



Here is an example illustrating uses of the Contrapuntal 7th:



ASSIGNMENT 25 (Contrapuntal 7th)

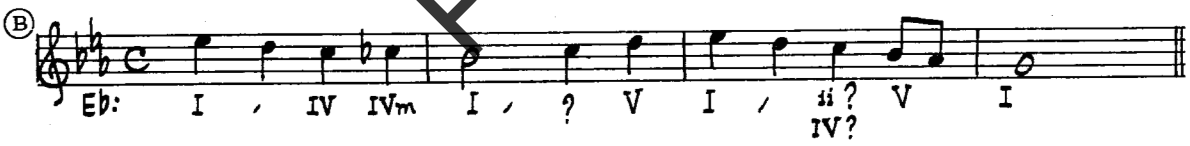
ROOT POSITIONS ONLY (Except if Passing 7th is used in the bass.)

1. Soprano lines given. Complete for four parts, noting the use of Contrapuntal 7ths. Try, also, to use examples of Contrapuntal 7ths other than those in the given soprano:

Ⓐ

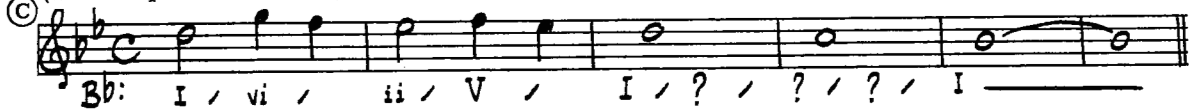
("Imperfect" cadence)

Ⓑ



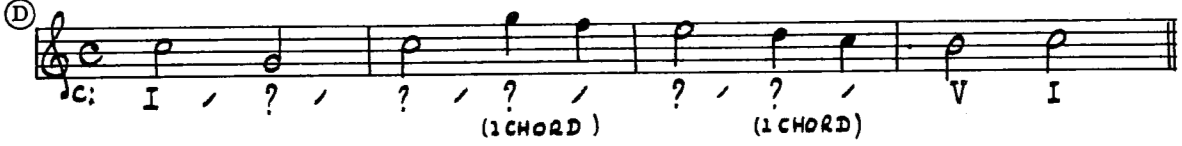
(See Sample Solutions page 192.)

Ⓒ



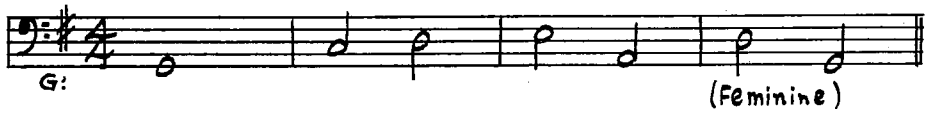
("Feminine" cadence)

Ⓓ



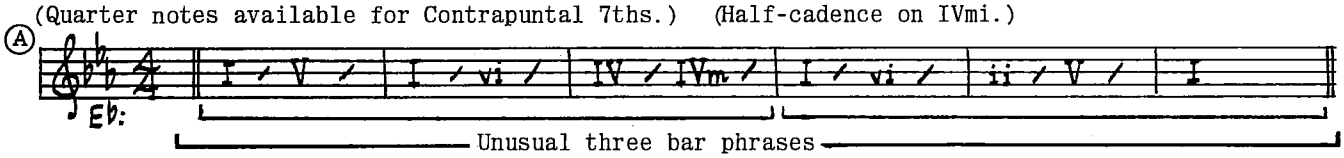
2. Bass only given (roots). Add the upper parts. Contrapuntal and Harmonic 7ths available.

(Quarter notes available for Contrapuntal 7ths.) (See Sample Solutions page 192.)

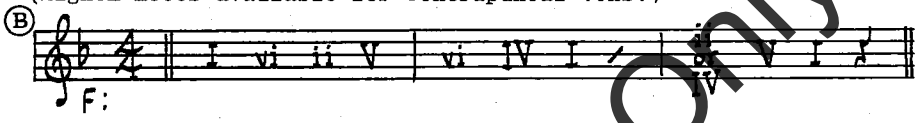


3. Progressions are given. Work for four parts, root position. Use examples of Contrapuntal 7ths in any and all parts. (Harmonic 7ths are also available.)

(Quarter notes available for Contrapuntal 7ths.) (Half-cadence on IVmi.)



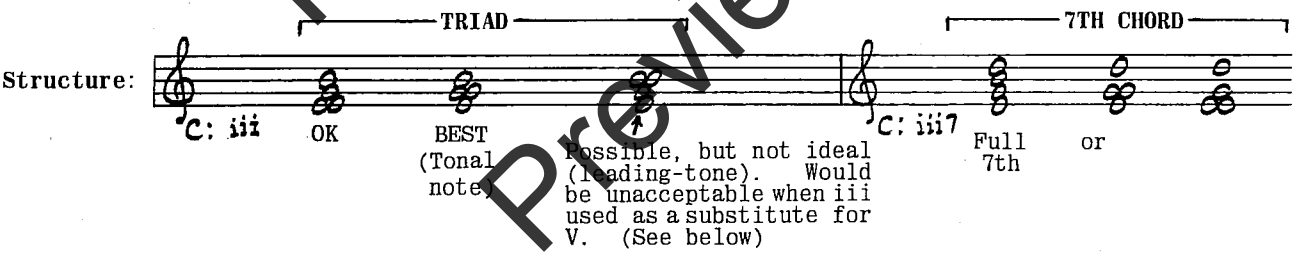
(Eighth notes available for Contrapuntal 7ths.)



4. Compose an eight bar sentence within the present limits and restrictions.

5. **The ear:** Note the difference between the "melodic" activity of the Contrapuntal 7ths and the "harmonic" density of the harmonic 7ths. Each clearly serves a different purpose.

IV. THE iii CHORD IN MAJOR



Quality: MINOR, but often "ambiguous".

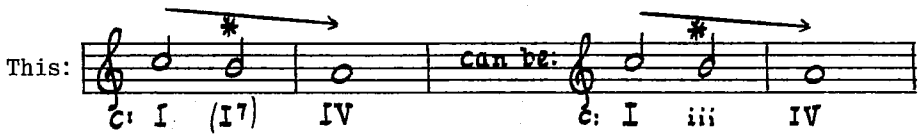
The iii often lacks a real character of its own, because of its similarity to the two main chords of the key: I and V. (Observe the fact that it has two "common tones" with both the I and the V chords.) It is significant that two important uses of iii trade on its similarity to I and to V.

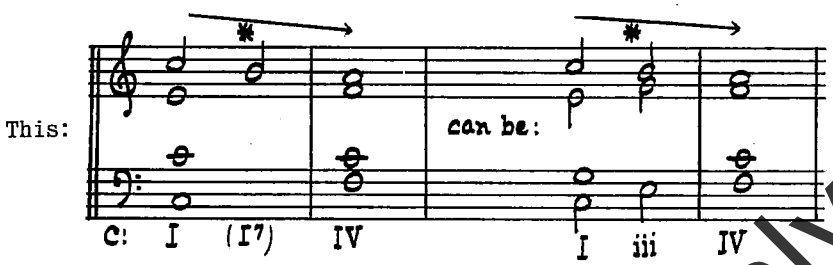
Functions:

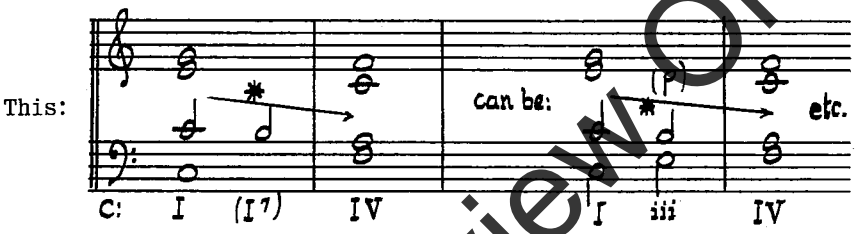
a. (Trading on its similarity to "I".)

Proposition:

The iii may be used as a softer, less tense variant of "I with a Passing 7th", usually between I and IV. The 5th of iii acts as the 7th of I. To illustrate:





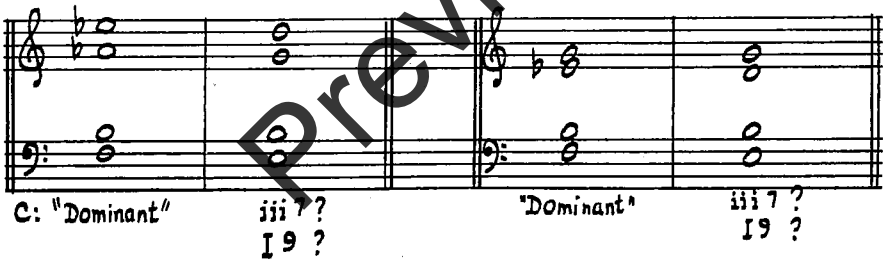


(From time to time popular songs have appeared which use the 5th of iii in essentially this manner. "I'll Be With You in Apple Blossom Time" is such an example.)

Addendum for later reference. (See text on 9th chords, Volume II.)

If "iii^7" is used where "I" is expected, it will sound like "I^9".

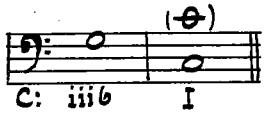
Example:



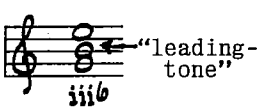
b. (Trading on its similarity to "V".)

Proposition: (requiring the use of a 1st inversion - a complete examination of which is undertaken in the next section of this chapter)

The iii^6 (i.e., iii in 1st inversion) may be used to perform the *Dominant Function*. That is, it may substitute for V as a cadential approach to I. The "dominant - tonic" bass which results:

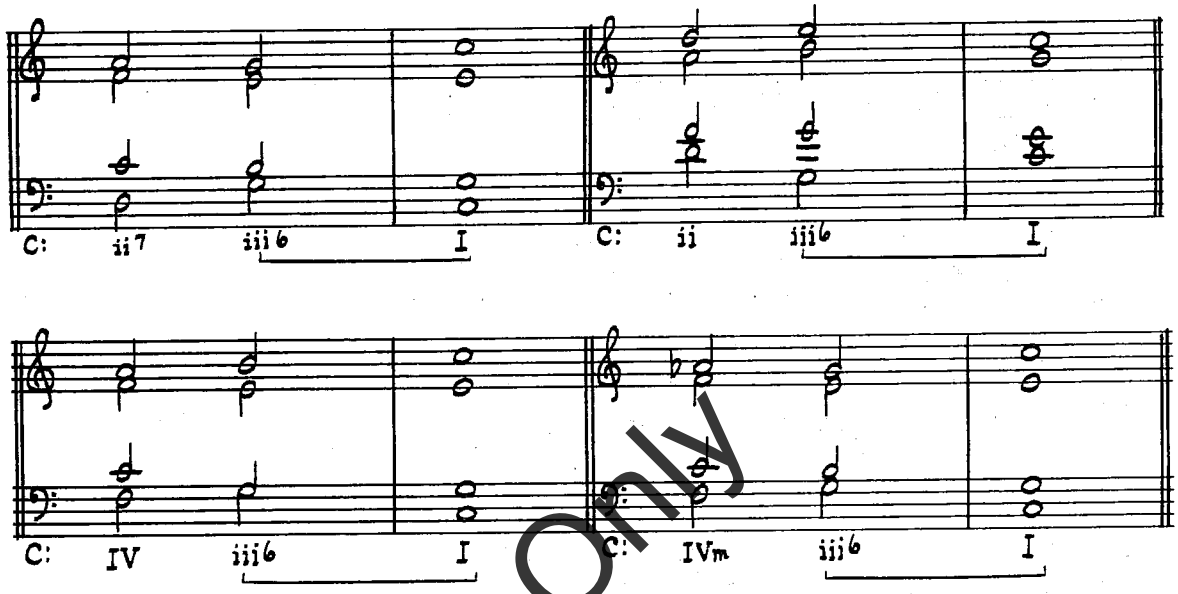


plus the presence of the "leading-tone" in iii:



gives the "iii^6 - I" movement a "V - I" quality. Furthermore, it is customary to double the 3rd of iii (the dominant) in this situation, which emphasizes the dominant quality in iii^6.

Examine the following representative examples. You will note that they are LESS energetic or more "pastel" than "V - I". Popular and jazz harmony, which generally favors MORE energetic substitutes for V (e.g., "♭ii^{+6}" in Volume II) has not made much use of the "iii^{6} - I" cadence.



c. Certainly iii may be used as a chord in its own right, subject only to the principles of logical voice leading and progression.

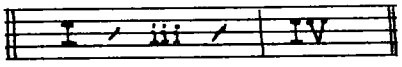
Primary from iii

UP 1:	"iii - vi"	-	strong, clear
UP 2:	"iii - IV"	-	strong, contrasting
DOWN 3:	"iii - I"	-	USUALLY "iii^{6} - I" (See point b.)

Secondary from iii

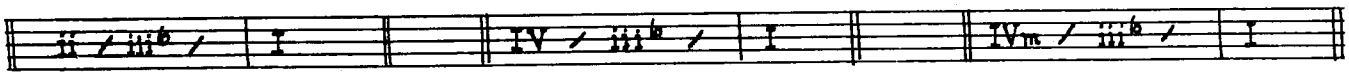
DOWN 2:	"iii - ii"	-	contrasting, resigned
UP 3:	"iii - V"	-	least convincing (as always, "up 3" progressions are the least likely.)

ASSIGNMENT 26 (The iii Chord in Major)

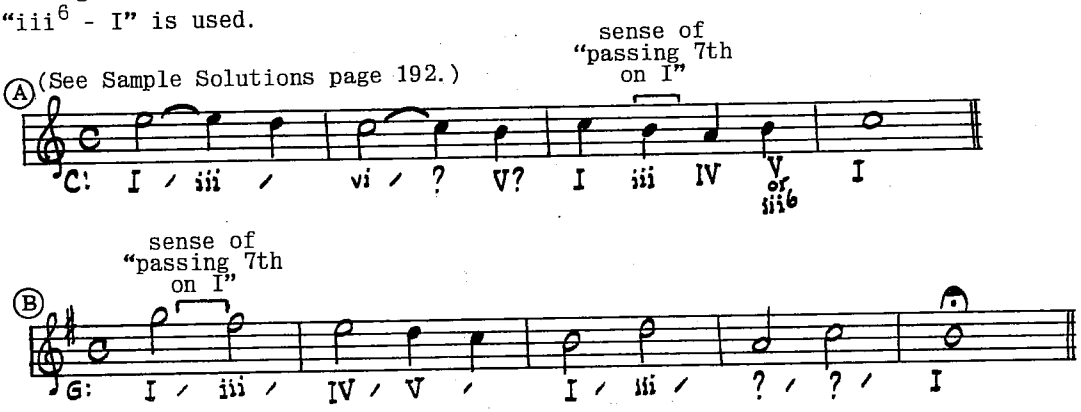
1. Write the formula: 

in a few major keys, using the 5th of iii in the sense of a "Passing 7th on I" - not necessarily in the soprano.

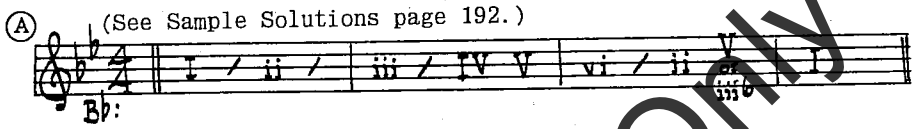
2. Work out a couple of examples for each of the following, showing the use of iii^{6} as a cadential substitute for V:



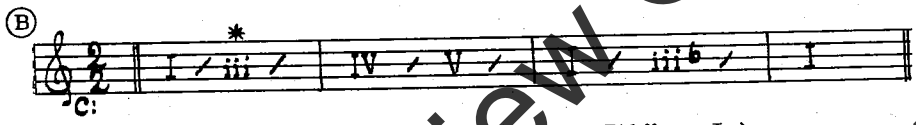
3. Lead given. Complete for four parts, noting the use of iii. Root positions only, except if "iii^6 - I" is used.



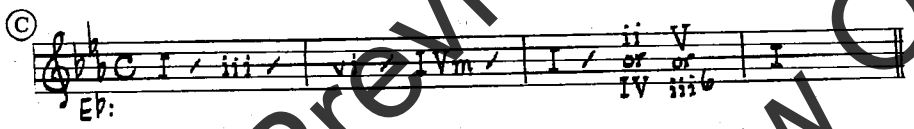
4. Progressions given. Work out for four parts, noting the use of iii. Root positions only, except if "iii^6 - I" is used.



(Avoid parallel octaves and 5ths! Wise to use a generally descending soprano against the ascending steps in the bass!)



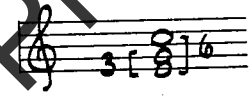
(Use the 5th of iii in the sense of "passing 7th" on I.)



5. Locate examples of the use of iii in the harmonies of standard melodies.

V. THE 1ST INVERSION

With respect to a "figured bass", a 1st inversion is called a "6" chord, a "sixth" chord, or a "chord of the sixth". Example:

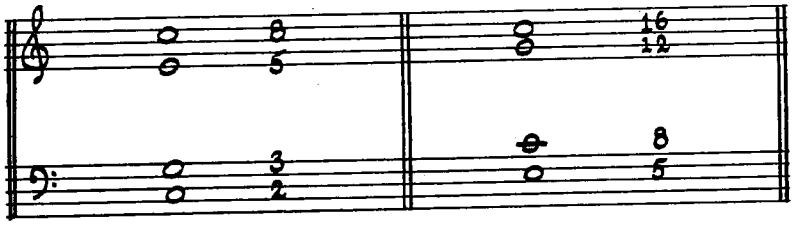


abbreviated to just "6"

So, for instance, "I^6" = **Tonic chord in 1st inversion**

Quality: "Lighter", more airy, than root position. Its partial numbers are higher, since the bottom note will be "5" and there are more missing partials.

Compare:



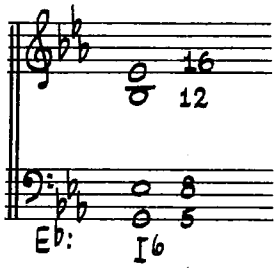
Root position 1st inversion

Restrictions: Virtually none. It may be quite freely used, BUT:

a. Because of its "light" quality, it may not always please you on the FINAL I chord.

b. Too many 1st inversions in a passage *could* result in an insecure quality.

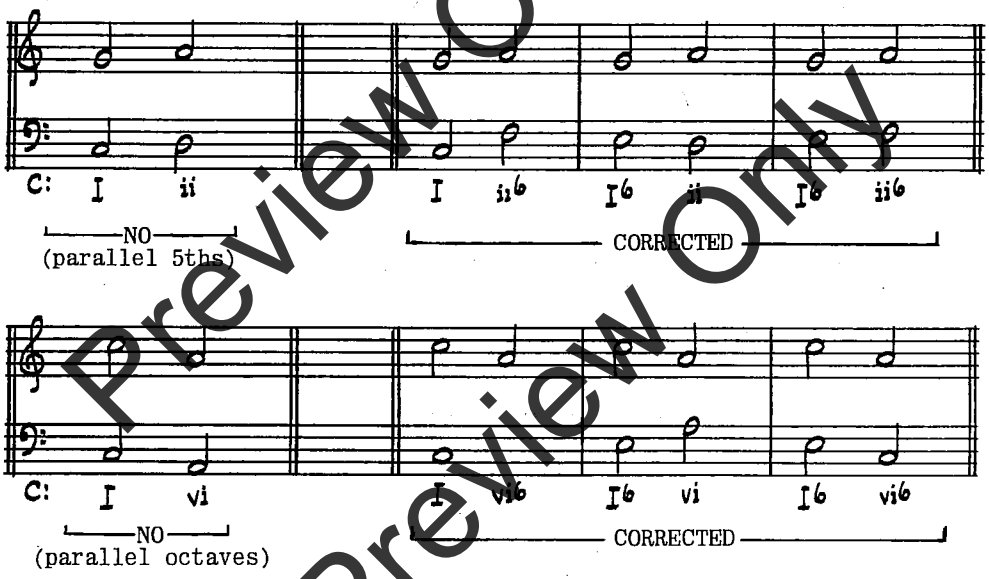
c. Some care is necessary to avoid "acoustically low" chords at endings, openings, chords of significant duration, etc. (see Chapter 2, pg. 30). For instance, the following would be poor as a final or initial chord:



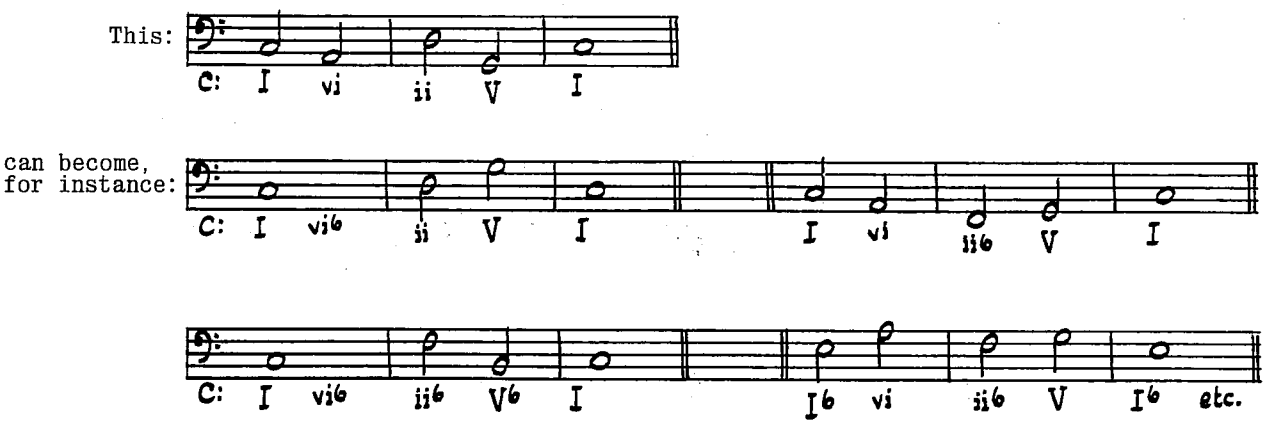
(Muddy! - root too far below A27½ v.p.s.)

Advantages:

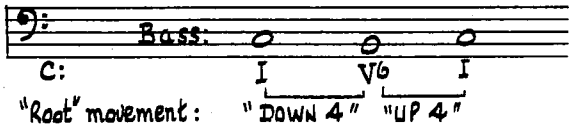
a. Avoidance of parallel 5ths and octaves:



b. Increased "melodic" resources in the bass:



Important note: Don't confuse BASS movement with ROOT movement! When inversions are used, the bass movement will **not** be the same as the root movement, as:



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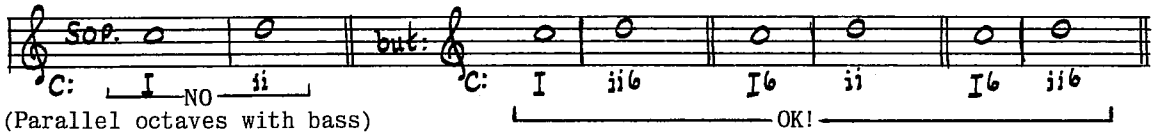
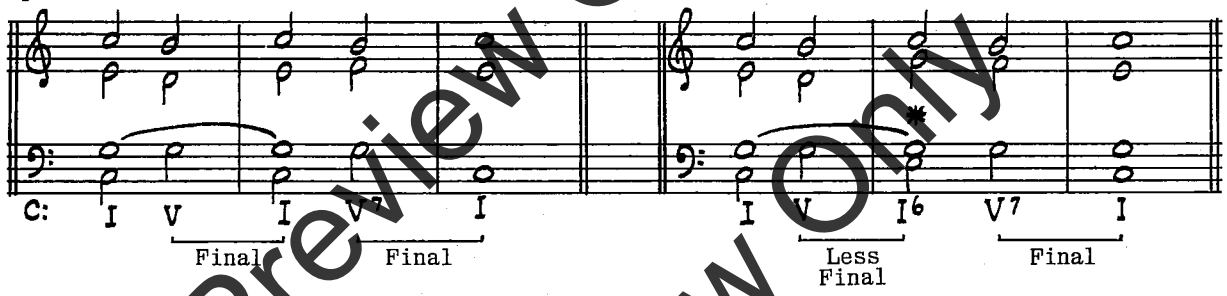
c. Increased melodic resources in soprano and other parts. To illustrate:



(Parallel octaves with bass)

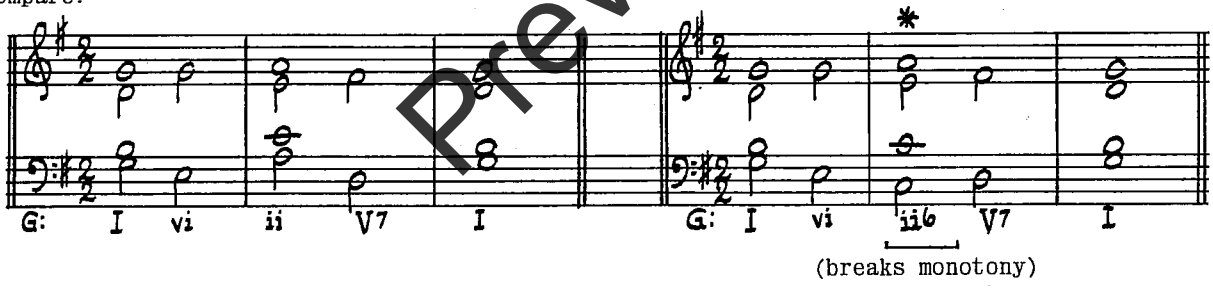
d. For an "Imperfect Cadence" with respect to the BASS. Up to now, the matter of Perfect or Imperfect depended on the soprano only. Now a "V - I", for instance, can be made to sound less final with the use of "I^6". In a passage where there are a number of "V - I" movements, this can be a valuable way to relieve the monotony and to avoid the "full stop" quality in a "V - I" when it isn't intended to be final.

Compare:

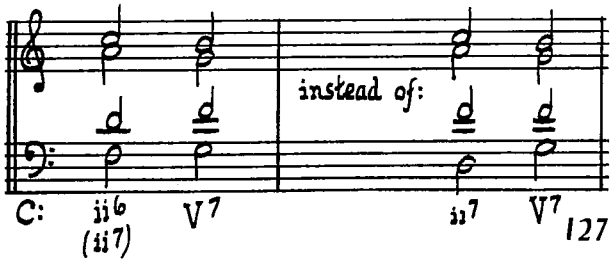


e. Simply for the *sound* of the 1st inversion, and to break the monotony of continuous root positions.

Compare:

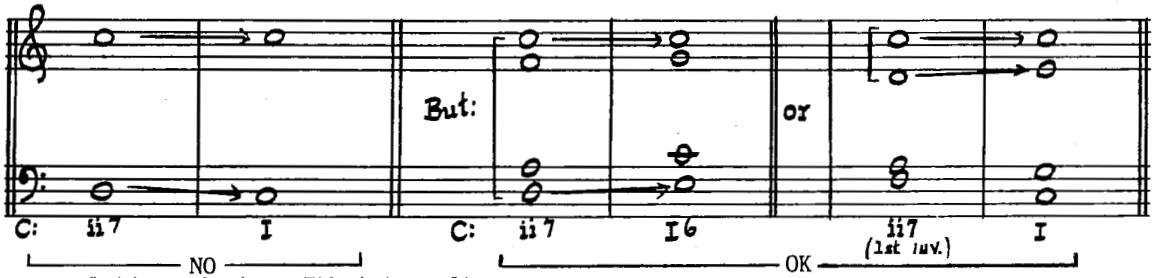


f. Many writers have shown a preference for "ii^6" rather than its root position, particularly when it is performing the Subdominant Function (i.e., moving to V), because it puts the strong Tonal note in the bass. (A chord symbol in the key of C which reads "F^6" (i.e., $IV^{add\ 6}$) is most likely really the 1st inversion of a "Dmi^7" (i.e., ii^7 in 1st inversion)). To illustrate:



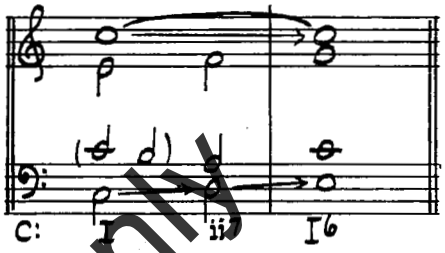
(This is an observation only, not a "direction".)

g. The Secondary *Root* movement of "Down 2" becomes available *from* a 7th chord, as:



(improper resolution of Minor 7th interval)

The use of "ii^7" between I and I^6 is a common "development" of the tonic harmony:

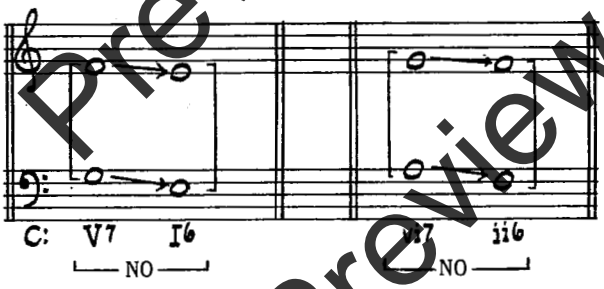


h. The advice regarding "doubled notes" is NOT AFFECTED with the use of 1st inversions. If the 3rd is a good double (ii, iii, vi) it remains so, even if one of the 3rds is in the bass. If the 3rd is an Irregular double (I, IV) it may be a little more noticeable when one of them is exposed at the bottom. (The 3rd of V should not, of course, be doubled anywhere.)

CAUTIONS:

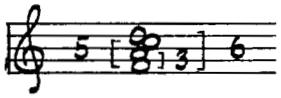
a. The resolution of a 7th chord on to a 1st inversion can cause a "hidden octave from a dissonance".

Example:



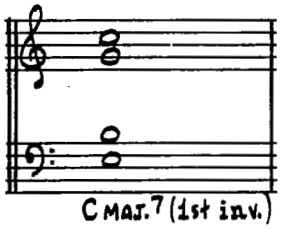
The section of this chapter which deals with "Irregular resolutions of the Minor 7th" will discuss ways to circumvent this problem. For now, *avoid the situation.*

b. This text will make very little use of the more involved "figures" for the inversions of 7th chords. However, for the record, the figured bass for the 1st inversion of a 7th chord is "$\frac{6}{5}$", derived as follows:

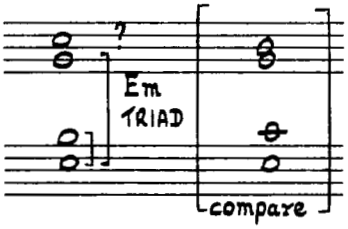


(abbreviated to just $\frac{6}{5}$)

Note that certain voicings involving the 1st inversion of a MAJOR 7TH chord may be unduly harsh and even ambiguous. To illustrate:

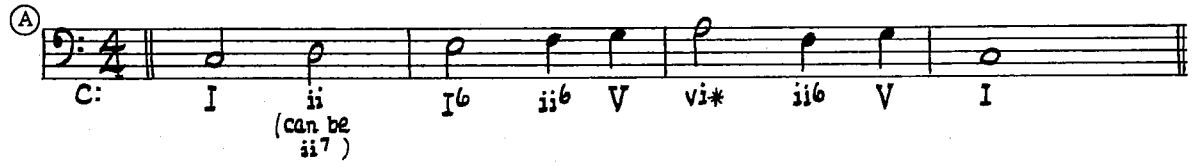


The strong Perfect 5th at the bottom gives the chord an "E" quality. The major 7th "B" sounds consonant and the root "C" sounds dissonant!

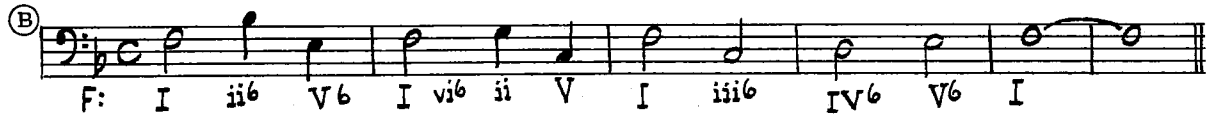


ASSIGNMENT 27 (The 1st Inversion)

1. Bass given. Add the upper parts, noting the use of "6" chords. (As always, show particular concern for the shape of the soprano.)

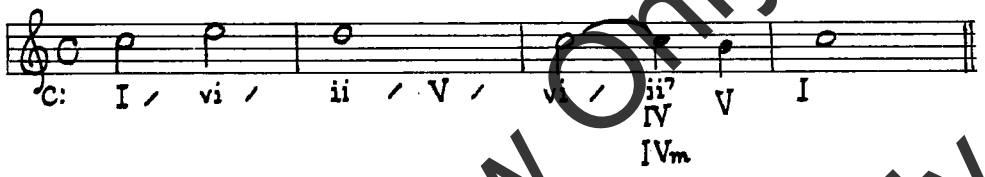


*(Don't use vi^7! The resolution of the 7th will produce a hidden octave from a dissonance.)

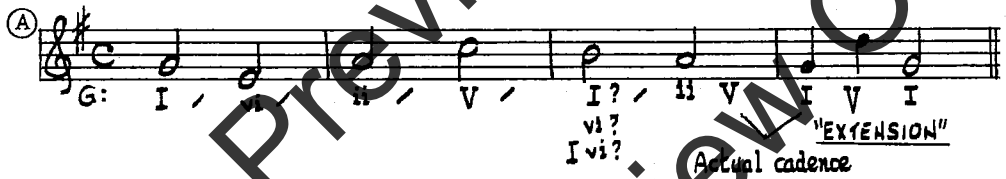


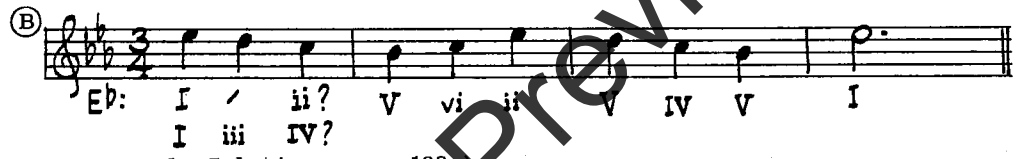
(See Sample Solutions page 193.)

2. Write six or seven different **bass parts** to fit the following soprano and progression. Root Position and 1st inversion are available.



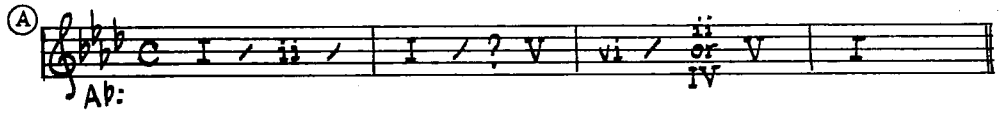
3. Lead given. Complete for four parts. Only the **chord** is indicated in the given figures, but 1st inversions, and 7ths, are available at your own discretion.

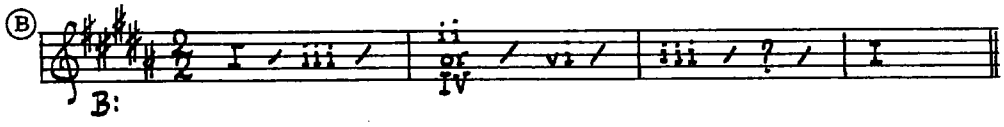




(See Sample Solutions page 193.)

4. Progressions given. Work out for four parts. Only the chords are indicated, but 1st inversions and the use of 7ths are available at your own discretion.



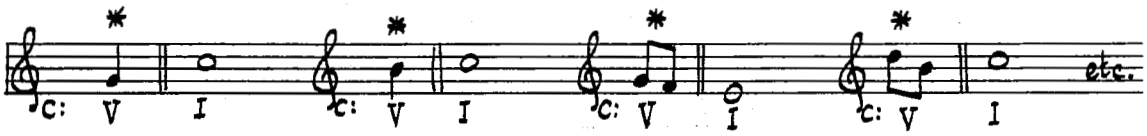


5. Compose eight bars using any and all of the material available to this point.

VI. THE USE OF AN INITIAL CHORD OTHER THAN "I"

Introductory:

In all areas of tonal music the first chord is most often "I", although the use of a dominant **ANACRUSIS** (i.e., "pick-up") is common:



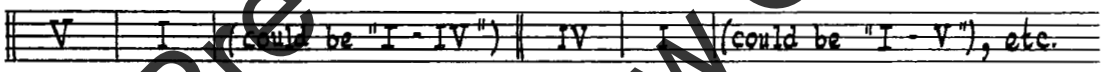
Nevertheless, the initial "strong beat" chord *doesn't have to be* "I", in fact it may be any chord at all. When the first chord *isn't* "I", it is customary to use, in fairly short order, some harmonic combination that places the intended key in focus. (Although even this is not essential. If the passage is tonally ambiguous for a while, this isn't necessarily undesirable.)

The tonic chord itself is not necessarily required to focus the key. The **most reliable combination of chords to outline the intended tonality is a "SUBDOMINANT FUNCTION - DOMINANT FUNCTION", specifically:**

ii - V
or
IV - V

This combination works with only the triads, and if "V^7" is used, the focus is even sharper. A great many standard tunes use "ii - V" at the beginning (e.g., "Tea for Two", "Body and Soul", "Honeysuckle Rose", etc.) and the key is clear as soon as "V" arrives.

Situations in which the "subdominant - dominant" formula doesn't appear immediately are sometimes encountered. There will be, however, a degree of ambiguity. For instance:



The Altered Plagal Cadence formula, "IV - IVmi - I", is found at the start of a number of standard tunes (e.g., "After You've Gone", "Moonglow", etc.) and seems to be clear. "All The Things You Are" starts on vi (vi - ii - V - I) and, in fact, numerous examples from all idioms can be found where the initial chord isn't "I".

Furthermore, although we are not directly concerned at this point, it can be noted that passages sometimes start on *Modal Variants* (e.g., "Night and Day" - ♭vi), on *Secondary Dominants* (e.g., "Shine On Harvest Moon" - V of ii) and even in different keys (e.g., "Laura" starts in the key of "V", Mendelssohn's "Wedding March" starts in the key of "iii", "I Surrender Dear" starts in the key of ii, and there are many instances of passages starting in the Related Minor).

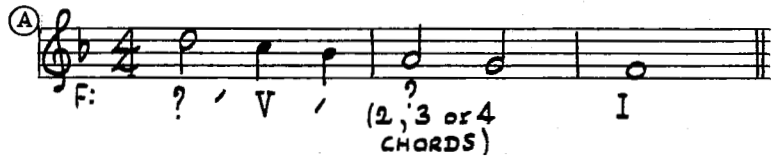
Conclusion:

Although "I" is the most obvious and most likely chord to use at the initial strong beat, any other chord is possible, provided that the subsequent harmonic and melodic materials are logically handled and directed.

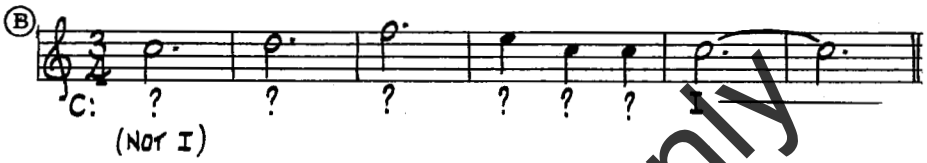
ASSIGNMENT 28 (Use of an Inital Chord other than I)

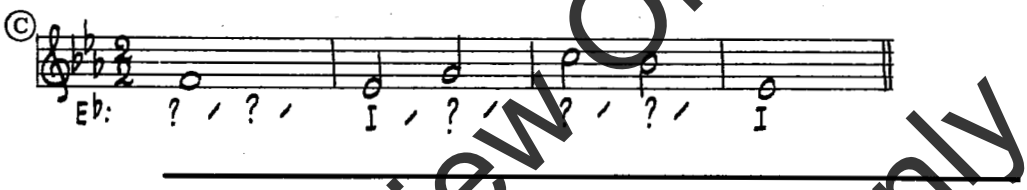
1. Locate examples, in any idiom, where the opening chord isn't "I". Note what harmonies follow.

2. Lead given. Complete for four parts, using any material presently available. The first chord in each case is to be something other than "I".



(See Sample Solutions page 193.)

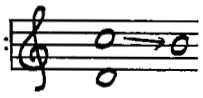




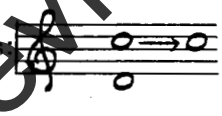
VII. THE IRREGULAR RESOLUTIONS OF THE MINOR 7TH

Introductory:

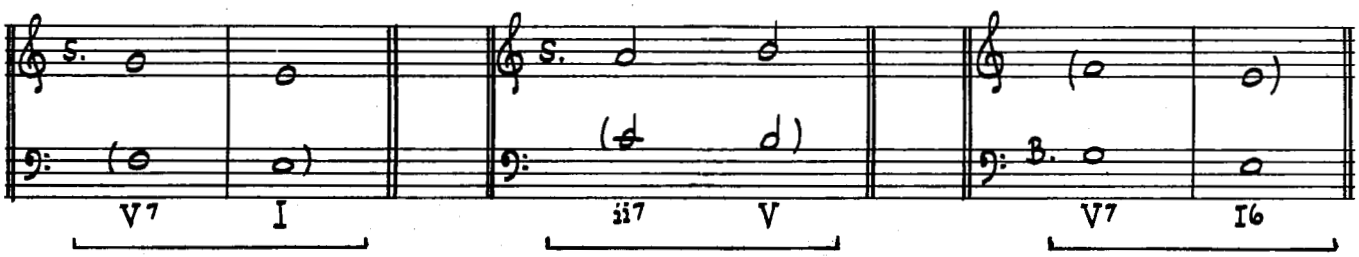
To this point, a Minor 7th has been required to *fall one step* in Primary progressions:



and to remain "passive" in Secondary progressions:



These will remain as the regular and desirable procedures! There are some situations, however, where 7th chords *cannot* be used if the *Regular* resolutions are followed. To illustrate:



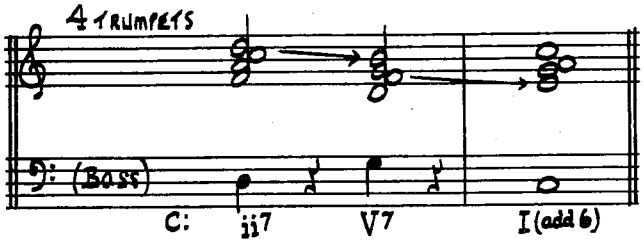
Regular resolution of 7th here will produce a hidden octave from a dissonance.

Regular resolution of 7th here will produce doubled 3rd in V.

Regular resolution of 7th here will produce a hidden octave from a dissonance.

In order that 7th chords can be used in situations as illustrated on preceding page, certain Irregular resolutions are available. These Irregular resolutions use a principle called **TRANSFERENCE**, which means *the resolution of a dissonance in a part other than the one in which it occurs.* (i.e., the resolution is "transferred" to another part.)

The principle of Transference is widely used in Section writing, as:



Although it is *not* the intention here to use Sectional techniques, some of the more casual voice leading found in Sectional writing can be judiciously applied to Part Writing, *if there is an advantage in so doing.*

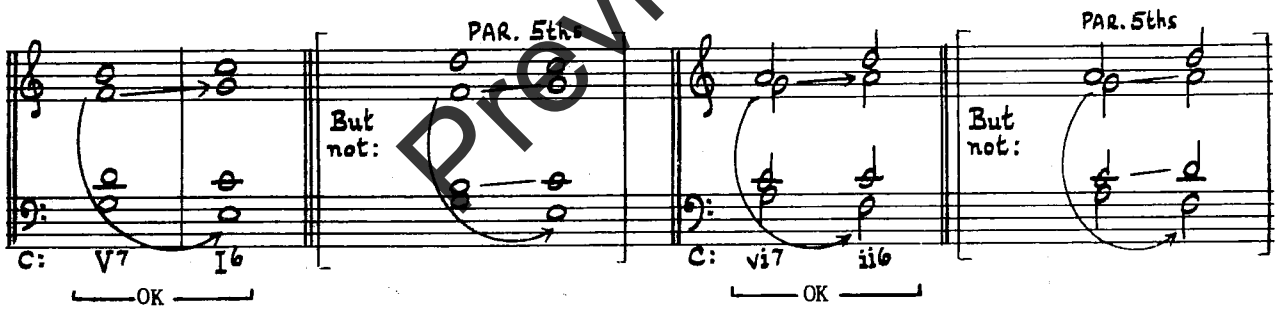
The Irregular resolutions will work best in *obvious*, PRIMARY progressions; that is, in progressions where the purely "harmonic" relationship between the chords is so expected and so familiar that the presence of a voice leading flaw will not be too noticeable.

Further, no one of these modifications is an improvement over the Regular resolution! The Irregular resolutions should be used *only if the Regular resolution doesn't allow a 7th chord. If the Regular resolution is available, use it!*

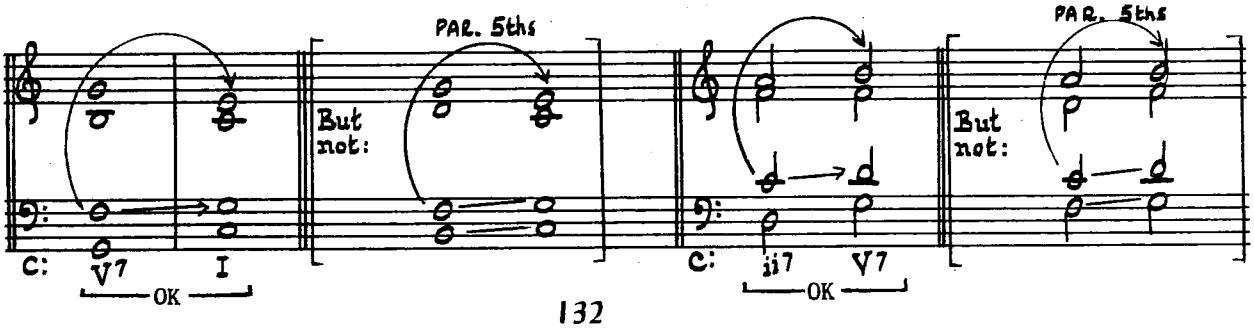
Don't use an Irregular resolution if it produces a Parallel 5th, or awkwardness!

The Modifications

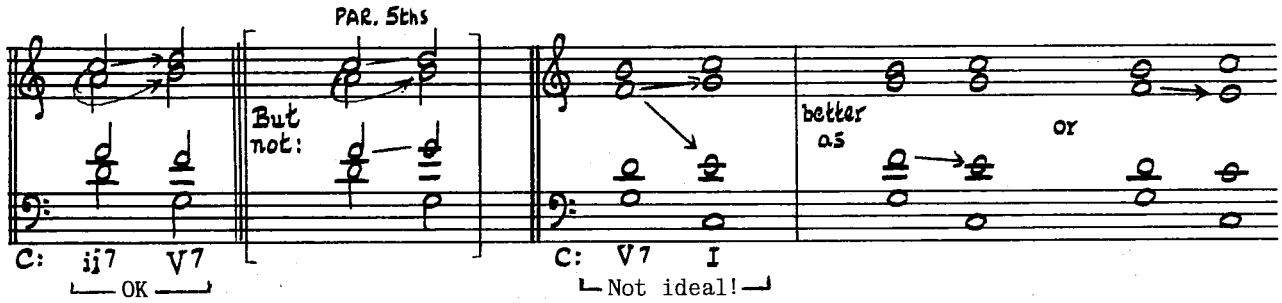
1. The minor 7th may **rise one step** if the note to which it would regularly fall is **taken by the BASS.** (provided no parallel 5ths result). To illustrate:



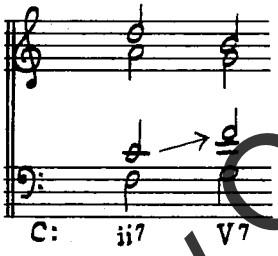
2. The minor 7th may **rise one step** if the note to which it would regularly fall is **taken by the SOPRANO** (provided no parallel 5ths result). To illustrate:



3. The minor 7th may **rise one step** if the note to which it would regularly fall is **taken by the part immediately below** (provided no parallel 5ths result). To illustrate:



4. If the situation demands, a minor 7th **may leap up a Perfect 4th, to another minor 7th.** To illustrate:



With the melody and bass used here, this is the only reasonable solution!

5. Other Irregular resolutions of the minor 7th may occasionally be acceptable, *if* some musical purpose is served.

To Sum Up:

If *necessary,* a minor 7th may **rise one step**, if its resolution note is taken by the:

—**BASS**
—**SOPRANO**
—**PART IMMEDIATELY BELOW**

and, it may sometimes leap up to another minor 7th.

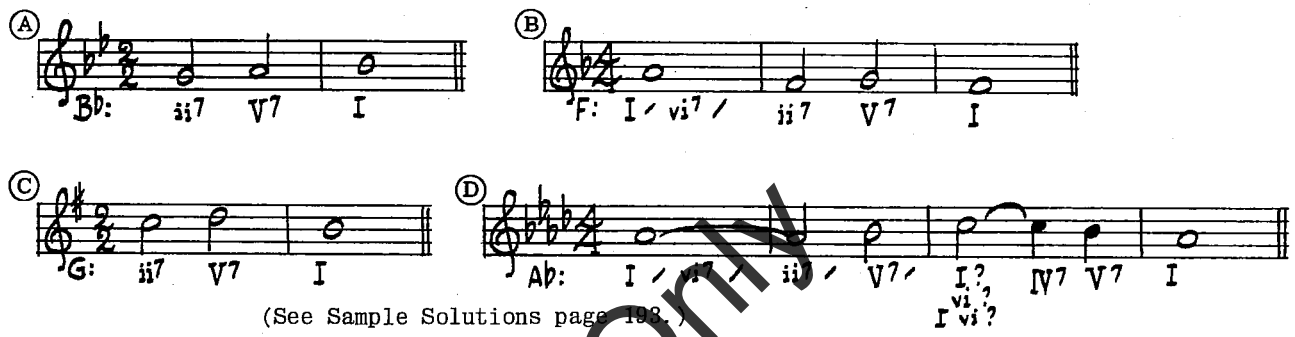
CAUTION:

The Irregular resolutions apply to HARMONIC 7ths only!
DO NOT USE AN IRREGULAR RESOLUTION OF A CONTRAPUNTAL 7TH!

ASSIGNMENT 29 (Irregular Resolutions of the Minor 7th)

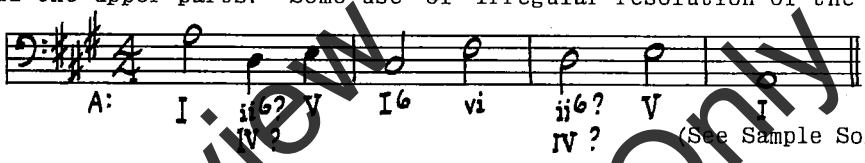
NOTE: The "Irregular resolutions" apply to Harmonic 7ths only, NOT to Contrapuntal 7ths. Root Positions and 1st inversions available.

1. Lead given. Complete for four parts. Note that the given lead makes Irregular resolution of the Minor 7th occasionally necessary. Avoid parallel 5ths.



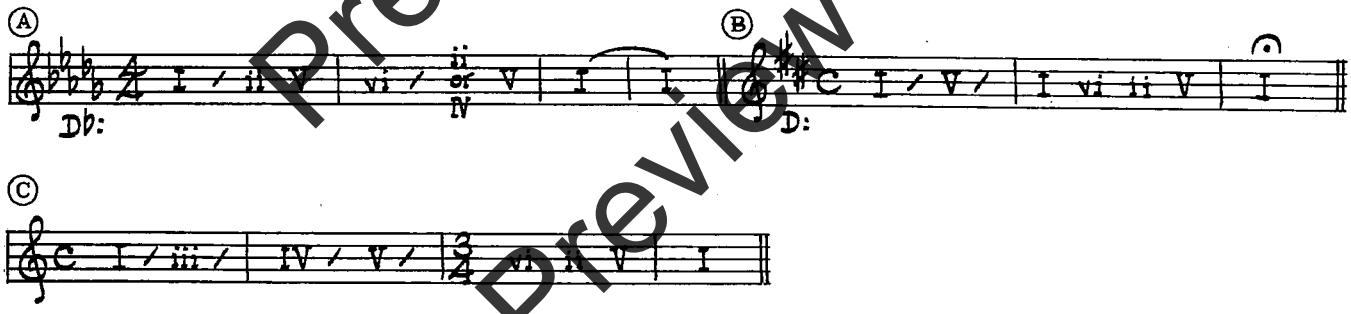
(See Sample Solutions page 188.)

2. Bass given. Add the upper parts. Some use of Irregular resolution of the Minor 7th will be necessary.



(See Sample Solutions page 193.)

3. Progressions given. Work out for four parts, showing some *logical* and reasonable use of irregularly resolved Minor 7ths.



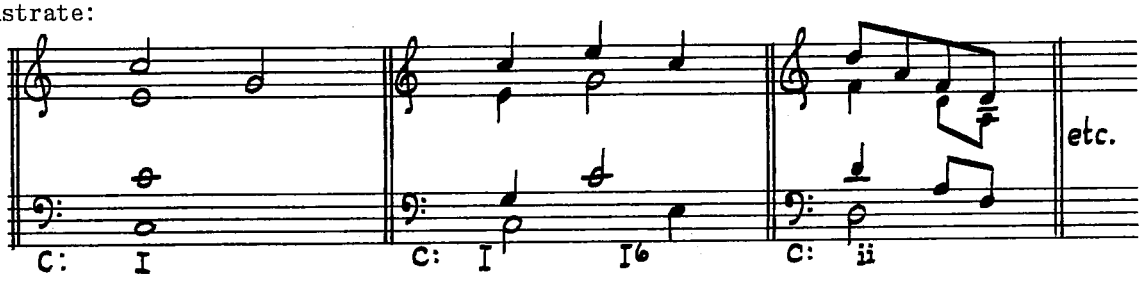
4. Locate examples of irregularly resolved, and more casual uses of, the Minor 7th in the melody of standard songs. Note that writers are sometimes more liberal with the 7th of ii (the stable "tonic" of the scale) and the 7th of vi (the relatively stable "dominant" of the scale) than they are with the Minor 7ths of other chords.

VIII. CHANGE OF POSITION ("Arpeggiation")

Proposition:

A chord, or one or more notes in a chord, may *change position* without any actual change of harmony. Notes of the chord may leap to other notes of the same chord.

To illustrate:



Advantages:

1. Increased resources for melody, in the soprano and all parts.
2. Means of providing movement to retain rhythmic balance.
3. Re-positioning of a part or parts for more favorable voice leading.

For convenience of presentation, this proposition will be examined in two parts:

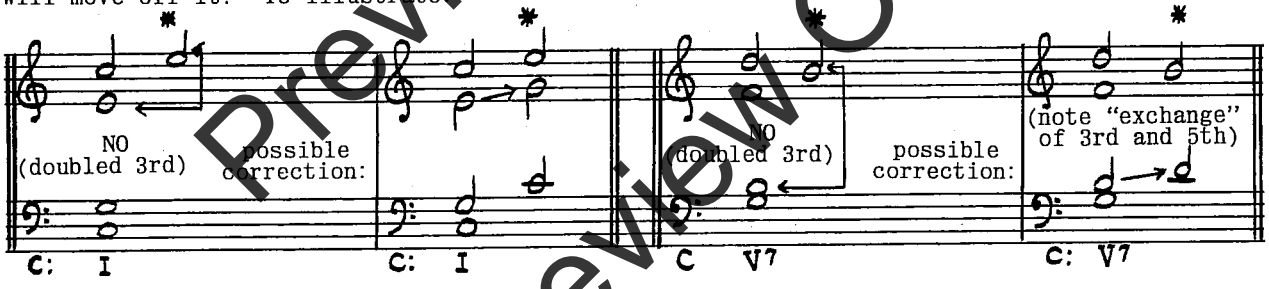
Part 1: **Without** irregular doubles or omissions.

Part 2: **With** irregular doubles or omissions.

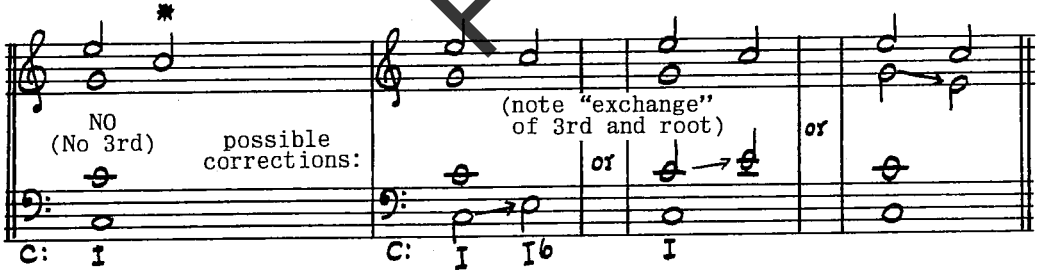
PART 1: Without irregular doubles or omissions.

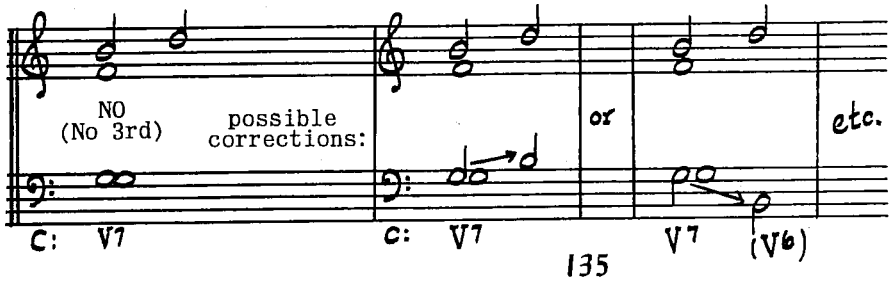
In situations where the music is not moving quickly, it is usually desirable to retain good *vertical* construction in the chords. Therefore:

A. If a part moves TO a note which would not normally be doubled, the part already on that note will move off it. To illustrate:



B. If a part moves FROM a note which would not normally be omitted, another part will move to replace the necessary note. To illustrate:

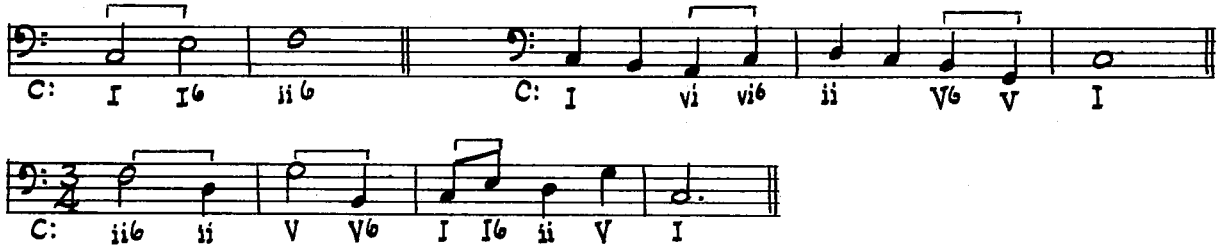




Details:

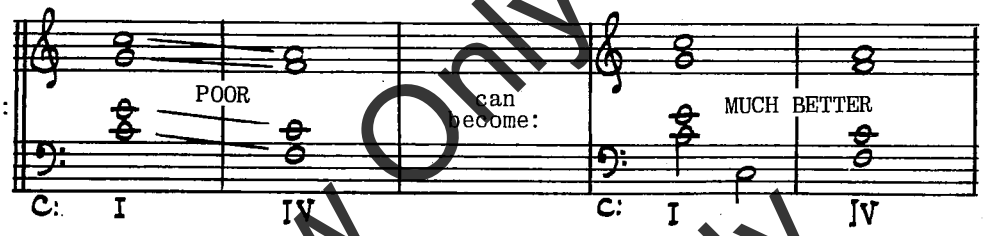
1. THE BASS

With the exception of the possibility of a "passing 7th", the bass is still restricted to roots and 3rds. However, a change from root position to 1st inversion, or vice versa, is now possible. To illustrate: Bass parts such as the following are now available, provided the upper parts allow:

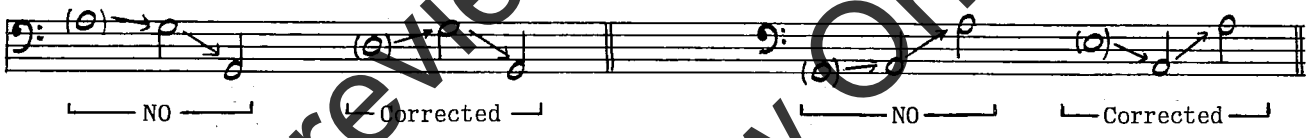


and the bass may **leap an octave**, simply to provide movement or, perhaps, to avoid similar motion in all parts.

Example:

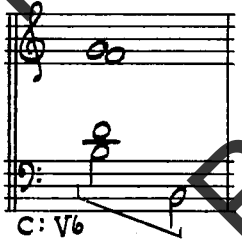


A word of caution regarding octave leaps: Don't overdo them and, in general, **approach and leave them with contrary motion**, as:



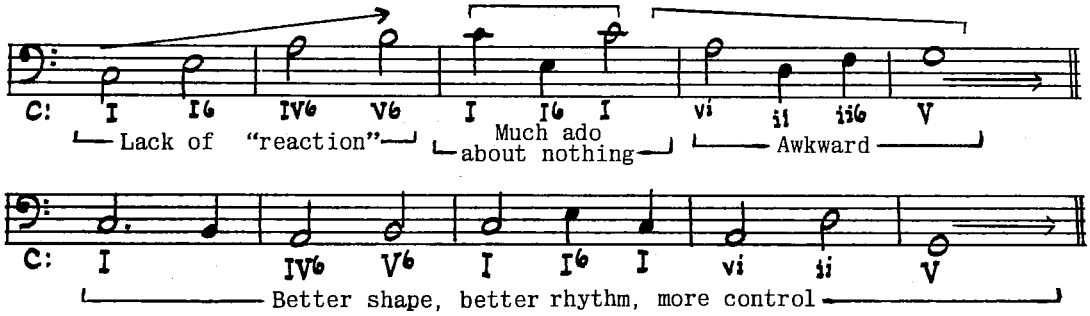
You will find that the leading-tone (or, for that matter, any other obviously "active" note) does not take kindly to an octave leap.

Example:



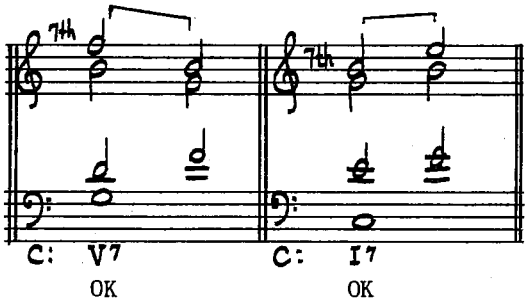
(not very musical!)

With the increase of resources in the bass, it becomes even more necessary to keep an eye and an ear on its shape. Don't let it become sprawling, aimless, awkward or insensitive. Not only does it perform a vital harmonic role, but it is also an "exposed" part; it must be controlled from a purely melodic point of view. Here, for example, is an uncontrolled bass part, with a suggested improvement:



2. DISSONANT NOTES

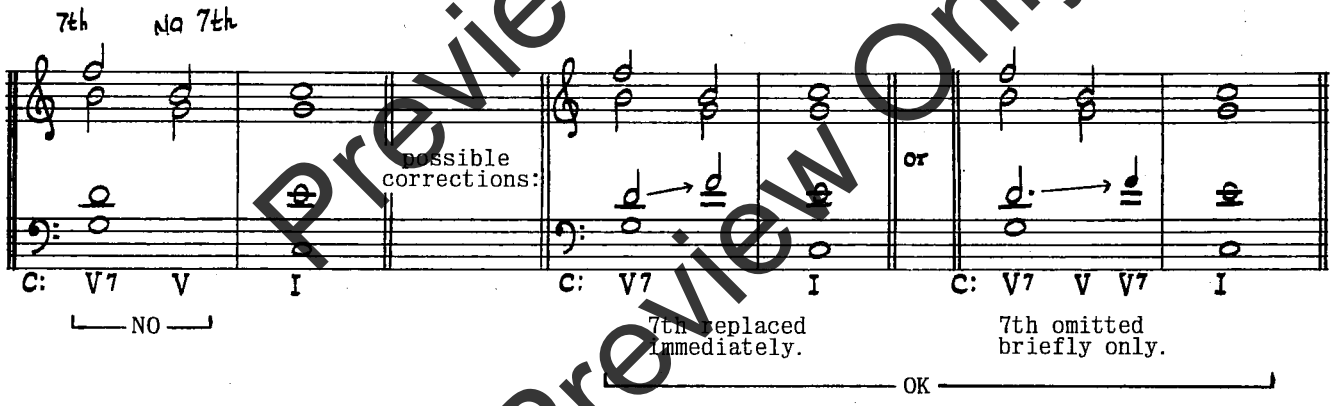
A dissonant note of a dissonant chord may leap to **another note** of the **same chord**:



Interesting sidelight: A dissonant leap contained in the same dissonant chord is less awkward to perform than is the same interval leap between two different chords.

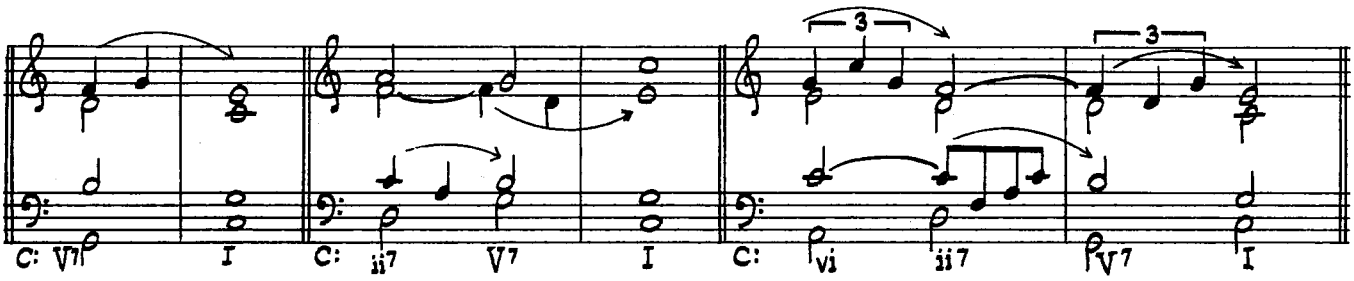
Example: This:

However, except as noted below, once a Minor 7th (or Diminished 5th in later chords) has been used in the chord it should *not be omitted*, unless *briefly*, thereafter. The Minor 7th provides energy and density which will be *missed when removed*. To illustrate:



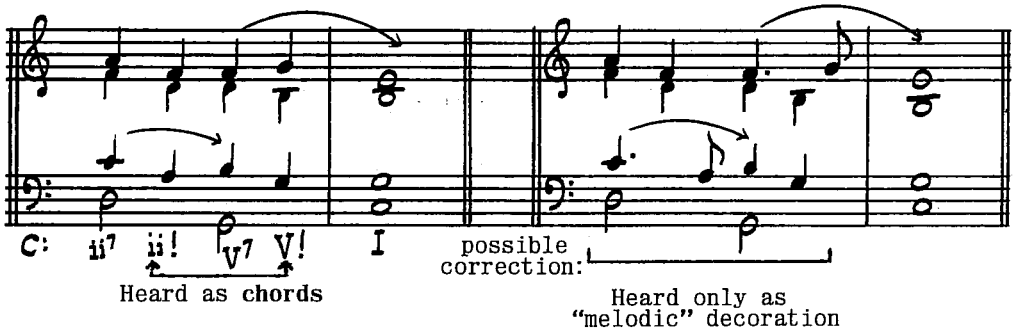
The exception, though, is an **IMPORTANT ONE:**

If the 7th merely moves to another note of the same chord, at a weak beat or fraction of a beat *between itself and its resolution* IN THE SAME PART, the 7th *need not* be replaced! The result will be heard simply as a "Decorative Resolution" of the 7th, as a sort of scenic route between the 7th and its resolution. The examples should illustrate the procedure:



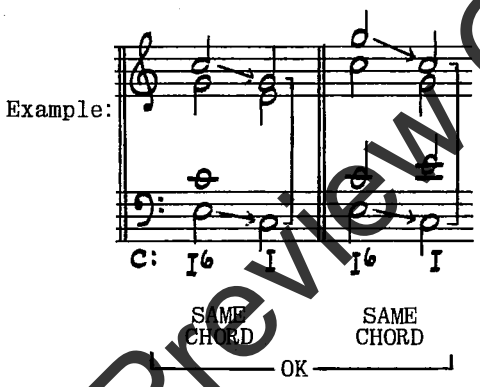
(ALL OK!)

The subject of Decorative Resolutions will be dealt with in more detail under "Melodic Inharmonics" (see Vol II). For now, restrict the process to simple decorative resolutions of the 7th and make sure that your intention is **clearly heard.** This, for instance, is doubtful, because the intention ISN'T **clearly heard:**

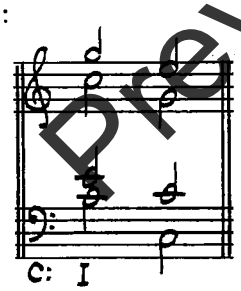


3. GRAMMAR

Hidden 5ths and Hidden Octaves **by leap in the outside parts** are normally frowned upon. They are considerably less emphatic when no change of harmony is involved, however, and can be accepted.



Similar motion in all parts, usually undesirable, is less disturbing when no change of harmony occurs. While one contrary or stationary part would no doubt be an improvement, a situation such as the following IS acceptable:

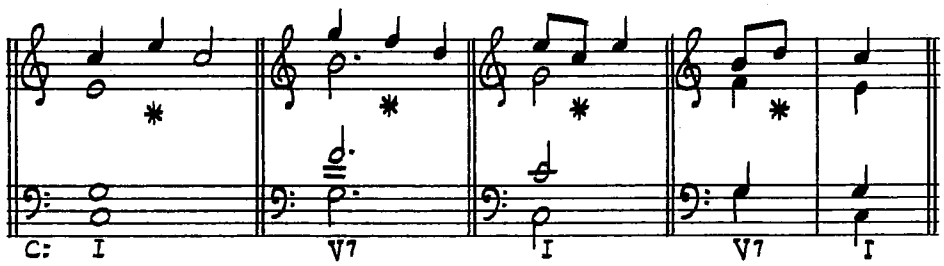


(NOT SERIOUS)

PART 2: With irregular doubles or omissions.

When shorter note values and/or faster tempos are used, it is occasionally possible to employ an irregular double (i.e., doubled 3rd on V, IV, I - doubled 7th) or to omit an essential note (i.e., 3rd) if such occasions are *brief,* and at *weak or unaccented* positions in the rhythm. That is, provided the irregular situation is NOT heard **vertically.**

The following irregularities, for instance, should cause no trouble since they are all *brief and unaccented.* The listener will NOT be aware of the **vertical** structure at the points where the irregularities occur:



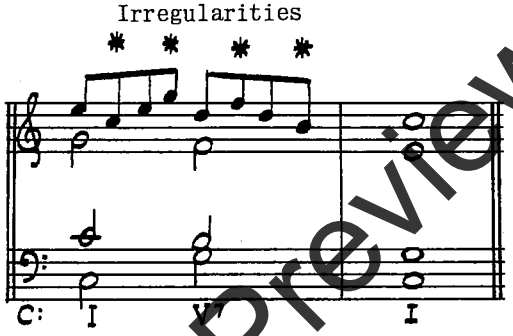
Doubled 3rd in I. | Doubled 7th in V. | Omitted 3rd in I. | Omitted 3rd in V.

Irregularities such as these are called upon in situations where a literal concern for the vertical structures could lead to:

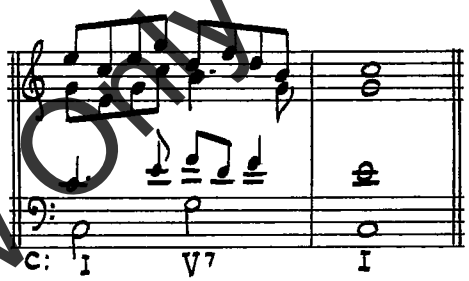
- Clumsy voice leading
- Awkward rhythm in the voice lines
- Unnecessary activity.

For instance,

This:



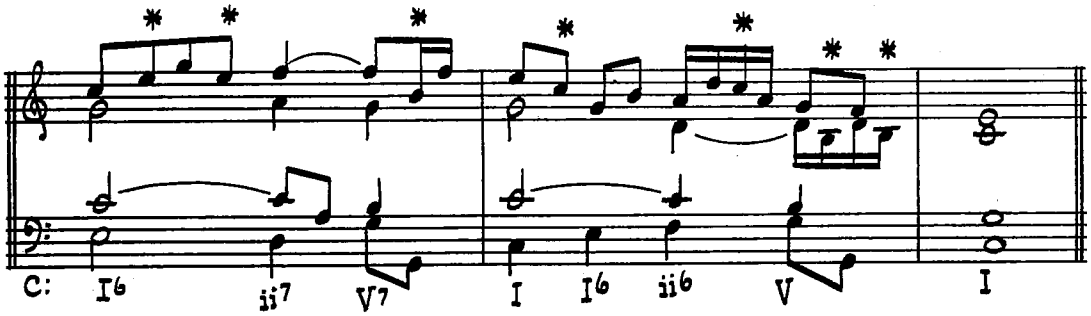
is obviously more graceful and economical than:



In general, *the importance of the vertical decreases with an increase of speed and with shorter note values.* The faster or "busier" the passage, *the more important the grace and mobility of the part lines.* The listener will not be aware of the **vertical** sonorities at *weak and unaccented* points. Consequently, vertical irregularities are most often called upon in passages involving SHORT NOTE VALUES (eighth notes, sixteenth notes, etc.).

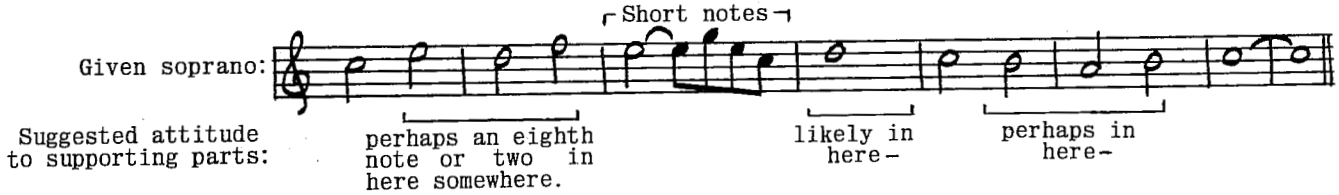
To illustrate: The following short passage shows a number of vertical irregularities, none of which is likely to disturb the most acute listener. If an effort was made to retain **vertical** accuracy of every unaccented short note, the texture would be overloaded and the part lines would be clumsy and graceless:

*Brief, unaccented irregularities



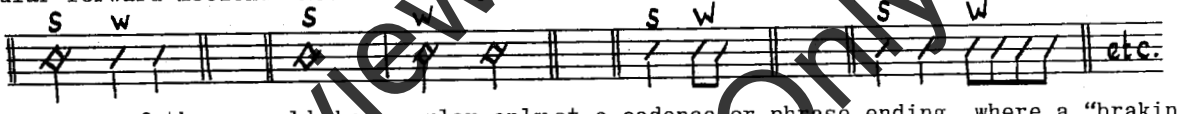
Additional Comments:

1. Short note values are always a source of danger. Use too many of them and your music becomes a monotonous babble, but, on the other hand if only a couple of eighth notes appear in a passage that is otherwise in quarter and half notes they may very well sound out of context! If a given line shows such a situation, try to *balance* the short notes with a use of similar short notes at some other point in another part, thereby making a logical musical idea from what otherwise might be an irrelevance. To illustrate:

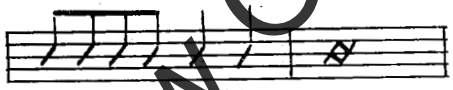


2. With the introduction of *arpeggiation,* the music, or some of it, will tend to be "busier" than it has been. *But cultivate economy!* The easiest, smoothest, and least active solution will invariably be the best. This doesn't mean, for instance, that sixteenth notes can't be used; what it does mean is that if you have *even one more* sixteenth note than is necessary for rhythmic balance and for the clear presentation of your musical idea, you have one too many!

3. Keep an eye and ear on the "Rhythmic Balance". *Right* and *wrong* in the matter of rhythm is very difficult to specify; but *forward motion* is generally desirable and this can always best be served with **activated weak beats and weak bars.** The following rhythms are representative of regular forward motion. Note that they "activate weakness":

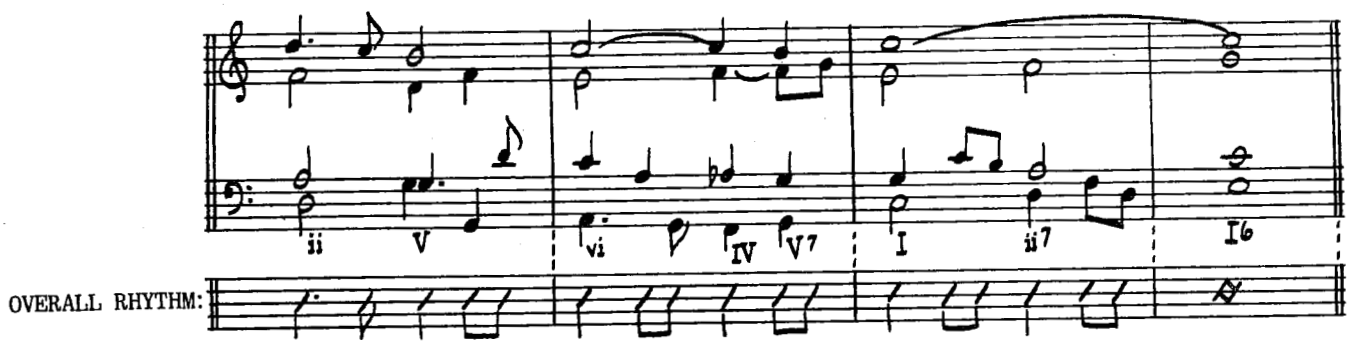


The reverse of these would be regular only at a cadence or phrase ending, where a "braking" or "slowing down" action is logical, as:



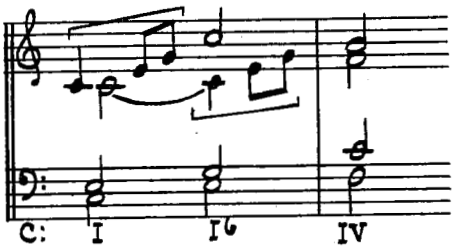
Nevertheless, while one "irregular" or awkward rhythm is likely to be unmusical, there is no doubt that two, three, or more, appearances of the irregular rhythm might well form a logical pattern and idea! (Like the jazz improviser who follows an unintentional "fluff" with an intentional one!) *Ultimately the effectiveness of any technical point in music can only be decided in its own context, not from an allegiance to any all-embracing principle or law.*

Counterpoint, the combination of melody lines, concerns itself with the rhythmic balance of each part. In harmonic technique it is not necessary to be so demanding. Certainly every effort should be made to avoid obviously awkward rhythms in any part, but the main concern is the *OVERALL* rhythmic balance. The rhythm of a passage is the sum total of all the parts. Here is a passage with the overall rhythm calculated:

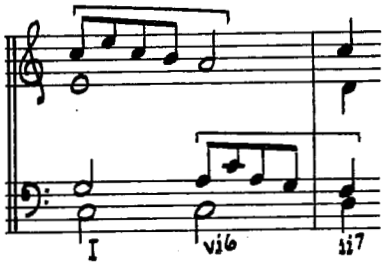


4. Since it is quite likely that the soprano line may not be in ideal rhythmic balance it is often necessary to add movement in one of the supporting parts, to preserve the forward motion. When adding "filler" material, for this or any other reason, always strive for **relevance**. While it is true that the melodic means at our disposal at this point are extremely limited, it is equally true that these limited resources can be used sensibly and sensitively. There are some standard "devices" which writers have used to gain relevance and unity. Here are a few, with brief illustrations of their application:

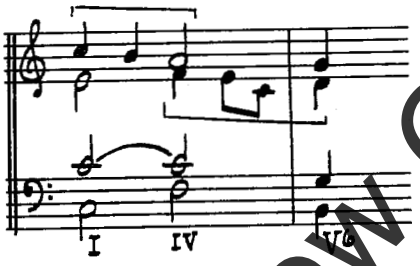
REPETITION:



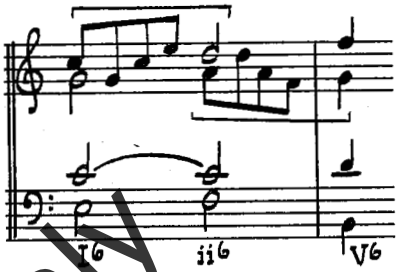
REPETITION AT A DIFFERENT LEVEL:



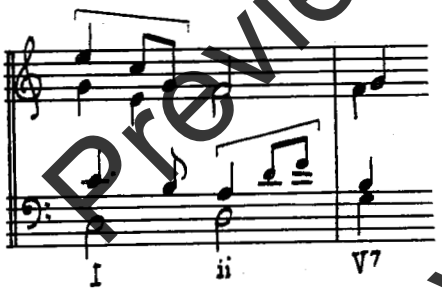
REPETITION WITH EMBELLISHMENT:



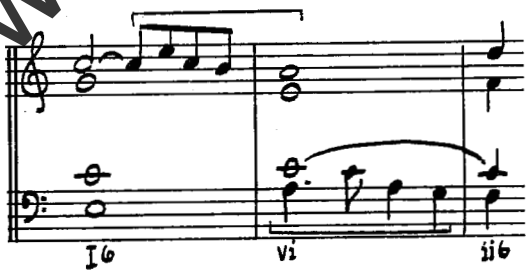
INVERSION: (same intervals, but in opposite direction)



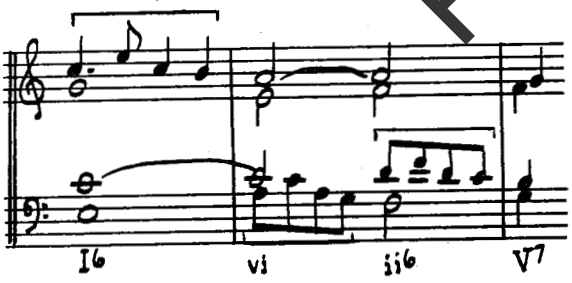
RETROGRADE: (backwards)



AUGMENTATION: (usually double the note values)



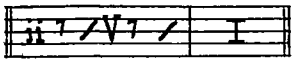
DIMINUTION: (usually half the note values)



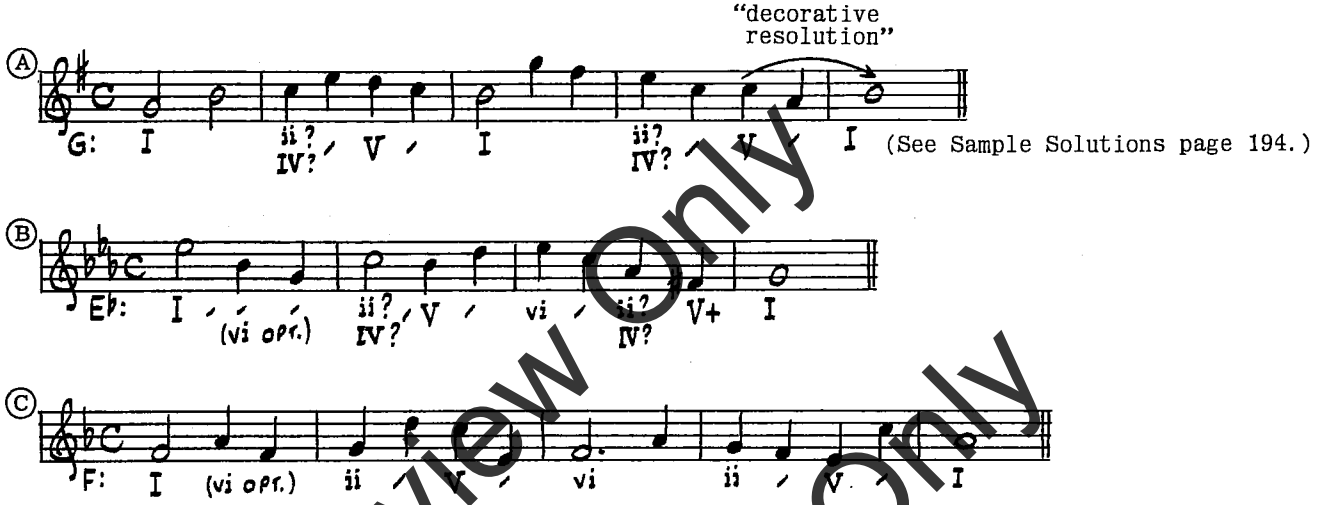
These devices can be regarded as *general ideas* rather than rigid procedures, and anyway the main thing is to keep aware of the nature of the passage with which you are working; its rhythmic, melodic, and harmonic nature. If you do this sincerely, you are not likely to write irrelevancies.

Regard each passage not just as a technical exercise, but as a piece of "music", a fragment of art. Handle it with respect, and the loving care of a good craftsman.

ASSIGNMENT 30 (Change of Position)

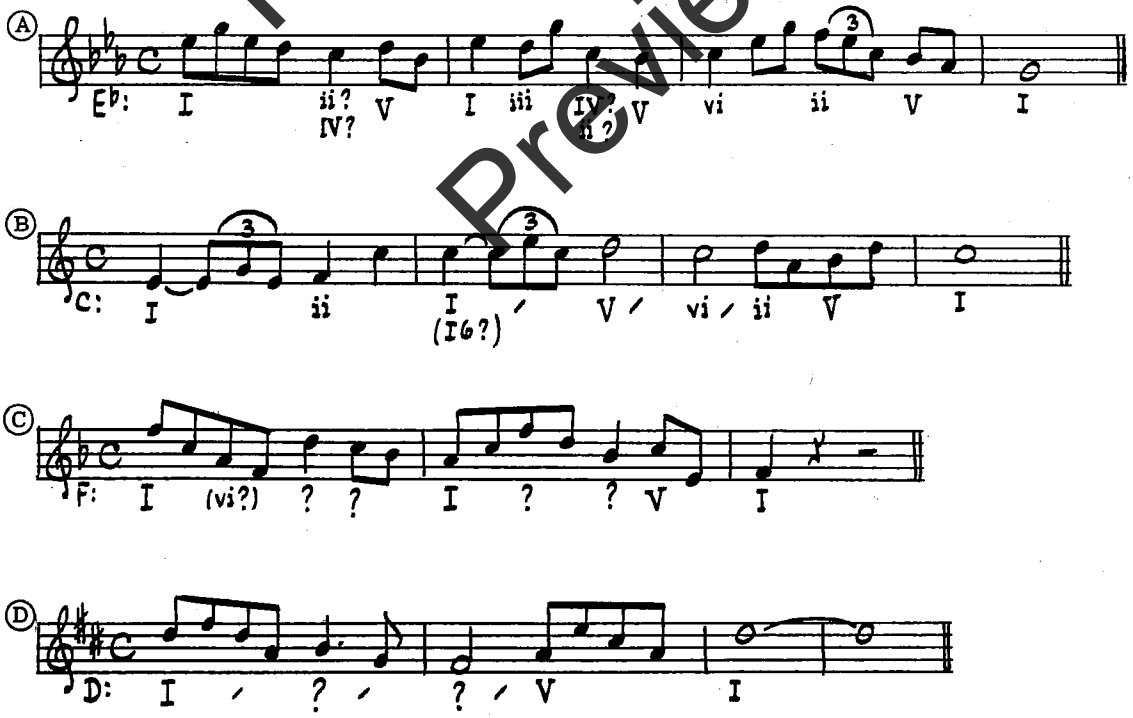
1. In various major keys write a number of examples of:  using "decorative resolutions" of the 7ths in ii and V.

2. Soprano given. Complete for four parts. Only the basic chord figures are given, but 7th chords are available, and root positions or 1st inversions are your option. In this exercise, **avoid irregular doubles or omissions**; retain accurate *vertical* structures on all beats.



(See Sample Solutions page 194.)

3. Soprano given, with basic chord figures. **Irregular doubles and/or omissions available**, where they won't be heard *vertically* and where they contribute to smooth part writing and the avoidance of awkwardness or unnecessary activity. (See Sample Solutions page 194.)



4. Compose two soprano lines to fit the following progression. Illustrate use of "arpeggiation" and make some use of "decorative resolution" of 7ths. Fully developed melody requires the use of "Melodic Inharmonics" (non-chordal tones) which are not yet available (see Volume II). But strive for graceful lines and avoid too consistent use of chordal arpeggios. Refer back to the text on "The Soprano" in Chapter 4.

   a. A line with no eighth notes.

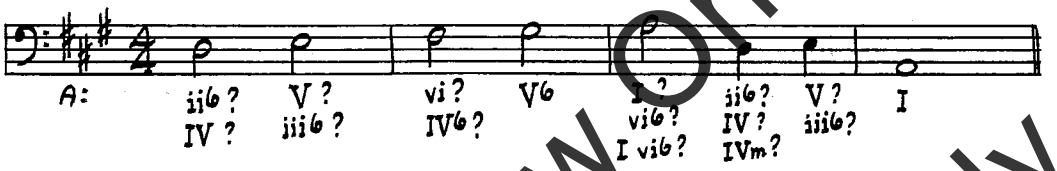
   b. A line with a few eighth notes.

   End each "perfectly". (Melody exercise only - don't harmonize)

5. Bass given. Add the upper parts. Two examples:

   a. Perhaps a few eighth notes.

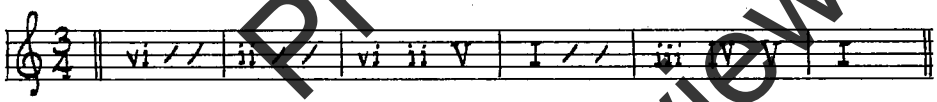
   b. More eighth notes - even a few sixteenth notes.



6. Work the following progression for four parts. (Basic chord figures given, but 7ths and 1st inversions available.) Make use of "arpeggiation". Two examples:

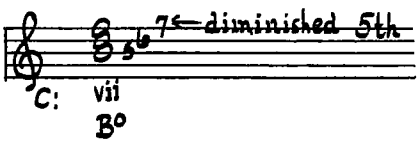
   a. No eighth notes.

   b. Some eighth notes.



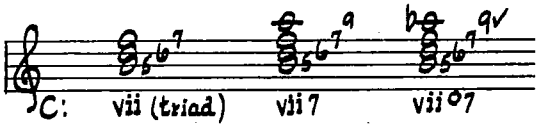
IX. THE vii CHORD IN MAJOR

With the exception of vii, all of the triads in major are consonant in root position or 1st inversion. The vii is dissonant, however, even in triad form. The dissonance is, of course, the diminished 5th which is actually a 7th partial. Note partial numbers:

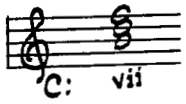


Consequently, even the triad form of vii requires *resolution.*

Three forms of vii are used in major:



A. vii TRIAD



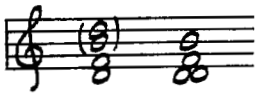
Quality: Diminished, dissonant.

Doubled note:

└3rd only┘ (since it is the only consonant note.)

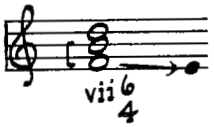
Possible when moving to iii (See below)

Preferred positions:



└1st inversion┘ (places the consonant note in the bass.)

Nevertheless, vii CAN be used in "root" position and, furthermore, **the 2nd inversion of vii** (vii^6_4) is available, provided the Diminished 5th in the bass receives regular resolution:



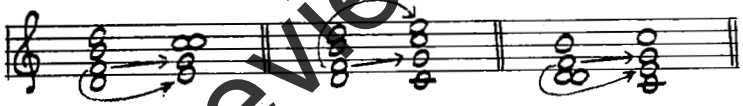
Major and Minor chords are consonant in root position and 1st inversion, but *dissonant* in 2nd inversion. Consequently, the $^6_4$ form of *major* and *minor* chords presents special problems, which are examined in Chapter IX. However, the *Diminished 5th* of a diminished triad is **dissonant in any position**, so there is no reason to avoid vii^6_4. Just resolve it successfully.

Function: Primarily "Dominant". "vii - I" can be regarded, and used, as a lighter version of "V - I". A little experimentation will show that some voicings of vii are more easily handled than others! "vii - I" may frequently require:

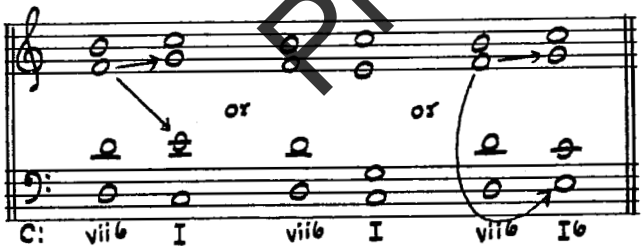
a. A doubled 3rd in I

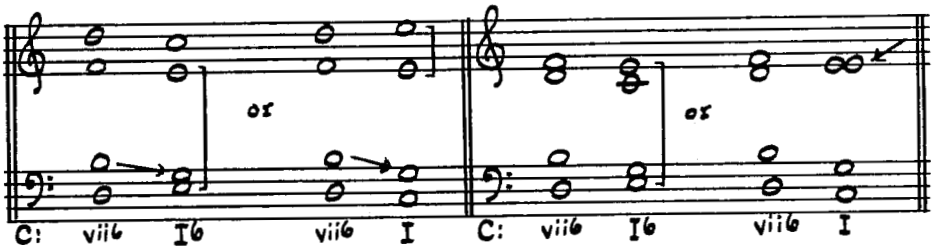
b. Irregular resolution of the Diminished 5th in vii, provided it isn't in the bass, with the same process that allows an irregular resolution of the 7th in "V". (Acoustically, of course, the Diminished 5th of the vii chord IS the 7th of V!)

To illustrate:



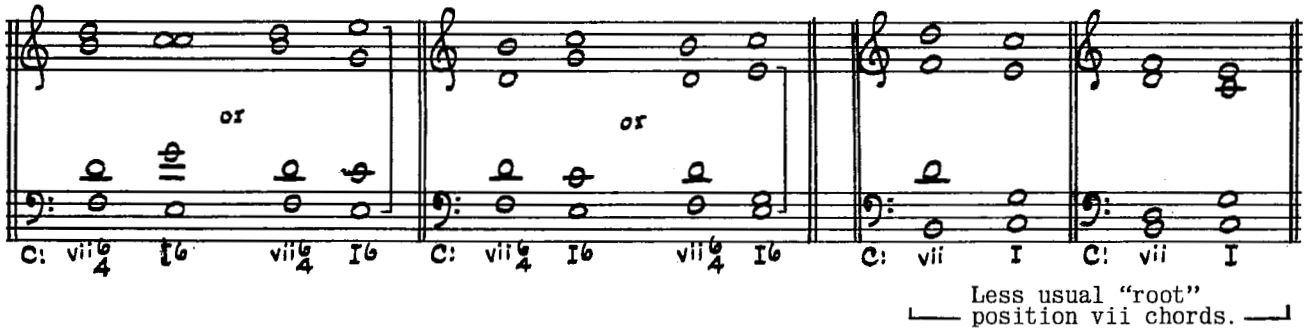
Here are a few examples of triadic "vii - I". Peruse them carefully.



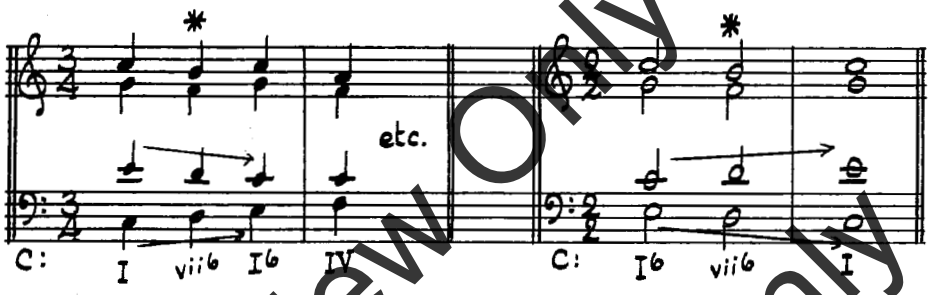


└Doubled 3rd in I required!┘

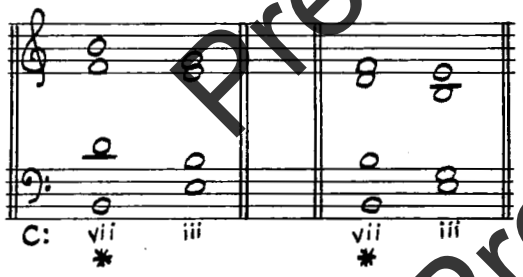
Continued examples of triadic "vii - I".



The vii^6 makes a nice "passing" chord between I and I^6, or vice versa:

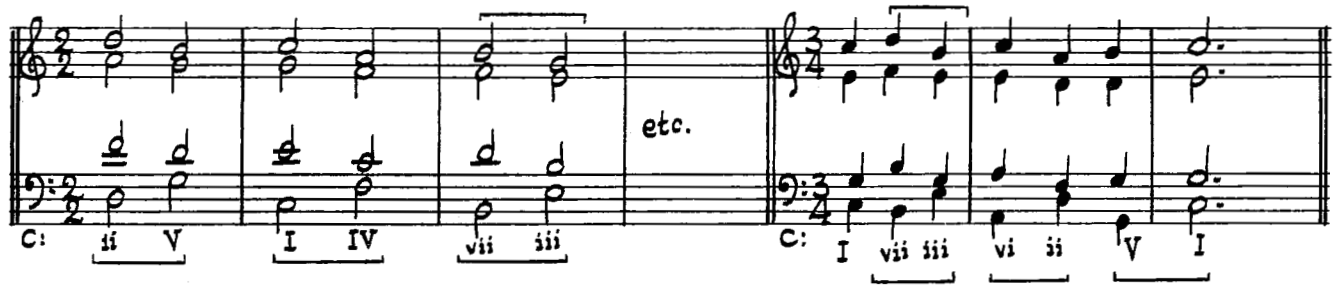


Also: vii can be used as an approach chord to iii. The strong "up 4" relationship between vii and iii carries with it the suggestion that vii is a "root" chord. To illustrate:

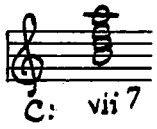


Note "doubled root" in vii! This would be unacceptable in "vii - I" but is OK here since it is NOT being used in the sense of a "leading-tone".

"vii - iii" appears to be infrequent in popular harmony, and is most likely to be found in a repetitive or "sequential" pattern, where the movement is used to preserve the symmetry of the repetitive pattern. Here are two examples:

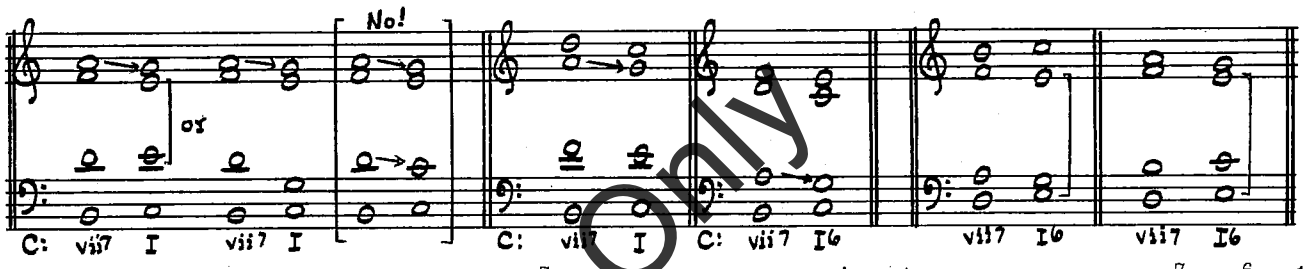


B. vii^7 CHORD



This chord is really an incomplete "Dominant 9th" (V^9) chord, and is usually used with all of its four notes.

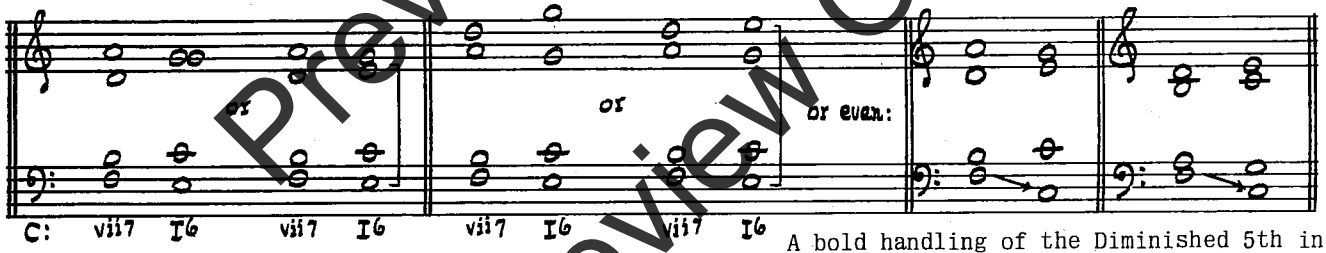
Function: Mainly "Dominant". Here are some representative examples of "vii^7 - I". The 7th falls, but an occasional irregular resolution of the diminished 5th may be required, and a doubled 3rd in I may sometimes be necessary. The examples include 1st and 2nd inversions of vii^7, as well as its root position, but the 3rd inversion is not practical since it will resolve to I^6_4.



"Root" position vii^7 - I.

1st inversion vii^7 - I^6.

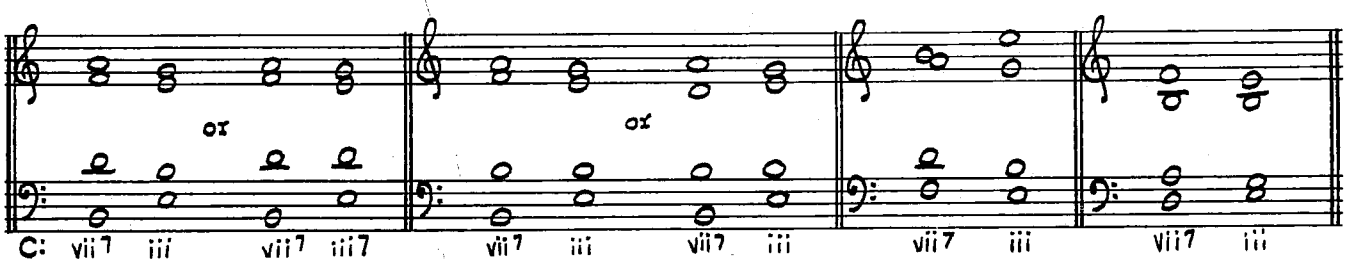
("I^6" required from 1st inversion of vii^7. Root position I would produce parallel 5ths with the falling 7th in vii^7.)



A bold handling of the Diminished 5th in the bass, but composers' usage shows some precedence for this.

2nd inversion vii^7 - I^6

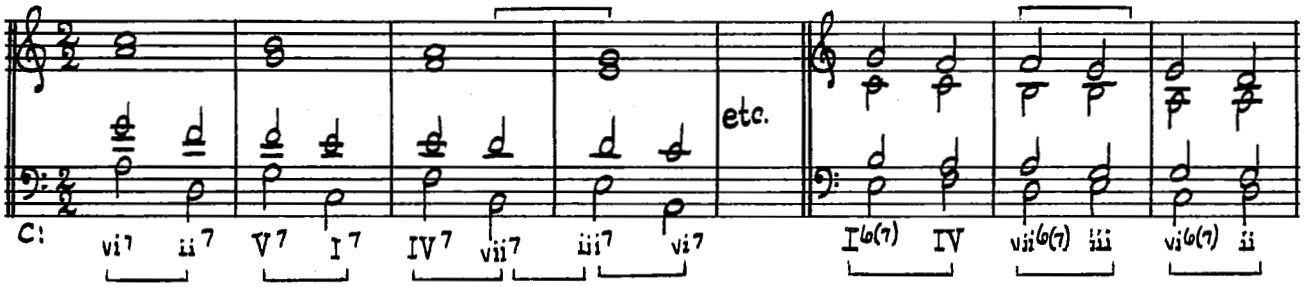
Also: vii^7 can be used as an approach chord to iii. A root position solution is most likely, but situations calling for 1st or 2nd inversions of vii^7 could occur:



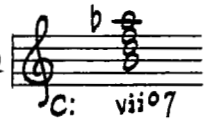
(Omitted 3rd) (Omitted 5th) (2nd Inv.) (1st Inv.)

less usual *abbreviated* forms of vii^7.

"vii^7 - iii" is most likely to be useful in repetitive patterns, where it will preserve symmetry, as:



C. vii^{07} CHORD



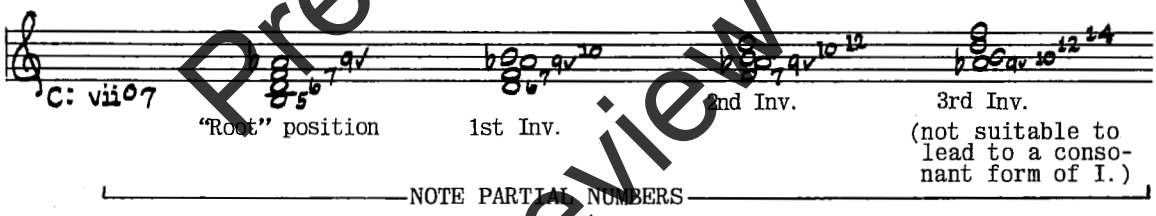
This is our second encounter with the use of the *Minor Submediant* in major (the 1st: "IVmi"). The vii^{07} chord is "borrowed" from Harmonic Minor and, in popular and Romantic harmony, is *by far the most commonly used form of the vii chord!* (In fact, there are probably many arrangers who have never used any other form of vii.) The qualities which have led to its popularity are:

a. A pronounced "forward motion"

b. An ambiguous neutrality due to its symmetrical construction (four-way equal division of the octave.)

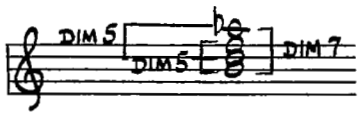
c. An obvious "warmth" which suits it to Romantic harmony.

It is usually used with all of its four notes. Any position is acceptable since it sounds the same in all positions, but when leading to I the 3rd inversion of vii^{07} is not practical, since it leads to I$^6_4$:

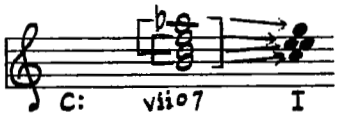


Function: Primarily "Dominant". In fact, with the exception of "vii^{07} - V" (see below) vii^{07} is exclusively used to lead to I.

Voice leading: All notes in vii^{07} are theoretically dissonant, as:

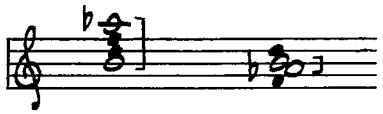


and the regular resolution of all will lead to I with a doubled 3rd:



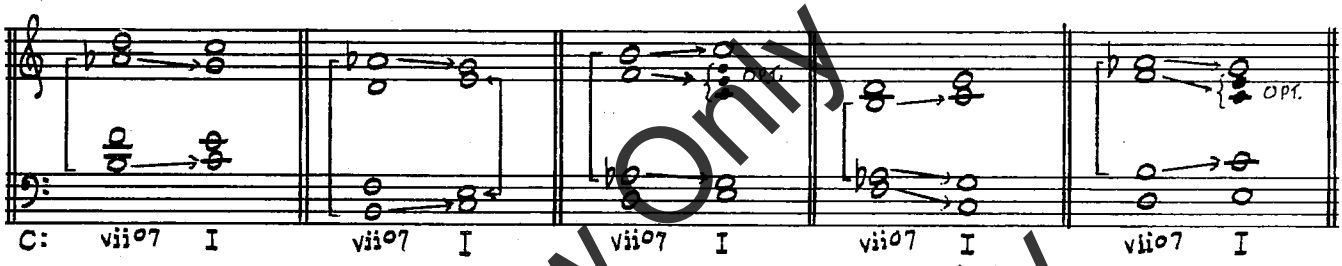
But, as the ear will substantiate, the main or *characteristic* dissonance in vii^{07} is the interval of the diminished 7th itself (or its inversion, the Augmented 2nd).

Example:

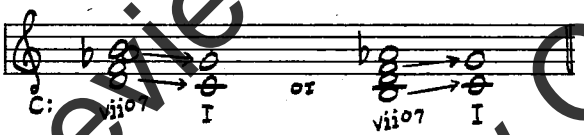


Characteristic dissonance

As long as this *characteristic* dissonance **receives regular resolution**, the ear will not be disturbed if the 3rd and 5th of the chord aren't resolved, provided no parallel 5ths occur. Examine closely the following representative examples of "vii^{07} - I". Note that the *root* and diminished 7th are accurately resolved in *every* case; but the doubled 3rd in I can often (not always!) be avoided with an irregular movement of the 3rd or 5th of vii^{07}:

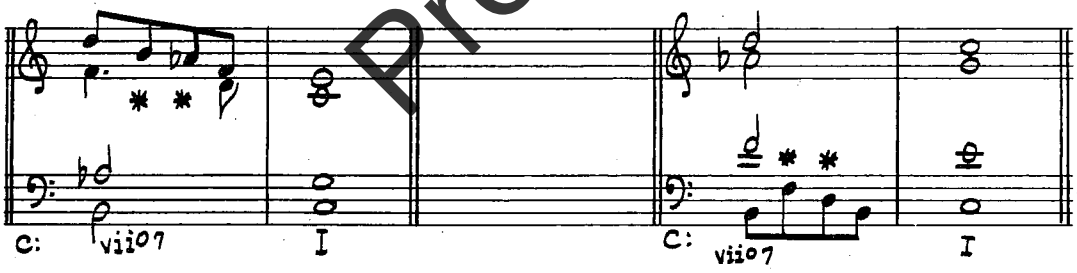


Main Point: Beware of:

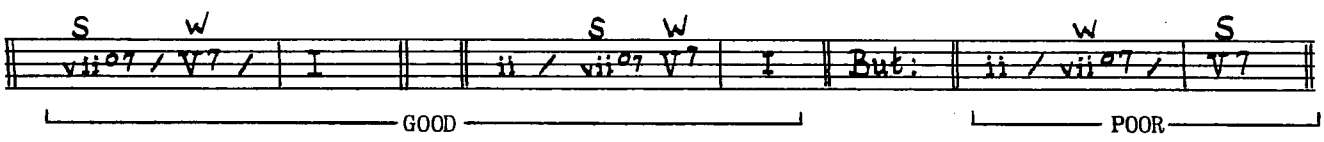


Both are unacceptable!

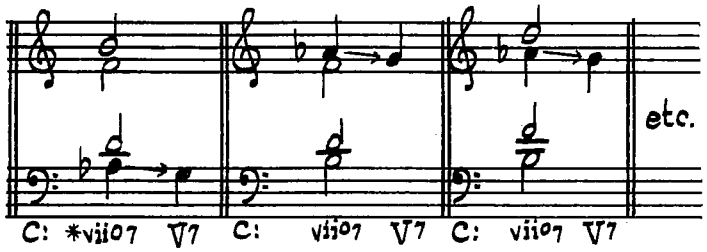
An "arpeggiation" of vii^{07} will probably require brief irregular doubles and/or omissions. Try to have a full construction of the chord at the point of resolution, however, so that it can be resolved gracefully to the I:



The movement of vii^{07} to V^7 can sometimes be useful. (Not to V *triad* however; too much loss of energy!) Since "vii^{07} - V^7" is a movement from **dominant harmony** to **dominant harmony** it should occur from **strong to weak** only, as:

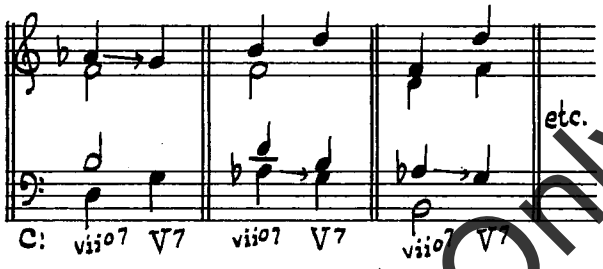


The movement vii^{o7} - V^7 can be accomplished simply by moving the minor submediant (the dim. 7th) down to the dominant, as:

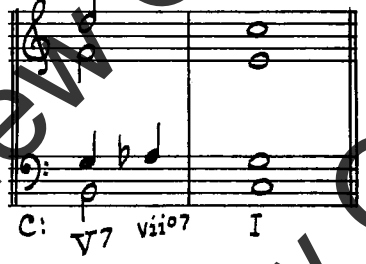


***Note acceptable use of the 3rd inversion of vii^{o7}.**

Since "vii^{o7} - V^7" is NOT a *change of harmony,* but merely a *change of form* of the same harmony, the other parts can change position while the Minor Submediant is falling to the Dominant.
To illustrate:



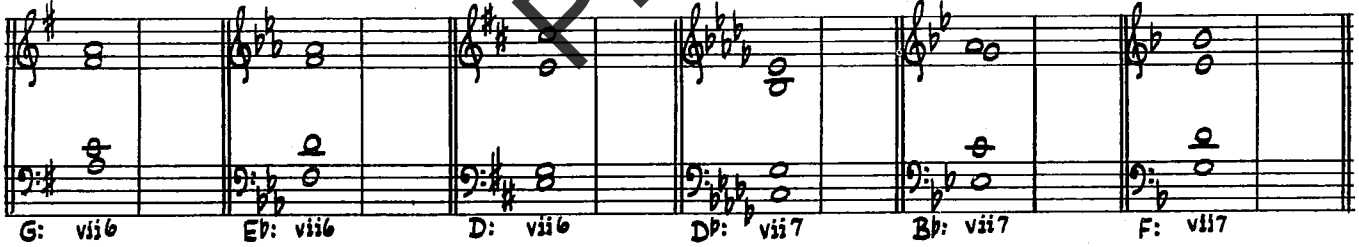
Also, the use of "V^7 - vii^{o7}" may sometimes be valuable for movement, as:

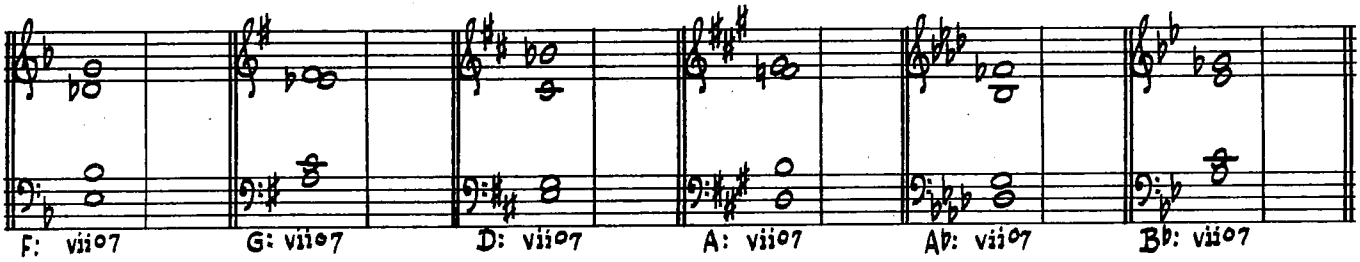


To Sum Up: The vii is primarily a **Dominant Function** chord. In the situation calling for "V - I", feel free to replace V with any of the forms of vii (and vice versa). The vii is normally approached from any chord that can precede V.

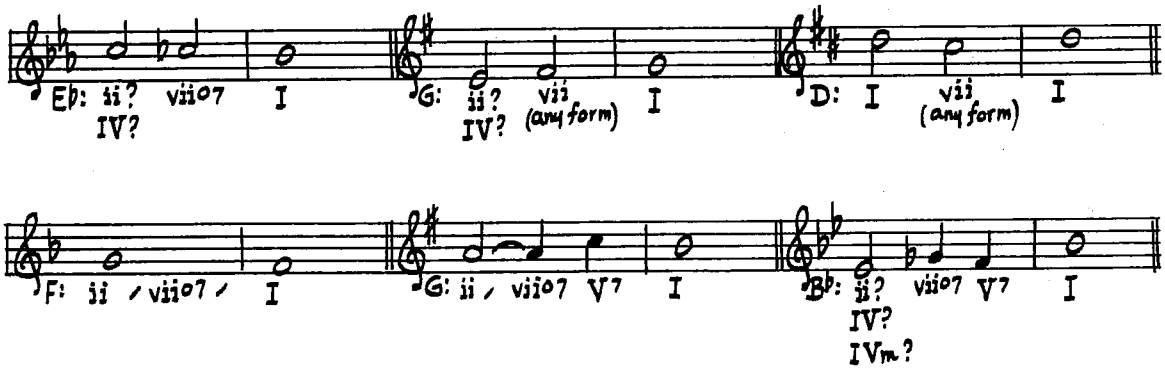
ASSIGNMENT 31 (The vii Chord in Major)

1. The following are vii triads, vii^7, or vii^{o7} chords. Resolve each to I or to I^6 as required. Avoid the doubled 3rd on I if practical to do so, otherwise use it!



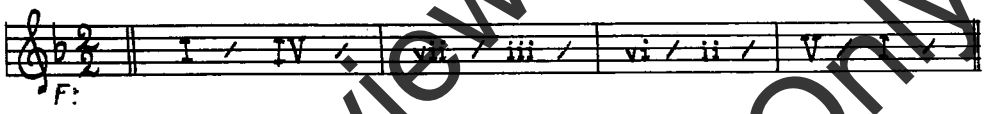


2. Lead lines given. Complete for four parts. (Root position or 1st inversion available on all chords; also 2nd inversion of any form of vii.)

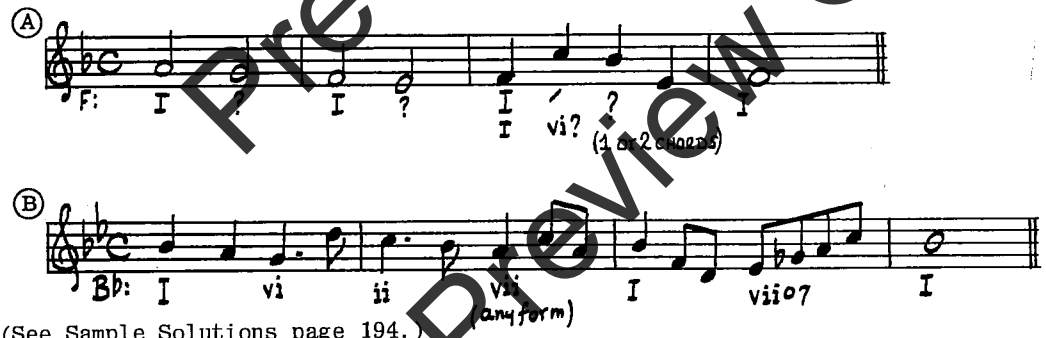


3. Work out the following short passages for four parts (2nd inversion available on vii chords only).

4. Work out the following in a "sequential" manner (i.e., with repeated patterns). Use root positions.



5. Lead lines are given. Complete for four parts. (2nd inversion available on vii chords only.)

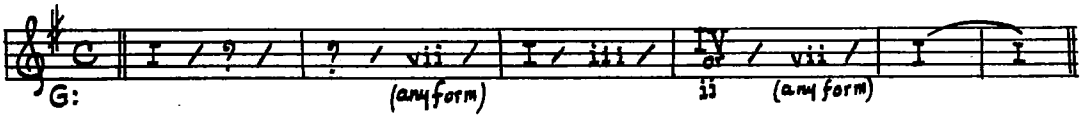


(See Sample Solutions page 194.)

6. Progression suggested. Work out two examples in four parts. 2nd inversion available on vii chords only, and remember that the Diminished 7th form of vii is the most likely.

a. No eighth notes.

b. Some eighth notes.



Chapter 8

Chord Progression In

MINOR

INTRODUCTORY:

Throughout this chapter certain references will be made to the Dorian Mode, and an occasional "free" use of the "Dorian 6th" will be suggested; but, in the main, the Minor Tonality consists of three scales:

Aeolian Mode ("Natural Minor")
Harmonic Minor
Melodic Minor
} **Artificial or "Musica Ficta" Modes**

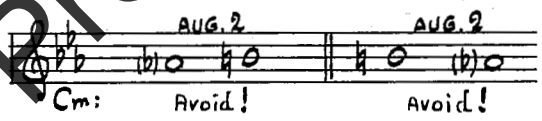
The Musica Ficta notes (raised 6th and 7th degrees) are chiefly used with respect to the principles of the Melodic Minor Scale, up and down. (Refer to "The Minor Tonality" in Chapter I, and to the examination of the chords in Minor in Chapter III.)

The basic principles of chord movement and voice leading are no different in Minor than they are in Major, but the different nature and construction of Minor does present certain hazards, and certain opportunities, not found in Major. The main differences are these:

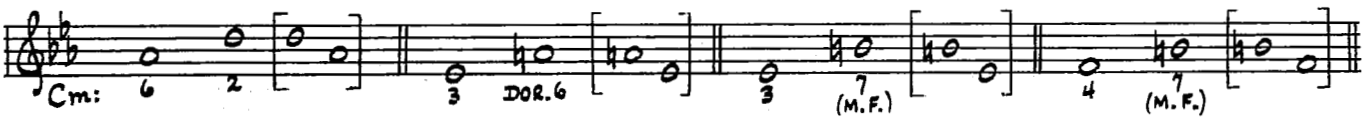
1. **More hazardous voice leading.**

   There are more awkward interval leaps lurking in Minor, Augmented leaps in particular. While it would be improper to forbid them entirely, it has been my experience that Augmented leaps cause poor voice leading more often than any other single factor!

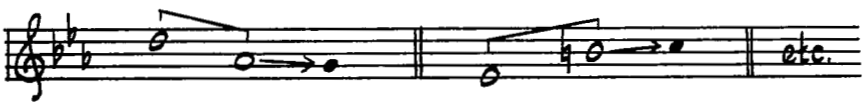
   Unless for a specific "melody" purpose, it is wise to avoid the linear use of the Augmented 2nd found in the Harmonic Minor scale:



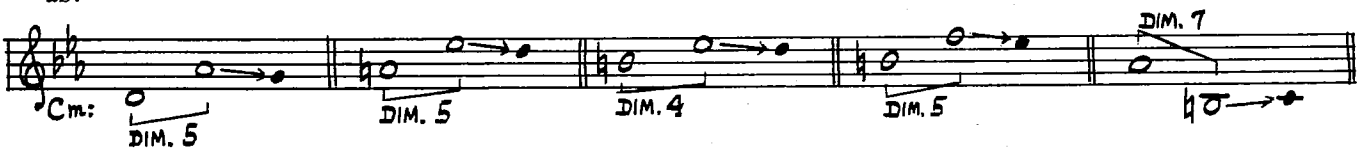
   Other Augmented leaps that are best avoided include:



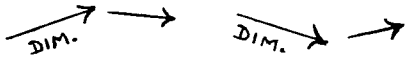
   When any of these Augmented leaps are *necessary*, resolve them with the following note, as:



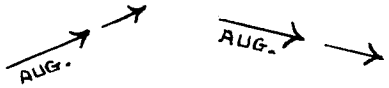
But the **Diminished** inversions of these leaps are *quite acceptable,* provided they are resolved, as:



Reason: "Action and Reaction". Diminished intervals leap *up* to "Down" notes or *down* to "Up" notes; consequently, they contain their own reaction:

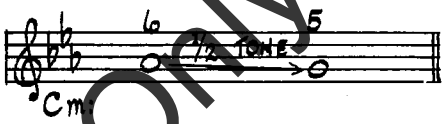


The Augmented leaps must continue in the same direction, however, to achieve resolution; consequently, there is less control of energy:



2. The Minor Submediant

The unaltered 6th degree in Minor is situated only a half-tone above the attractive dominant, and shows a clear *scale tendency* to fall:



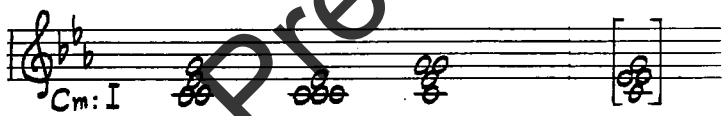
As a result of this "Minor Submediant to Dominant" tendency, it will be seen that certain progressions which involve it (such as "vi - V") are more successful and more frequent in Minor than they are in Major.

I. THE PRIMARY CHORDS (I, IV, V)

In general, Minor makes use of less harmony than does Major. Considering the wealth of harmonic color available in Minor, this may be unfortunate, but it is indicative of the fact that the simple harmonies in Minor are more colorful than their counterparts in Major. The simple chord relationships in Minor often provide sufficient interest and warmth, and the harmony of a great number of familiar minor melodies employs little more than the Primary chords.

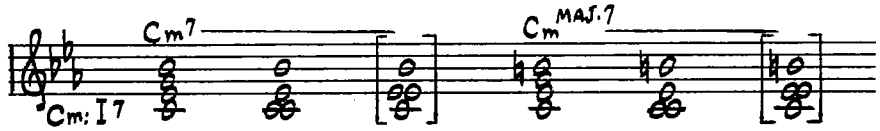
A. The Tonic Chord (I)

Structure: Triad:



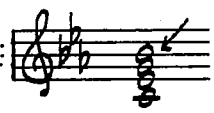
BEST OK OCCASIONAL IRREGULAR (use if clearly demanded by the voice leading.)

7th Chords:



With Minor 7th — With Major 7th

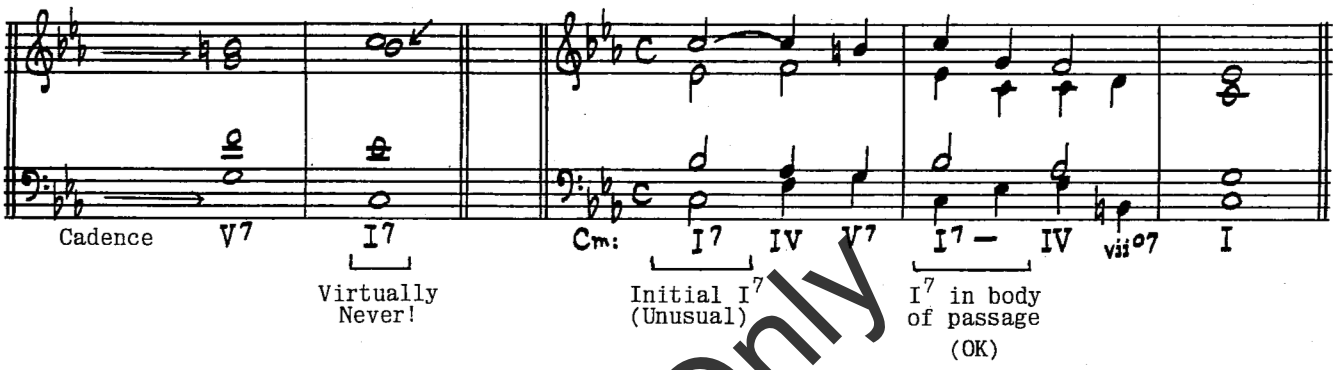
1. THE MINOR 7TH ON I:



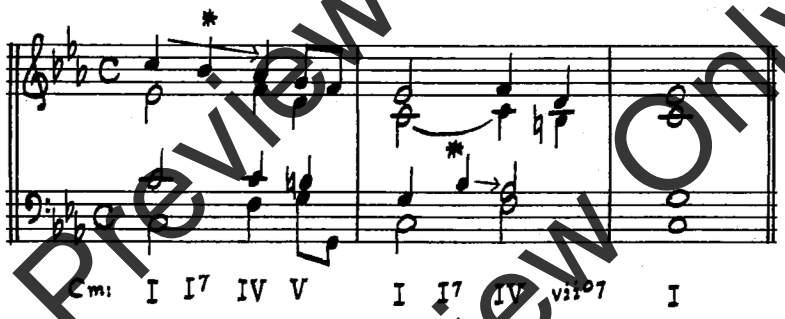
As noted earlier, the Minor 7th creates instability, and a loss of the *Tonic* quality. Therefore:

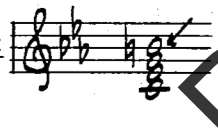
Minor 7th is not normally used on a final I.
It is only rarely used "harmonically" on an initial I.
It is sometimes used "harmonically" on a I in the body of a passage.

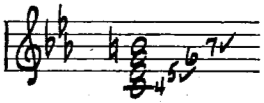
Examples: (illustrating use of a Minor 7th "harmonically" on I)

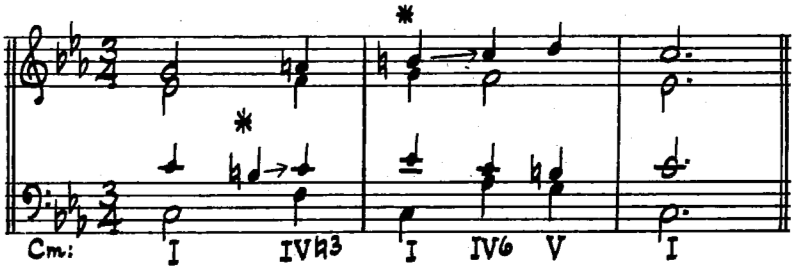


On the other hand, the use of a Contrapuntal Minor 7th on I is entirely available, and subject only to proper resolution:

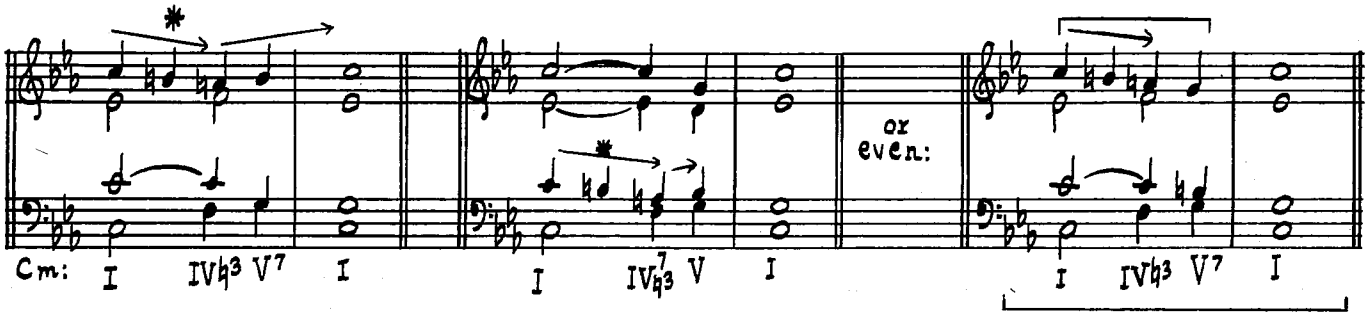


2. THE MAJOR 7TH ON I: 

This chord has "sharp dissonance" and 50% distortion:  It may stand out rather prominently in a normal context. Used *harmonically* or *contrapuntally* the Major 7th will normally rise, provided it is not below the root. To illustrate:



However, the following "idiom" is worth SPECIAL attention:

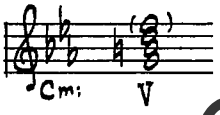


"Backwards" Musica Ficta (i.e., *downward* use of ascending Melodic Minor scale.)

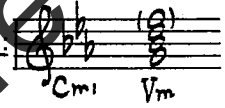
Finally, the *Tierce de Picardie* (see page 81) is available to taste. It is most often confined to the final I, but its use in the body of a passage is quite possible.

B. The Dominant Chord (V)

Two forms:

1. THE "TONAL" V: 

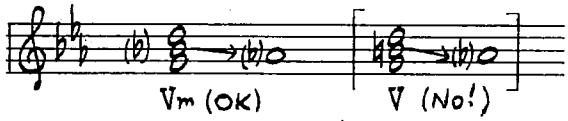
This is the *Regular* form and is by far the more common. The term "V" in Minor will normally refer to the Tonal V.

2. THE "MODAL" V (Vmi): 

This is the Irregular form. It can be used:

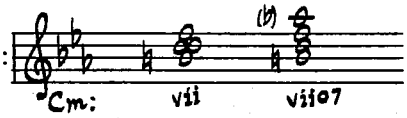
a. for the specific quality of a "Modal" cadence.

b. for voice leading. For instance the *subtonic* in Vmi is free to fall:



The "Modal-Tonal" cadence is also available. For further material on these chords see earlier text on cadences in Minor (Chapter V).

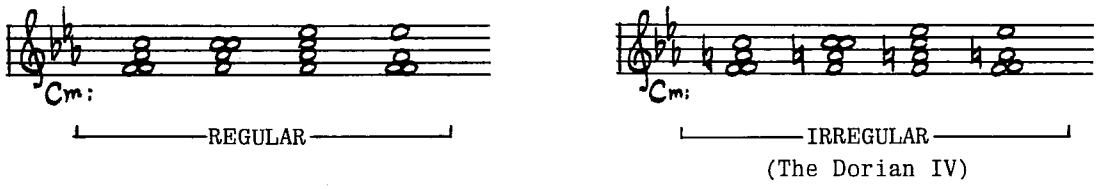
Further, the *regular* Musica Ficta vii chord is available at any time as a substitute for V when moving to I.

Regular vii (Musica Ficta): 

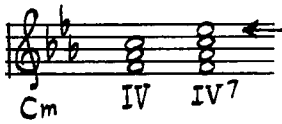
See notes on vii and vii^{07} in Major (Chapter VII). This is the *same chord* and is subject to the *same considerations*.

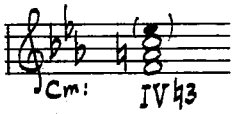
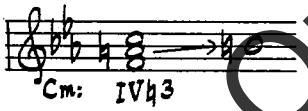
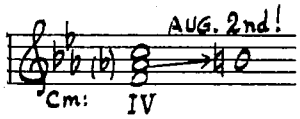
C. The Subdominant Chord (IV)

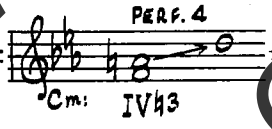
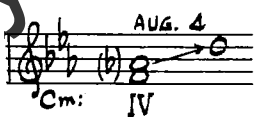
Two forms:



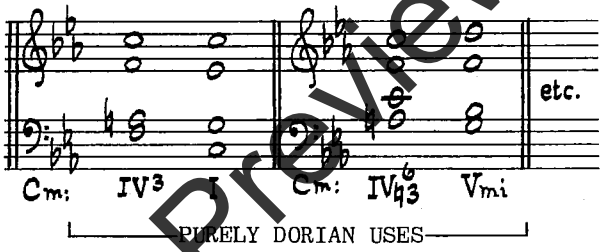
Function: "Subdominant" (i.e., to precede "V") or "Plagal" (i.e., to lead to "I"). It may, of course, receive any other use consistent with logical voice leading and progression.

The Minor (unaltered) IV is Regular:  subject to resolution

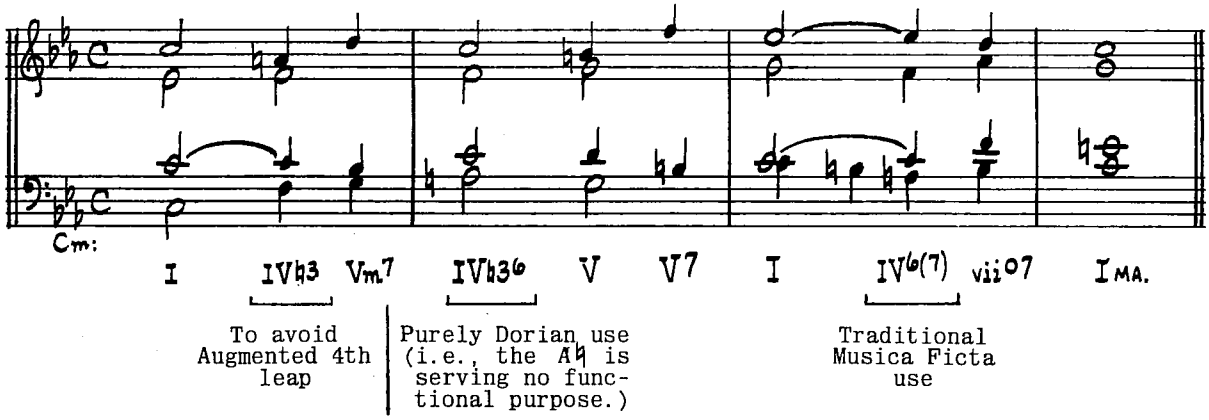
The Major IV:  is traditionally used with respect to the principles of the ascending Melodic Minor scale, as this:  to avoid this: 

This is the "logical Musica Ficta" process, of course, and it remains as the main use of the Major IV chord in Minor! There is precedence for its use as a means of avoiding the Augmented 4th leap from the unaltered 6th up to the 2nd degree, as this:  to avoid this: 

Further, it may be used more casually for a Dorian reference, as:



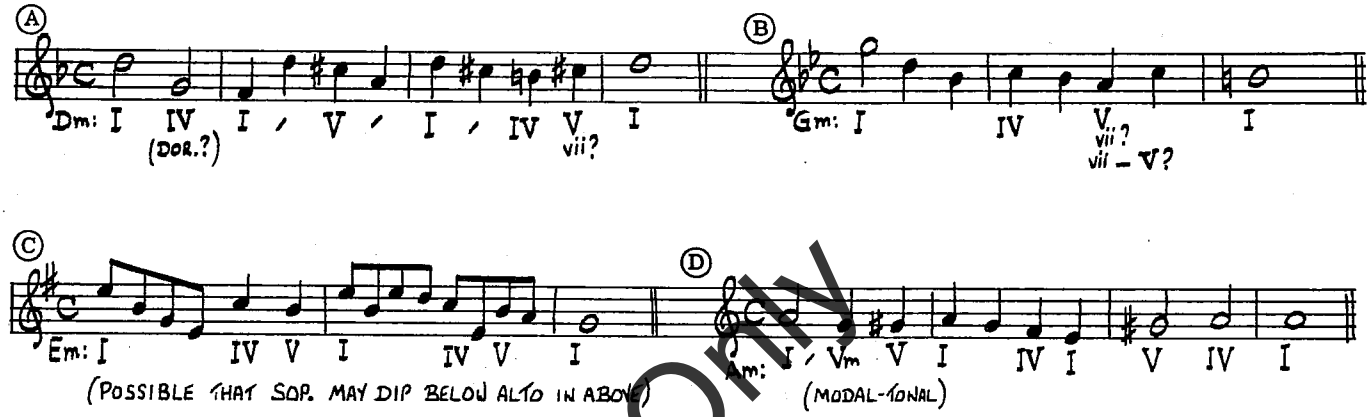
Example illustrating use of *Irregular* IV:



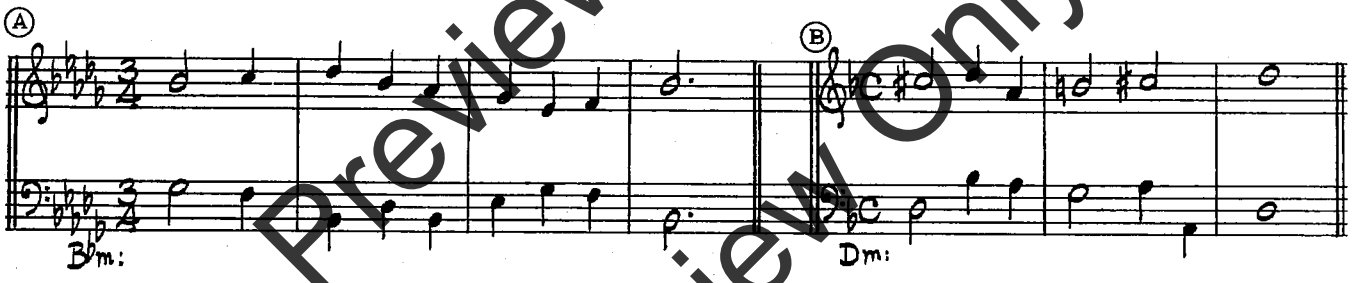
ASSIGNMENT 32 (Primary Chords in Minor)

Note: Only the chords indicated in the following exercises; but root position and 1st inversion are available (and vii can be used in 2nd inversion). Of course, 7th chords may be used.

1. Lead and harmonies given. Complete for four parts: (See Sample Solutions page 194-195.)

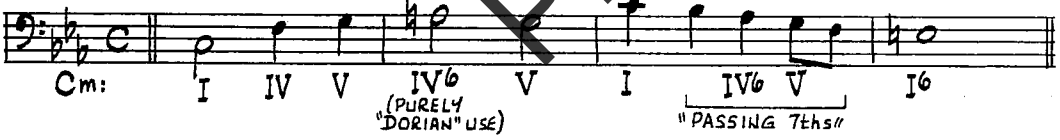


2. Soprano and bass given. Add the inner parts, using only Primary chords.



3. Bass line given. Add the upper parts with perhaps a few eighth notes.

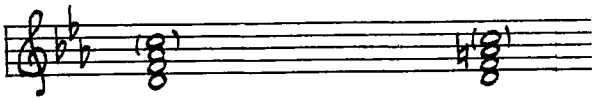
(See Sample Solutions page 195.)



4. Progression suggested. Work for four parts. Two examples: a. No eighth notes
b. Some eighth notes

5. **The ear:** Become familiar with, and develop the ability to recognize the various combinations of the Primary chords in Minor, in their Regular and Irregular forms. Examine the harmonies of any familiar minor melodies to note the use of the Primary chords.

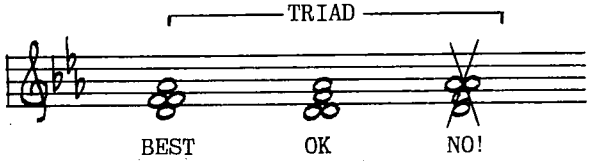
D. The ii Chord

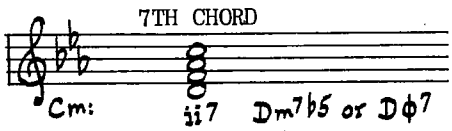
two forms: 

REGULAR IRREGULAR

(The Musica Ficta Dorian ii)

1. THE REGULAR ii:

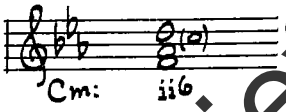
Structure: 



Full 7th chord only! *Do not omit the 5th of ii in minor. The 5th is its "characteristic" tone!*

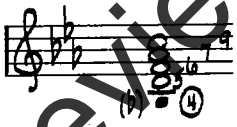
Quality: Diminished, dissonant, romantic. Receives wide use in popular harmony.

Preferable position: 1st inversion, which places the consonant Tonal note in the bass:



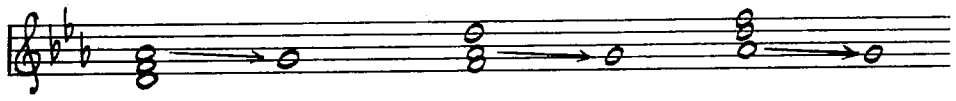
(The "Fmi^{6}" symbol encountered on sheet music and lead sheets is usually really the "Fmi$^{7}\flat5$" in 1st inversion!)

Writers appear to have shown a preference for the sonority of the 1st inversion of this chord; but root position is available, and the *2nd inversion* can be very effective! (Since this is a Diminished chord it is NOT subject to the problems which beset the 2nd inversions of major and minor chords, which are examined in the next chapter. Therefore *it may be used at any time,* provided the Diminished 5th in the bass receives proper resolution.)

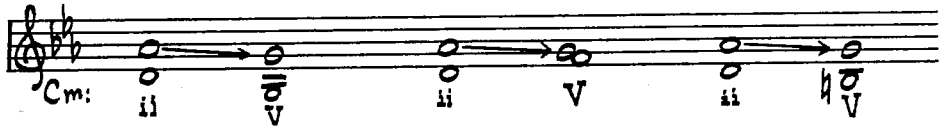
Acoustical root: (note partial numbers)  This creates the Irregular vii chord, which receives a somewhat different usage. (See page 167.)

Function: Mainly Subdominant (i.e., it most often moves to V).

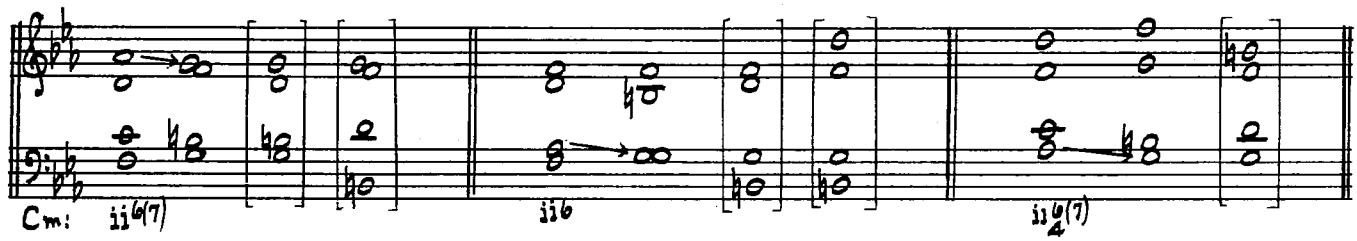
Details: The Diminished 5th will fall to the root of V, as:

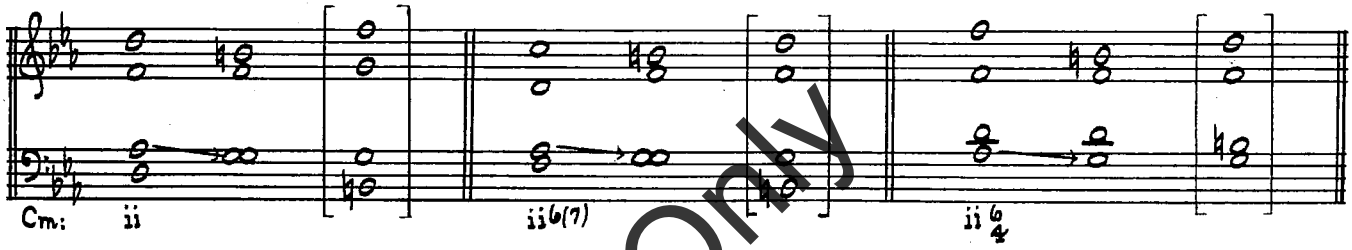


The root of ii may be regarded as "free" and can leap. The root and Diminished 5th are NOT heard as a "dissonant <u>interval</u>"; rather, the Diminished 5th itself is heard as a "dissonant note". Therefore, the obligation to resolve rests *solely* on the Diminished 5th. The following movements are all OK:

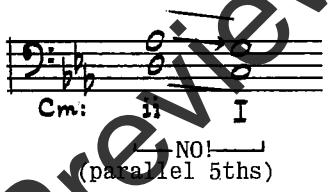


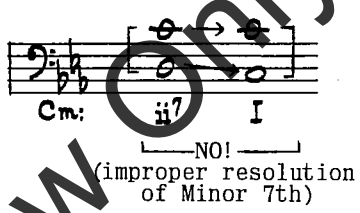
Here are a few examples of ii, ii^6, and ii^6_4 moving to V and V^6. "Tonal" V is used, but the "Modal" V would be satisfactory in most cases. The 7th of ii will normally fall one step, but in line with the principles of "Irregular resolution of Minor 7ths", can sometimes be directed elsewhere.



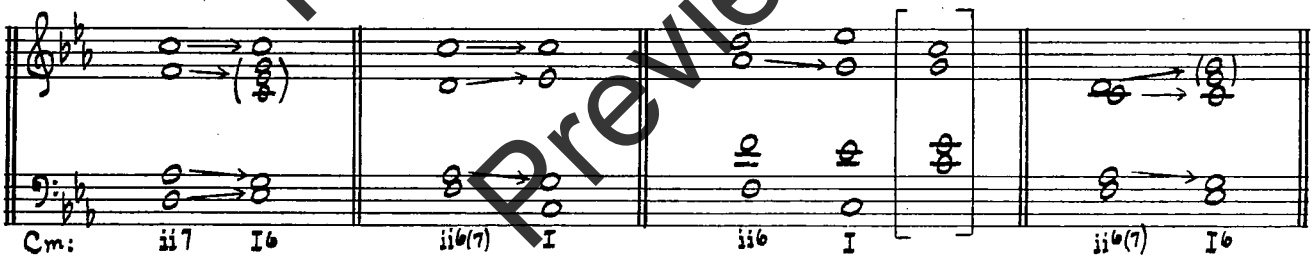


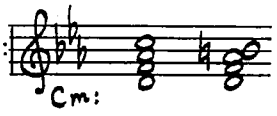
Further: The ii can perform the *Plagal* function, and proceed directly to I. Caution: both chords cannot be in root position:

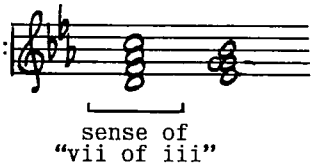




Examples:



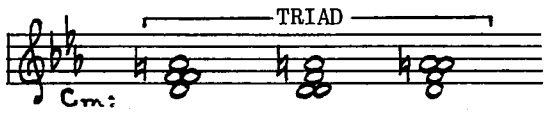
Further: ii - vii^{07} is fine: 

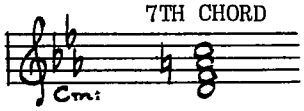
ii - iii is fine: 

or to anywhere else consistent with logical voice leading and resolution.

2. THE IRREGULAR ii:

Structure:



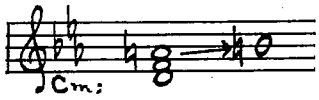


Full 7th chord only. Again, the 5th here is the "characteristic" tone and should not be omitted.

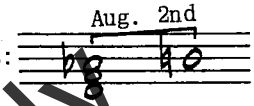
Quality: Minor

Function: The chief traditional use of the Musica Ficta ii chord is with respect to the principles of the ascending Melodic Minor scale, as:

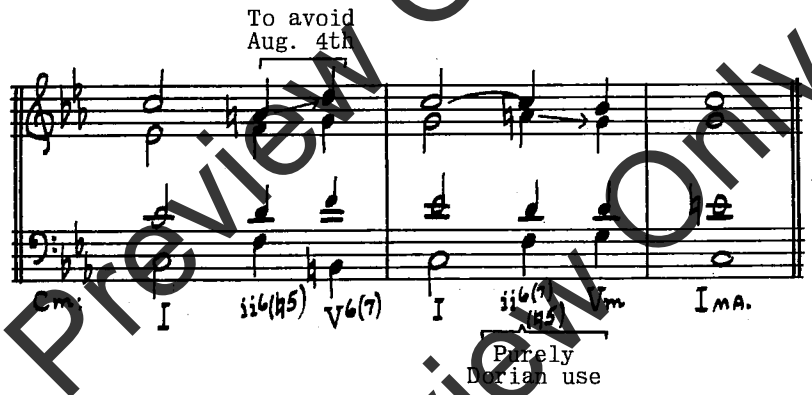
This:



to avoid this:



This is still its main purpose in life, but similar to the Irregular IV, it can be used to avoid the awkward leap from the unaltered Submediant up to the supertonic, or it can be used simply for a Dorian sound. To illustrate:



ASSIGNMENT 33 (The ii Chord in Minor)

1. (Drill) In various minor keys, write a number of examples of:

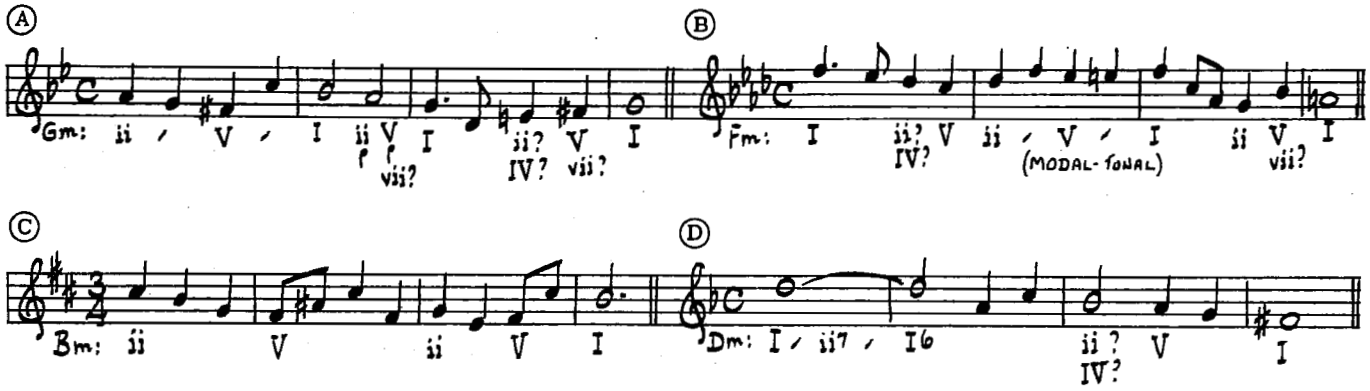
a. Regular "ii - V". Include: ii^6 - V, ii - V, ii^6 - V^6, ii - V^6. ii^6_4 - V.
Most examples to use ii^7. Mainly use Tonal V^7, but use occasional Tonal V triad and occasional Vmi or Vmi^7.

b. Regular "ii - I". Include: ii^6 - I, ii - I^6, perhaps ii^6 - I^6. (But NOT root position ii to root position I!) Mainly use ii^7.

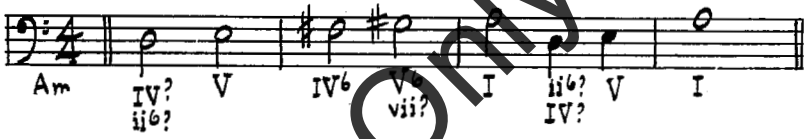
c. Irregular "ii - Tonal V" (likely V^7), with a *logical* use of the Dorian 6th.

d. Irregular (Dorian) "ii - Tonal $V^{(7)}$", or Modal $V^{(7)}$, in a purely Dorian manner (i.e., "free" use of Dorian 6th).

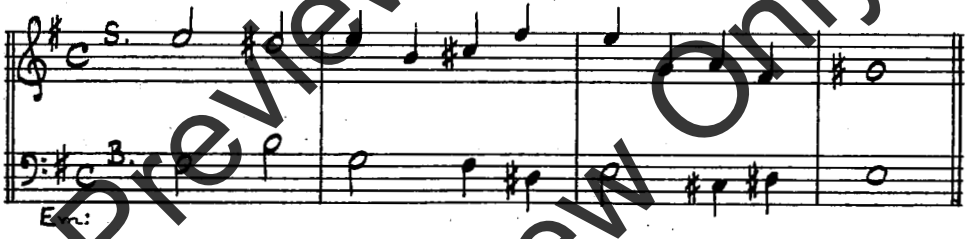
2. Lead is given. Complete for four parts. Root position and 1st inversion are available on all chords, plus the second inversions of Regular ii and vii. (See Sample Solutions page 195.)



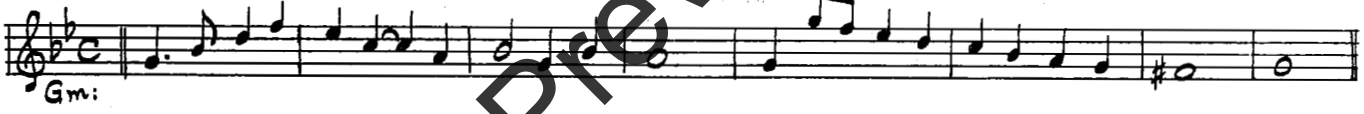
3. Bass line is given. Add the upper parts. Use no eighth notes, or very few. (Available: I, ii, IV, V and vii.)



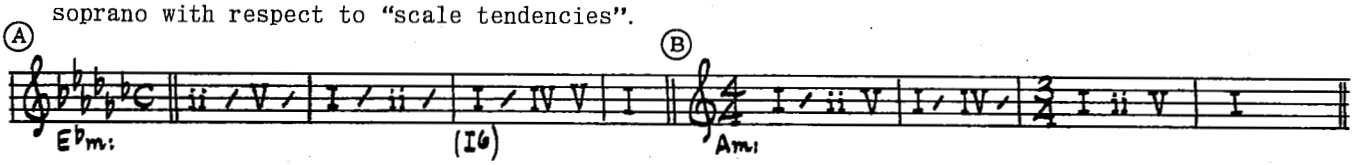
4. Soprano and Bass are given. Add the inner parts. (Available: I, ii, IV, V(vii).)



5. Soprano only is given. Complete for four parts. (Available: I, ii, IV, V(vii).) (See Sample Solutions page 195.)



6. Progressions are suggested. Work for four parts within the present restrictions. Control the soprano with respect to "scale tendencies".

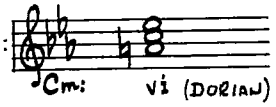


7. **The ear:** Become familiar with the sound of all of the "ii - V" combinations and the "ii - I" combinations. Examine the harmonies of familiar minor melodies for use of the ii chord. Note that the symbol "Fmi^{6}" (in the key of C minor) is really the 1st inversion of "ii^{7}"!

E. The Regular vi Chord

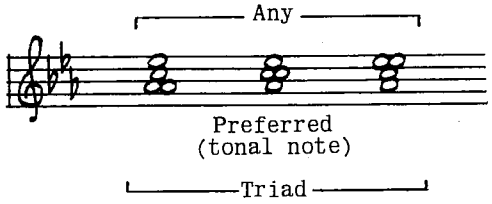
Similar to the other chords in minor, vi has two forms, **Regular:**

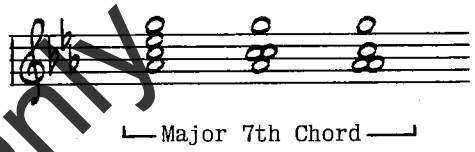
and **Irregular:**



Because it has certain distinctive considerations, this section will be devoted to the **Regular vi** only. It is one of the most versatile chords in tonal harmony, and warrants special attention.

Structure:



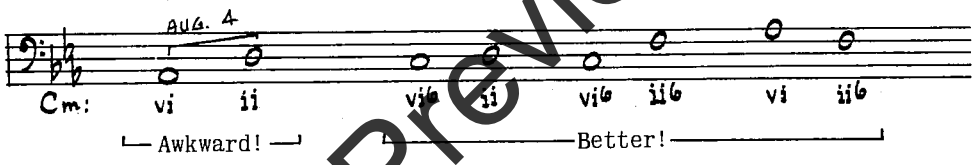


Quality: Romantic, Rich. It contains the two notes which are most characteristic of the Minor tonality - the Minor Mediant and the Minor Submediant.

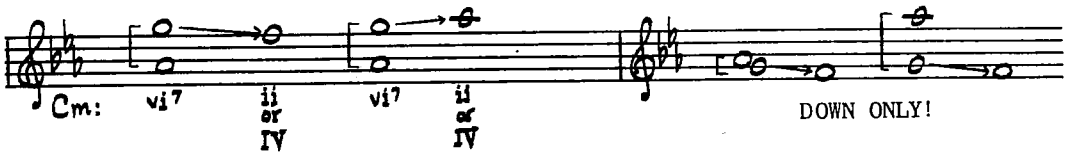
Function:

1. In the normal manner of vi chords, to precede ii or IV (Primary progressions). "vi - ii" is generally better than "vi - IV" over a bar line because it has more contrast.

Caution: Avoid an awkward bass in "vi - ii"! Root position vi up to root position ii produces an Augmented 4th leap. To illustrate:



If the *Major 7th* of vi is used in a "vi - ii" or a "vi - IV" progression, it will resolve up or down one step, except if the ROOT IS ABOVE IT, in which case it should resolve DOWN ONLY!
To illustrate:

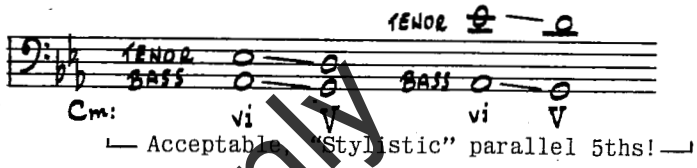


2. vi in minor *may also perform the subdominant function* (i.e., *move directly to "V"*)!

Reason: Natural scale tendency of the Minor Submediant.

Details:

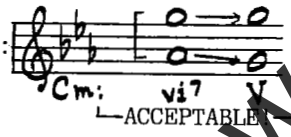
a. The parallel 5ths which are inherent in this progression *may be used between the two bottom parts!* While they are not specifically "chromatic", they are sufficiently similar to be acceptable. There is a "soft" quality in them which is quite unlike the sound of parallel 5ths by full step or leap, and the strong "pull" of the Minor Submediant toward the Dominant provides further justification. These parallel 5ths, and others of a similar nature which will be encountered later, are called **"Stylistic" Parallel 5ths** (i.e., parallel 5ths which are suitable to the "style" of a particular progression). They should be confined to the two bottom parts only; between any other two parts they are, at best, in questionable taste. So:



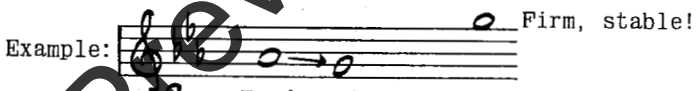
(It *isn't* <u>necessary</u> to use these parallel 5ths - although they are "acceptable", they <u>can</u> be avoided!)

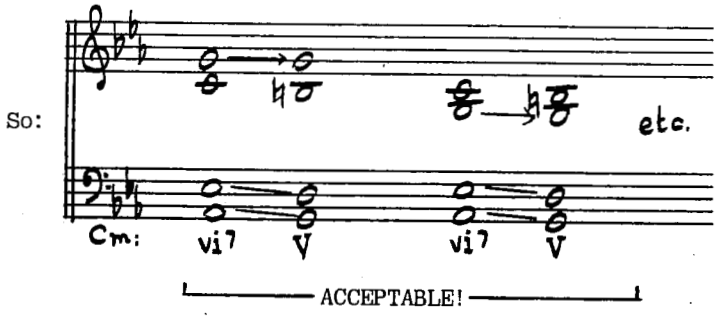
b. The Major 7th of vi, in a "vi - V" progression, *may resolve passively*, provided:

1. The Major 7th stands *above* the root.
2. The root *resolves* down to the dominant.



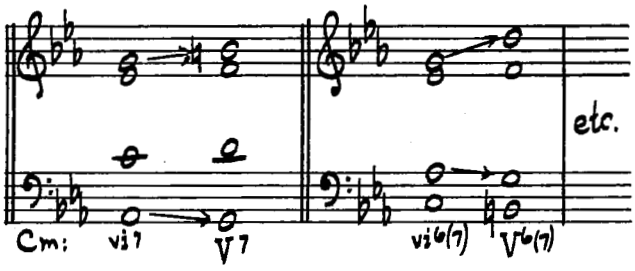
Reason: The ear can **hear** the Major 7th of vi, which is the *stable* **Dominant**, as **Consonant** and the Root, which is the *unstable* **Minor Submediant**, as **Dissonant**!



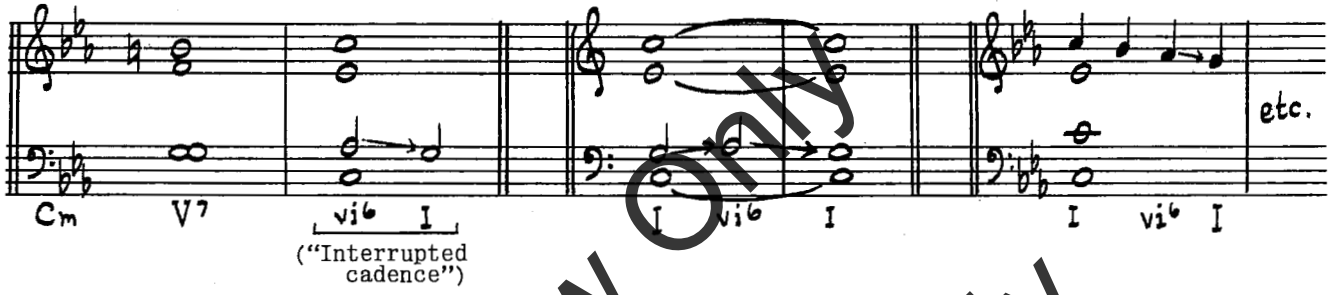


The above illustrates:
1. Passive resolution of Major 7th, root *resolving*.
2. "Stylistic" parallel 5ths.
   (See opening of "Night and Day")

Furthermore, it is even possible to *leap* from the Major 7th of vi in minor, provided the root *resolves* in a lower part, as:



3. "vi^6" can be used as an "elaboration" of the I chord. A bar or two of "I" can be elaborated into "vi^6 - I" or "I - vi^6 - I". To illustrate:



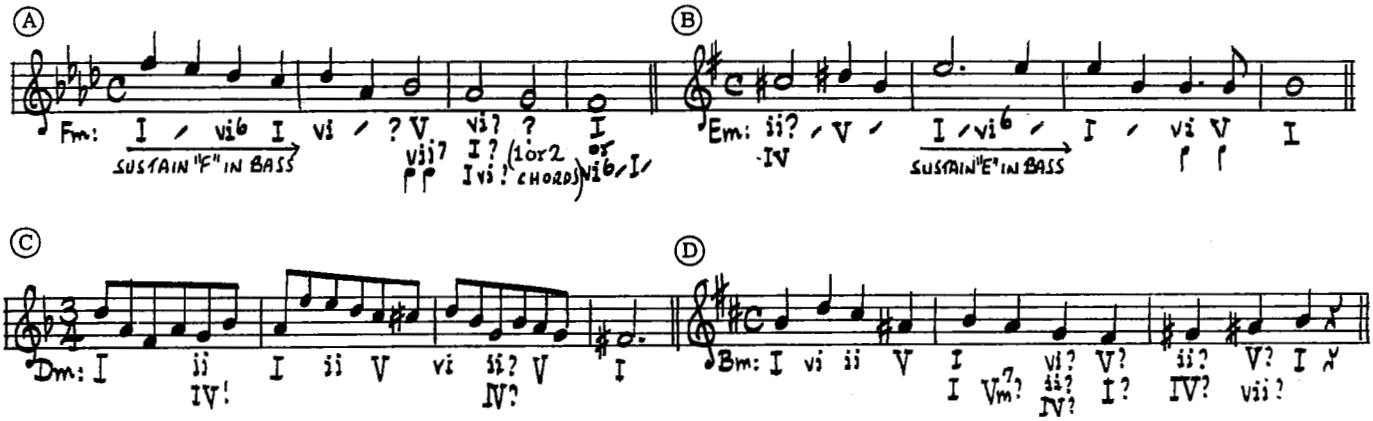
4. "vi" can be used in any other manner consistent with logical voice leading and progression.

ASSIGNMENT 34 ("Regular" vi in Minor)

(DRILL)

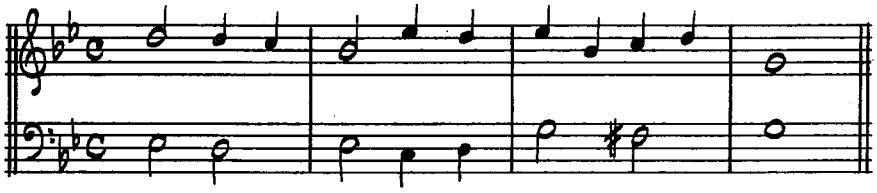
1. Work out a few patterns, in various minor keys, which employ the Regular vi chord. For instance:

2. Lead is given. Complete for four parts, WITHIN THE PRESENT RESTRICTIONS, noting the use of the Regular vi. (See Sample Solutions page 196.)



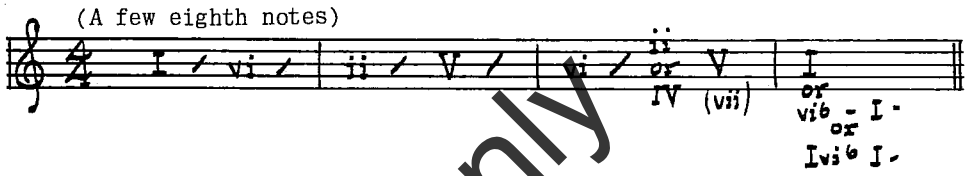
3. Add the inner parts. (Bass is on root or 3rd in every case.)

(See Sample Solutions page 196.)



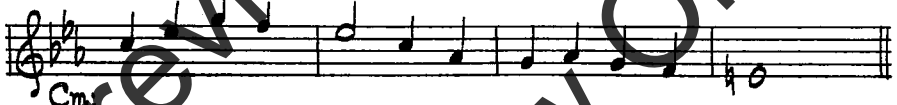
4. Progressions are suggested. Work for four parts, within the present restrictions. As always, strive for a graceful soprano, and keep sensitive to the tendencies in the notes.

a. A minor:



b. B♭ minor:

5. Lead only is given. Complete for four parts. (Available : I, ii, IV, V (vii), Regular vi.)

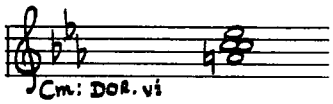


6. **The ear:** Become familiar with the sound of "vi - V" and the sound of vi used as elaboration of I. Locate uses of the Regular vi in familiar Minor passages.

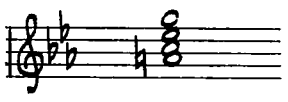
F. The Remaining Chords in Minor (Dorian vi, iii, vii)

1. IRREGULAR vi (Dorian vi)

Structure:

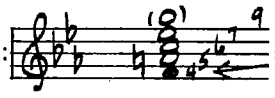


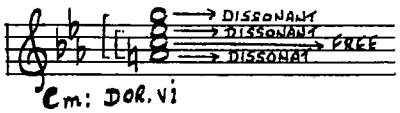
Doubled 3rd only

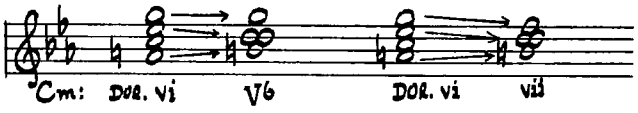


Full 7th chord only
Symbol: $Ami^{7\flat5}$ or $A^{\phi7}$

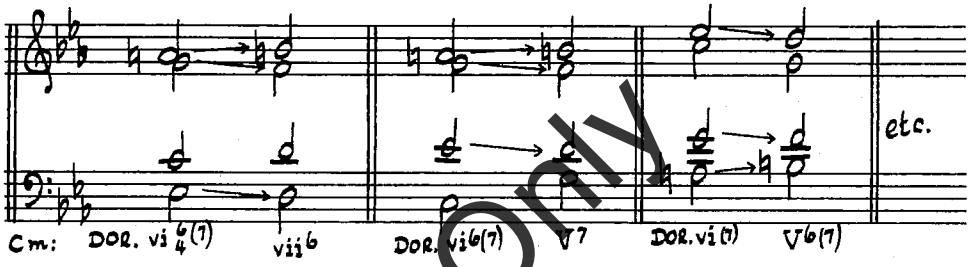
Quality: Diminished, Dissonant.

Function: The "acoustical root" of Dorian vi is the Subdominant:  and this is the clue to its main use. Mostly it is used as a "Subdominant Function" chord, resolving on to V or to vii. In moving to V or to vii, the voice leading is quite restricted; the only note which is theoretically free to leave is the 3rd, as:



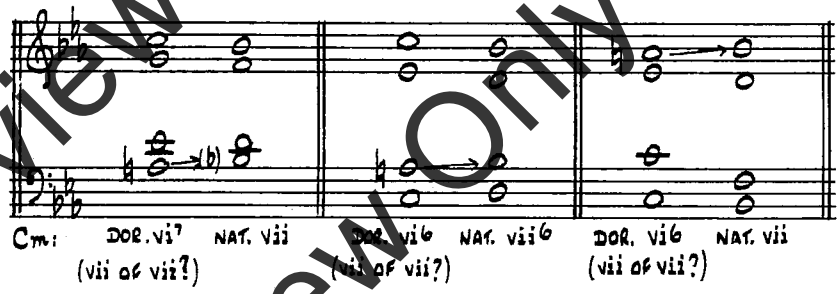
So: 

Examine the following examples. Note that, in common with the other diminished chords we have used, the second inversion is available, subject only to proper resolution of the diminished 5th in the bass:

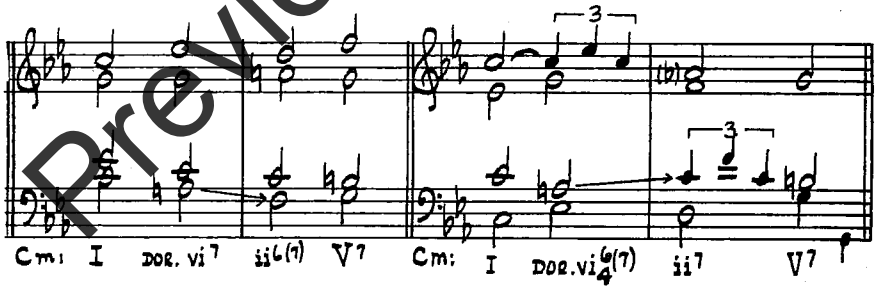


While the Subdominant use of Dorian vi is its most common role, other possibilities exist:

To move to *Natural* vii, in the sense of "vii of Natural vii":

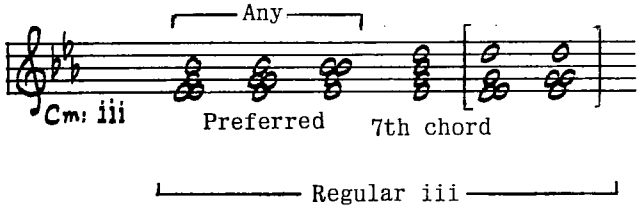


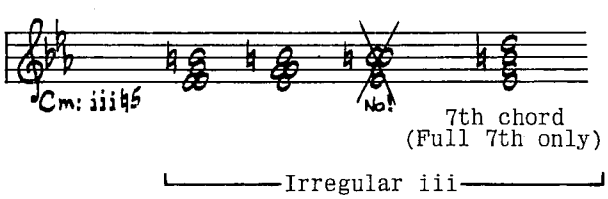
In a purely Dorian manner, with a free leap from the Dorian 6th:



2. <u>THE MEDIANT CHORD (iii)</u>

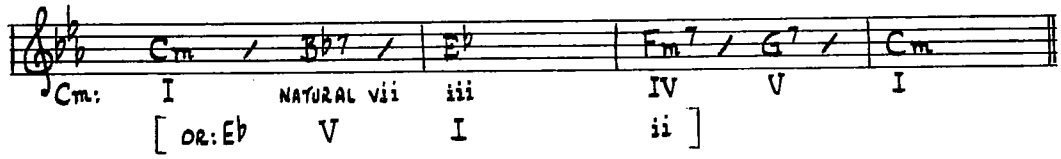
Structure: (two forms)





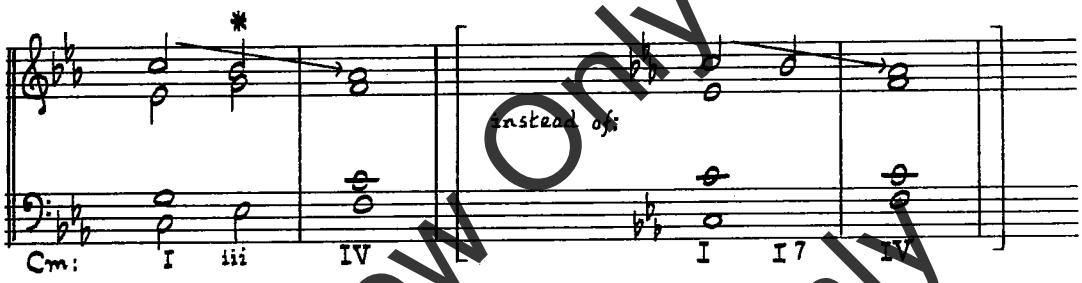
a. The Regular iii

This is a Major, Consonant chord. It is the *Tonic Chord of the Related Major,* and because of this, receives more frequent use than does iii in major. It is not unusual to encounter passages in minor which can equally be regarded as being in the *Related Major.* For instance:

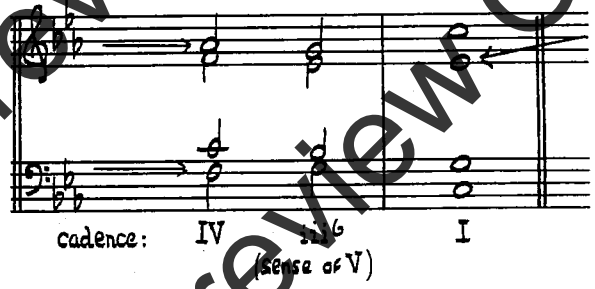


The iii enjoys two of the uses which does its counterpart in major:

1. The 5th of iii used in the sense of a "passing 7th" on I, such as:



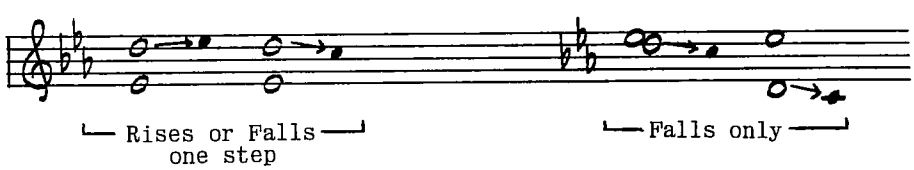
2. A cadential approach to I, using "iii^{6}" instead of V, as:



or E♮ (Tierce de Picardie) for more contrast.

Further, it may be used in any other manner consistent with logical voice leading and progression. The Primary movements "iii - vi" (up 4) and "iii - IV" (up 2) are fine, and because iii in Minor will always have a suggestion of "I" in the Related Major, it can move quite freely. The 7th, when used, will be subject to the principles governing the resolution of major 7ths, as:

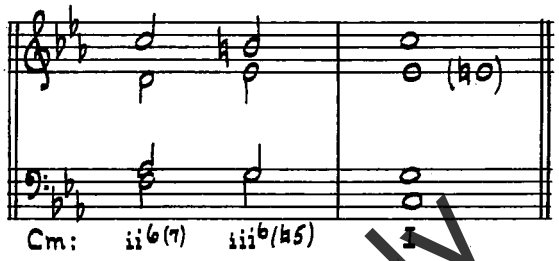
Above root: Below root:



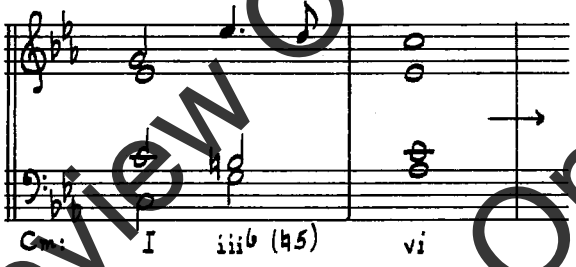
b. The Irregular iii

The Musica Ficta leading-tone in Irregular iii creates an augmented chord. In fact this is the only "non-chromatic" augmented chord in the standard scales. It does not appear to have enjoyed extensive use, perhaps because its "bright" augmented quality is somewhat at odds with the general feeling of the Minor Tonality. It can be valuable in some situations where the Augmented 5th can resolve. For instance:

1. In the sense of "V":



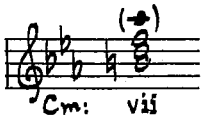
2. As an approach chord to vi (sense of "V+ of vi"?)



It is also valuable wherever it can receive proper resolution, without grammatical errors.

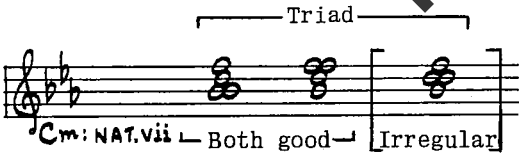
G. The "Natural vii" Chord

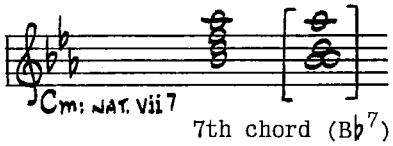
The usual form of vii in minor is the Regular Musica Ficta diminished chord:



The term "vii" is assumed to refer to the Regular form. This chord has already been examined, and the unaltered vii chord (Irregular vii) will be called the "Natural" vii in order to differentiate it from the Regular form.

Structure:





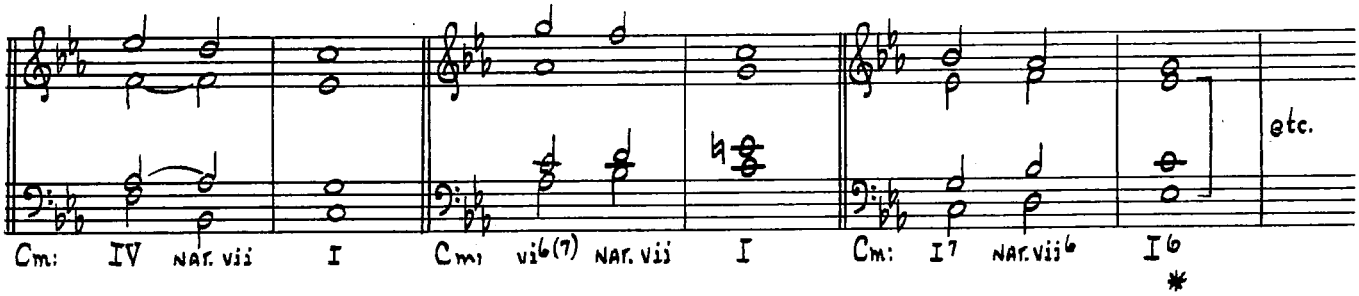
Quality: Major, with a suggestion of the "V" chord in the Related Major.

Functions:

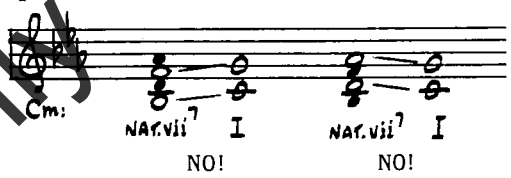
1. Because of its Dominant relationship to the Related Major, it will obviously make a good approach chord to iii (the tonic chord of the Related Major). To illustrate:

2. Natural "vii - I" is interesting, even cadentially. It has a quality somewhat similar to a "Modal Cadence", and also has a suggestion of a Deceptive "V - vi" in the Related Major!

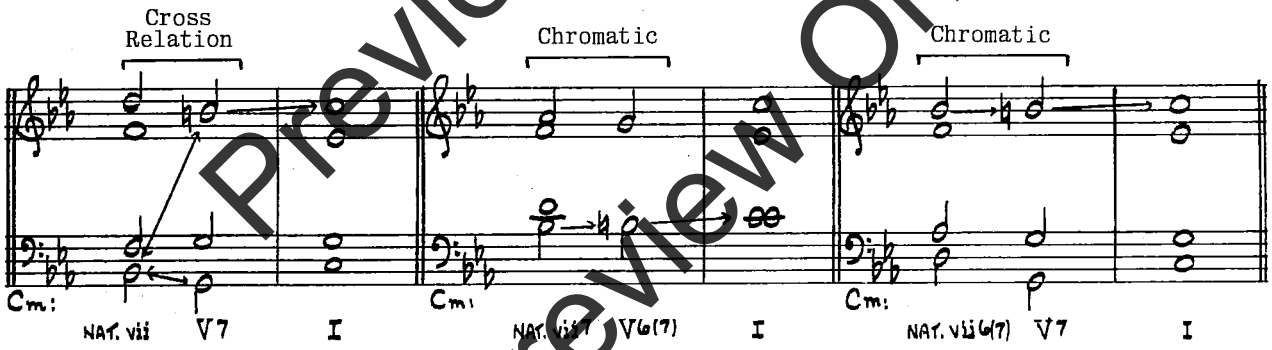
Examine:



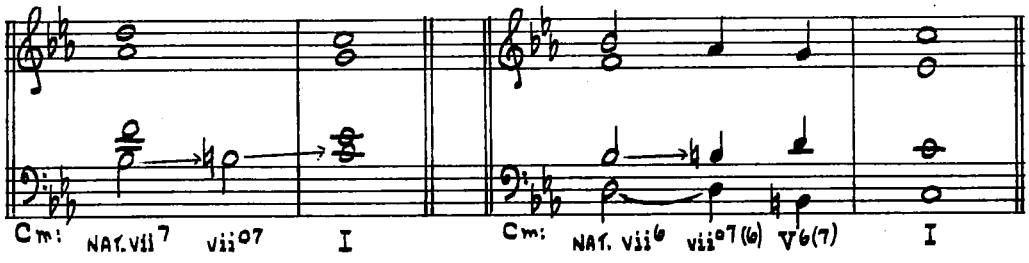
*NOTE: It may be necessary to double the 3rd of I in some voicings of Natural "vii - I", in order to avoid parallel 5ths. These are the traps to be avoided:



3. Natural vii can also perform the **Subdominant Function** (i.e., it may be used as an approach chord to V). (Note the "acoustical root" relationship between the Natural vii and the Regular ii.) The movement of Natural vii to Tonal V^7 can be done with a logical "cross relation" or it can be done "chromatically". To illustrate:



Natural vii can also move to the Regular "Musica Ficta" vii in an easy chromatic manner:

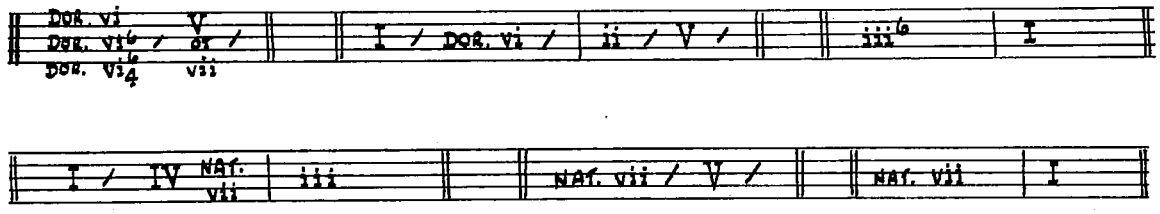


4. Finally, Natural vii may be used in any other manner consistent with logical voice leading and progression.

ASSIGNMENT 35 (The Remaining Chords in Minor)

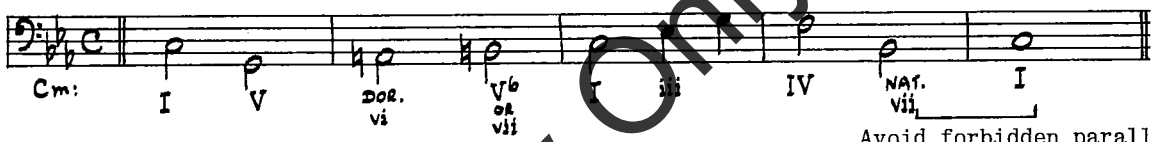
(DRILL)

1. In various minor keys, work out in four parts a few patterns which employ the chords under discussion, as:



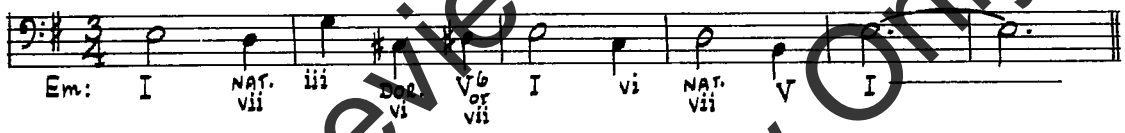
2. Bass is given. Add the upper parts:

a. (No eighth notes)

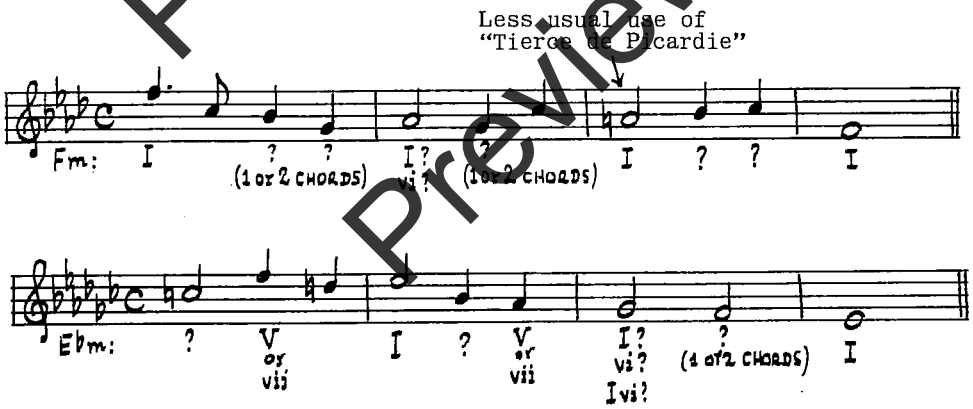


Avoid forbidden parallels.
Use doubled 3rd on I if necessary.

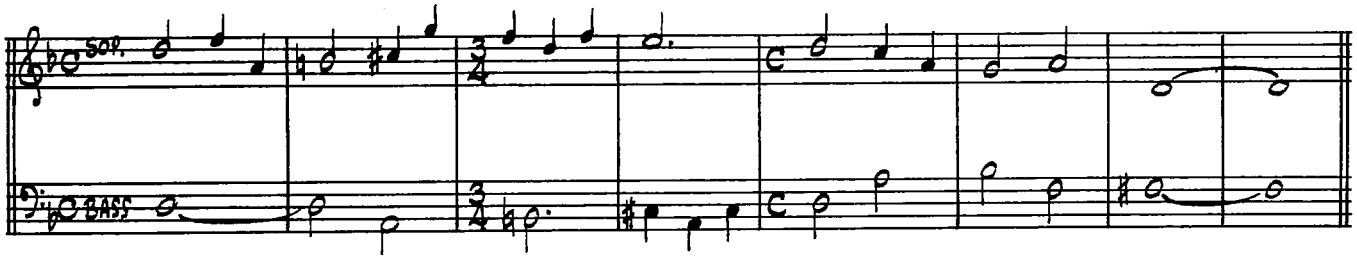
b. (A few eighth notes) (See Sample Solutions page 196.)



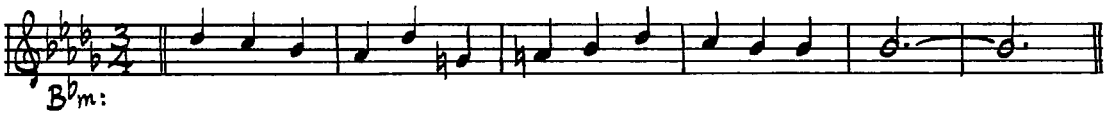
3. Soprano lines are given. Complete for four parts, within the present restrictions.



4. Add the inner parts: (See Sample Solutions page 196.)

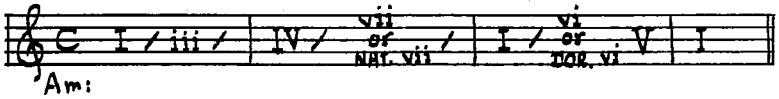


5. Lead only is given. Complete for four parts. (See Sample Solutions page 196.)

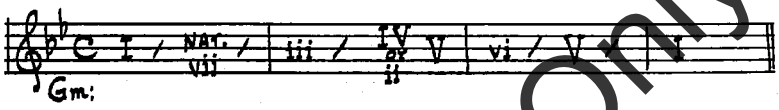


6. Work out the following progressions for four parts.

a. (a few eighth notes)



b. (no eighth notes)



7. Work out a sixteen bar composition for four parts, in any desired Minor key using either two similar eight bar sentences (A, A) or two contrasting eight bar sentences (A, B).

It may not be practical to *use* all of the available chords in minor, but at least *consider* all of them. Slow moving, melancholy. (Use either two chords per bar, one chord per bar, or a balanced combination of these.

8. **The ear:** Develop a familiarity with all of the resources in minor.

Chapter 9

I. THE SECOND INVERSION

(OF MAJOR AND MINOR CHORDS)

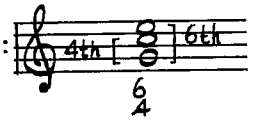
II. THE THIRD INVERSION

(ALL 7TH CHORDS)

I. THE SECOND INVERSION (of Major and Minor Chords)

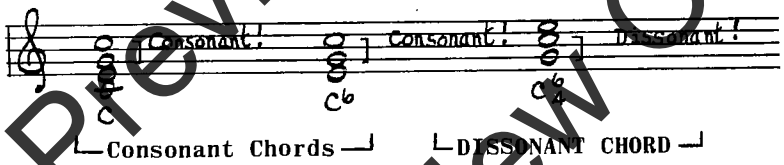
Introductory:

The second inversion is called, with respect to "figured bass", a $\frac{6}{4}$ chord:



So, for instance, " I_4^6 " = Tonic chord, second inversion. As has been indicated earlier, the second inversion of a Diminished or Augmented chord **is the full equivalent of the same chord in any other position** and may be used at any time. All that is necessary is the regular resolution of the Diminished or Augmented 5th in the bass. Therefore, the following text deals with the **second inversion of MAJOR and MINOR chords only.**

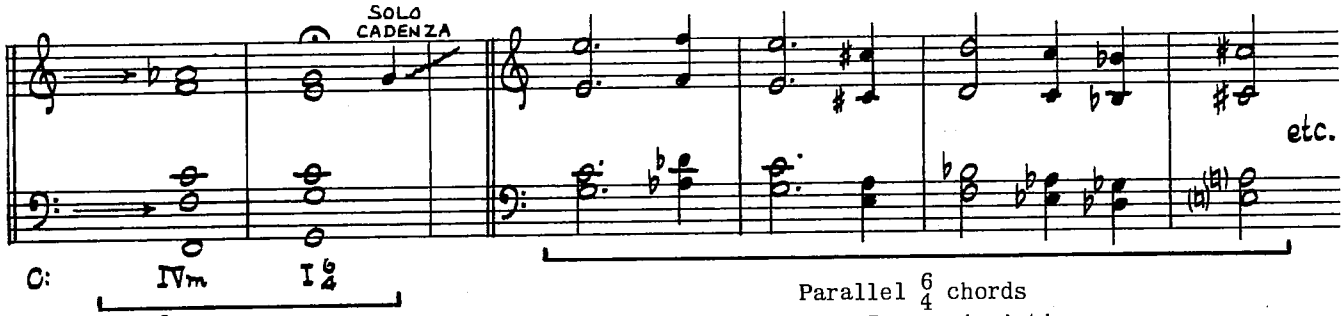
The second inversion of a Major or Minor chord is to be regarded as **Dissonant!** - the dissonant factor being the Perfect 4th (11th) with the bass, as:



Consonant Chords **DISSONANT CHORD**

The factor of *tension* is associated with most dissonant chords, but the $\frac{6}{4}$ represents DISSONANCE WITHOUT TENSION. Instead of a clearly enunciated dissonance, it is a dissonance of "instability" only, with an uncertain, uneasy quality. A single $\frac{6}{4}$ chord, out of context, is not very troublesome but its character can be readily felt if it is played, for instance, as the final chord of "America". Composers have sometimes used the very instability of the $\frac{6}{4}$ chord for specific artistic effect.

Examples:



The $\frac{6}{4}$ chord, with its feeling of suspense, used as a "spring board" for a cadenza.

Parallel $\frac{6}{4}$ chords
Vague, Impressionistic.

In the normal course of harmony, the $\frac{6}{4}$ **cannot be regarded as the equivalent of the same chord in Root Position or 1st Inversion!** Rather, it will in most cases be used as a "development", an "elaboration" or a "prolongation" of AN ENTIRELY DIFFERENT CHORD. (In fact, this area of the study could be subtitled: "HARMONIC ELABORATION WITH THE $\frac{6}{4}$ CHORD".)

Since the dissonant factor in the $\frac{6}{4}$ chord is the Perfect 4th, all uses of it will be in some way concerned with the resolution of this Perfect 4th. The overwhelming majority of $\frac{6}{4}$ uses fall into one of the following types, which can be called:

THE STANDARD $\frac{6}{4}$ USAGES

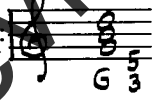
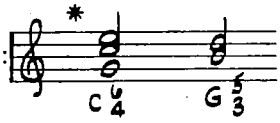
A. The APPOGGIATURA $\frac{6}{4}$ - (Most often concerns I^6_4 or IV^6_4)*
B. The PEDAL $\frac{6}{4}$ - (Most often concerns IV^6_4)*
C. The PASSING $\frac{6}{4}$ - (Most often concerns V^6_4)*
D. The AUXILIARY $\frac{6}{4}$ - (Most often concerns V^6_4)*
E. The IDIOMATIC V^6_4
F. The ARPEGGIATED $\frac{6}{4}$

*2nd inversions are used mainly with the Primary chords.

Each of these $\frac{6}{4}$ types is examined in detail in the following text.

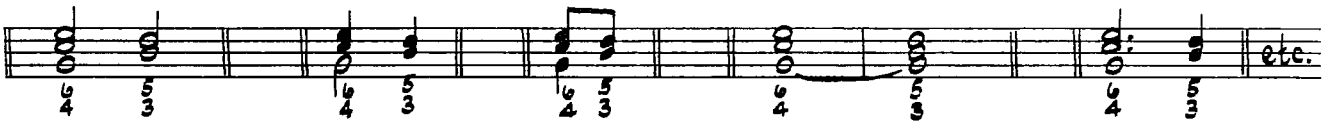
A. The APPOGGIATURA $\frac{6}{4}$

The term **appoggiatura** is derived from the Italian "to lean" and is applied to a *Dissonant non-chordal tone struck on the beat*. The appoggiatura $\frac{6}{4}$, then, is a $\frac{6}{4}$ chord struck on the beat *instead of the expected* ROOT POSITION CHORD, and it resolves to the root position chord at a weaker beat. Here is the "essence" of the proposition:

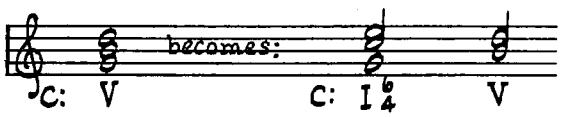
With the application of an Appoggiatura $\frac{6}{4}$, this:  becomes this: 

*The 6th, and *particularly* the DISSONANT 4TH, are appoggiaturas over the 5th and the 3rd.

The Appoggiatura $\frac{6}{4}$ generally occurs at a strong beat, resolving on to a weaker beat, as:



Any *root position* chord can have an Appoggiatura $\frac{6}{4}$ applied to it, but the most common use in traditional harmony is the "Cadential $\frac{6}{4}$" or "$\frac{6}{4}$ Cadence". This is the term applied to an elaboration of "V" into "I^6_4 - V". Thus:

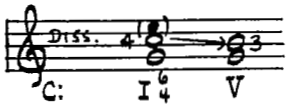


Because of its statistical frequency, and because most of the problems contained in the Appoggiatura $\frac{6}{4}$ are found in it, the Cadential $\frac{6}{4}$ warrants special attention.

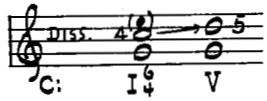
Details (I_4^6 - V)

1. "I_4^6 - V" is used instead of just "V" and is to be regarded as an elaboration of the "V" chord. The I_4^6 is part of the DOMINANT HARMONY and is *not* a "I" chord!

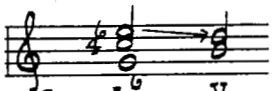
2. The true DISSONANCE in I_4^6 is the Perfect 4th (11th) above the bass (i.e., the tonic itself). Most often, and most sensitively, it resolves down to the 3rd of V, as:



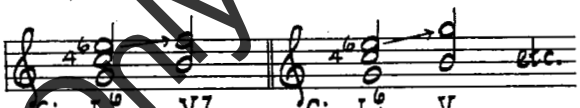
but it may occasionally resolve up to the 5th of V, as:



3. The 6th above the bass (i.e., the 3rd of the tonic $\frac{6}{4}$ chord) is *not specifically dissonant!* In practice, it most often falls to the 5th of V, but may rise to the 7th of V or even leap:



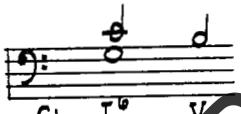
USUAL



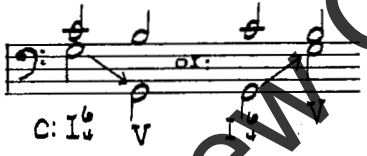
FINE

4. The BASS of the formula may:

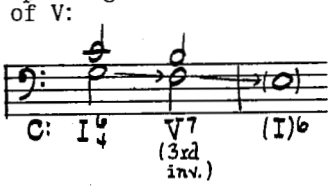
Remain passive:



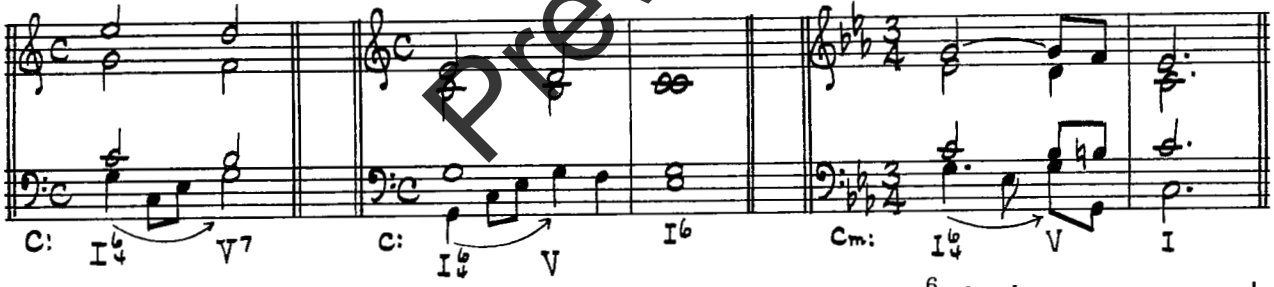
Leap an octave:



Fall to the "passing 7th" of V:



Further, the bass may "digress" through other notes of the Tonic $\frac{6}{4}$ chord, and return to the basic root:



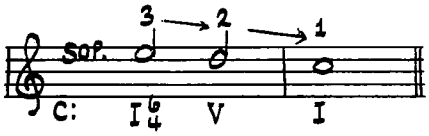
Bass "digressions" involving other notes of the I_4^6 chord

5. The **best double** in the Appoggiatura $\frac{6}{4}$ is the **BASS**. The 6th above the bass (the 3rd of the $\frac{6}{4}$ chord) seems never to be doubled, but writers occasionally double the 4th, provided both are resolved:

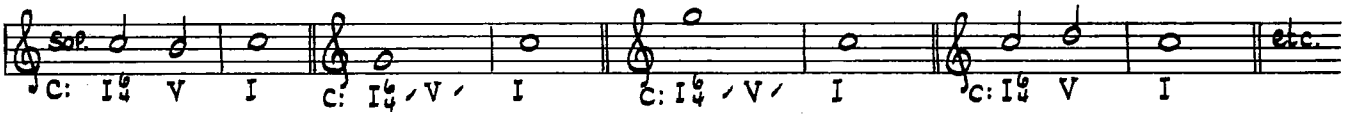
BEST! POSSIBLE

(Note Resolution!)

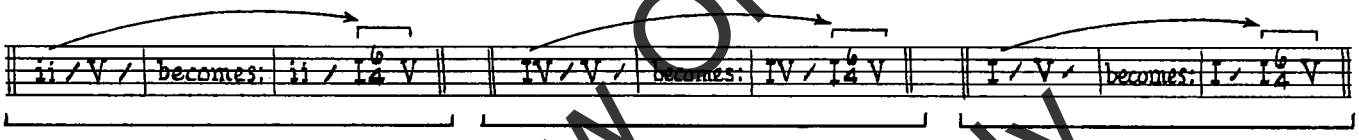
6. The most common soprano (melody) with the Cadential $\frac{6}{4}$ formula is the "3-2-1" ending (e.g., "America"):



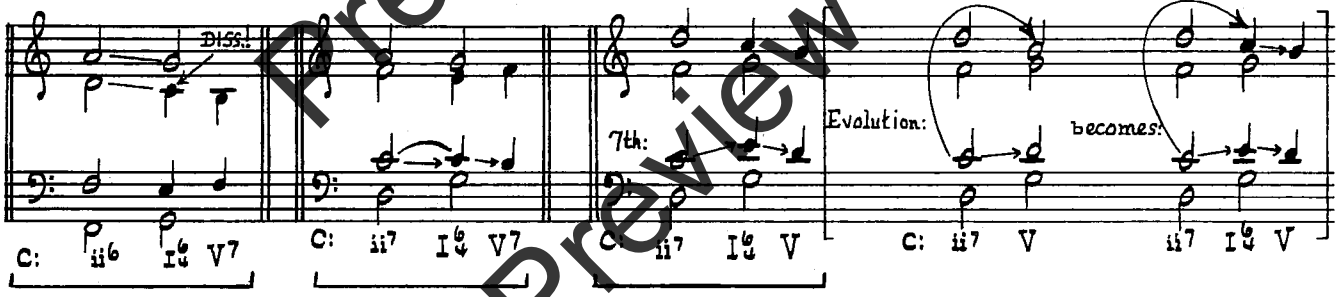
but others, of course, are available:



7. "I^6_4 - V" is approached as a "V" chord, since the formula is just an elaboration of the Dominant harmony. So:



In the movement "ii (or ii^7) - I^6_4 V", some interesting allowances with respect to parallel 5ths and the resolution of the 7th in ii are available. NOTE:



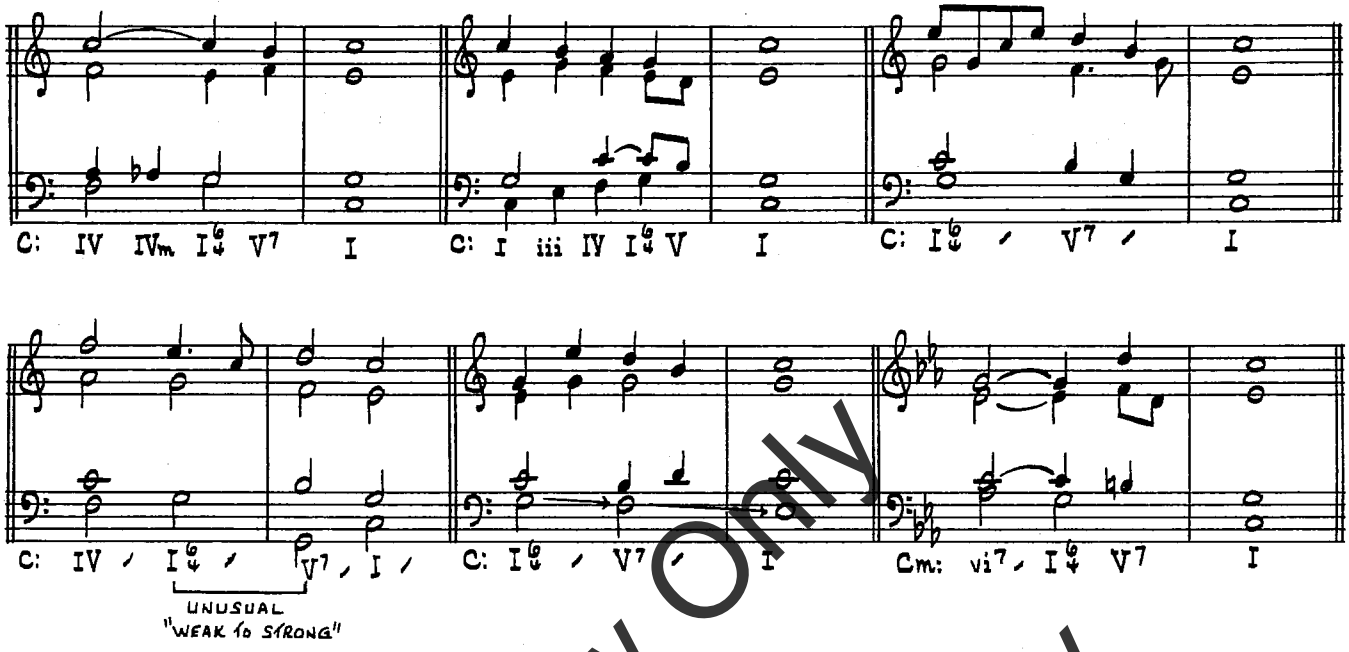
Parallel 5th is quite acceptable here! The "C" (the "4th" of I^6_4) is DISSONANT and is NOT the root of the chord.

"Delayed" resolution of the 7th.

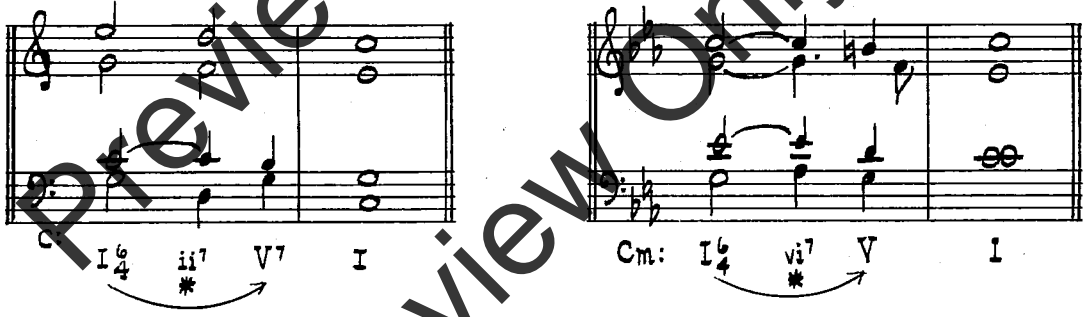
Apparently a casual handling of the 7th of ii, but actually just an elaboration of a "rising minor 7th" with the soprano taking the resolution. (See "Evolution")

8. "I^6_4 - V" is usually followed by "I", simply because most V chords are followed by I; but a "deceptive" movement from V is available.

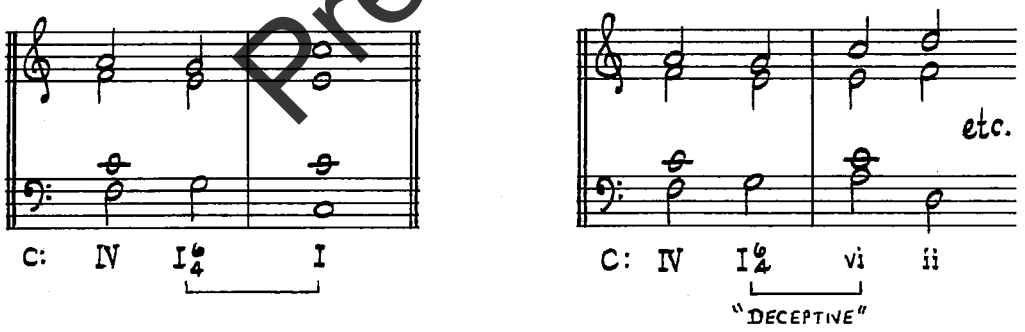
9. Here are a few examples illustrating the basic use of the Cadential $\frac{6}{4}$. Note that the formula may be decorated with change of position in the upper parts, as well as with a bass "digression":



10. Occasionally another harmony may be interpolated *between* I_4^6 and V, usually a Subdominant Function chord:

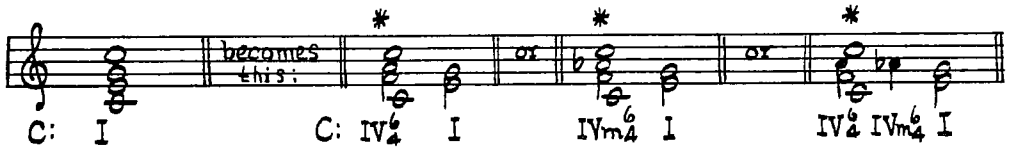


Finally, the I_4^6 can be, and is used *instead* of V. It may resolve directly on to I or on to vi:

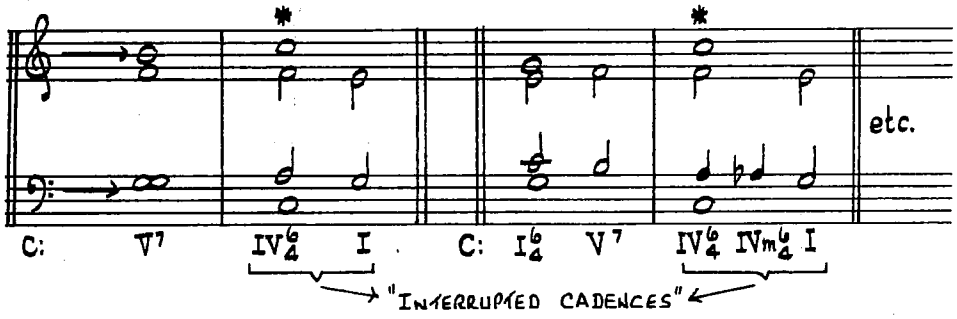


The other frequent use of the Appoggiatura $\frac{6}{4}$ principle is the elaboration of "I" into "IV_4^6 - I".

Example: This:

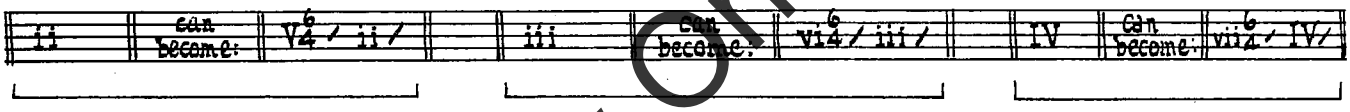


This is frequently used as an "Interrupted Cadence":

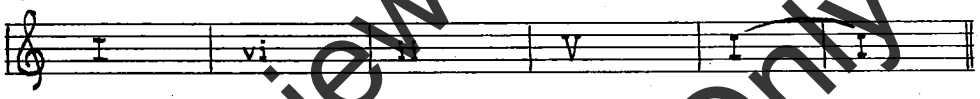


The use of IV^6_4 - I as an elaboration of an opening I chord is not infrequent, (e.g., "Cheek to Cheek") and, in fact, any I chord can be so elaborated. Basic jazz makes use of the IV^6_4 - I because of its Plagal "Spiritual" quality.

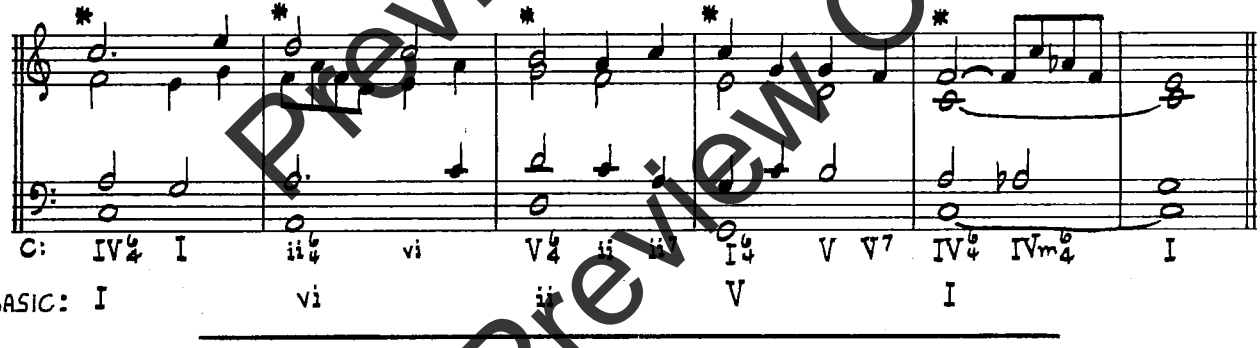
While there is no doubt that I^6_4 - V and IV^6_4 - I are the most common Appoggiatura $^6_4$'s, the same formula can be applied to any root position chord. For instance:



In fact, although such an extensive use is unlikely in practice, the following familiar pattern:

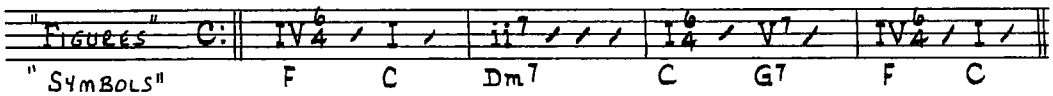


could be elaborated into:



Addendum:

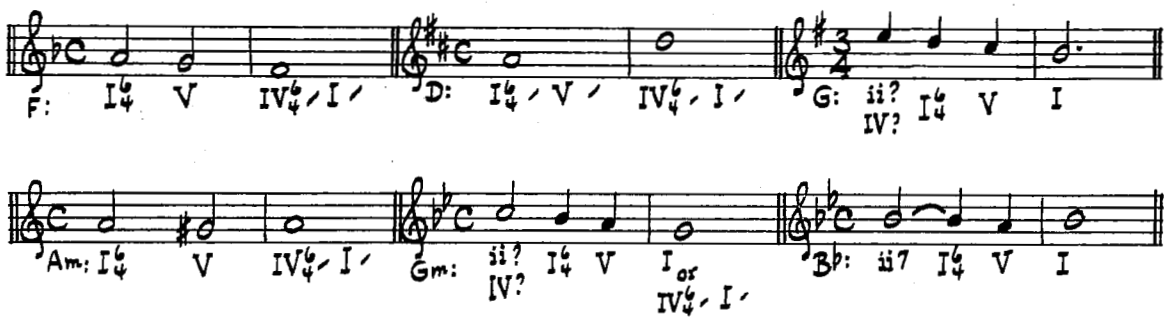
One of the main flaws in the CHORD SYMBOL system (widely used for piano, guitar, and bass parts in arranging, and for "lead sheets") is the fact that the *symbol* doesn't indicate the *position* of the chord. A "C chord", for instance, is symbolized "C" whether it is root position, 1st inversion or 2nd inversion! Here, to illustrate, is a "chord figure" progression with its "chord symbols":



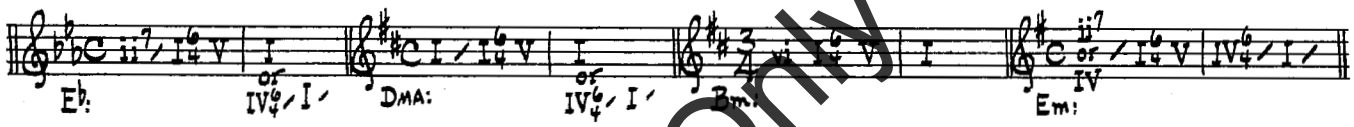
Obviously, **the SYMBOLS do not indicate the true nature of the progression!** In the hands of an inept bass player, the **symbols** can lead to results which range from amusing to chaotic. Writers have recognized the problems which can arise with $^6_4$ chords in the symbol system and have adopted symbols such as "$C^{G\ bass}$" and "$F^{C\ bass}$" etc. With actual bass parts, the problem is probably best solved by writing the desired notes rather than the symbols. In piano parts, lead sheets, etc., it is not unreasonable to indicate the 2nd inversion with a use of the traditional figures, as: "C^6_4", "G^6_4", etc. If the player doesn't understand them, it's about time he did!

ASSIGNMENT 36 (The Appoggiatura $\frac{6}{4}$)

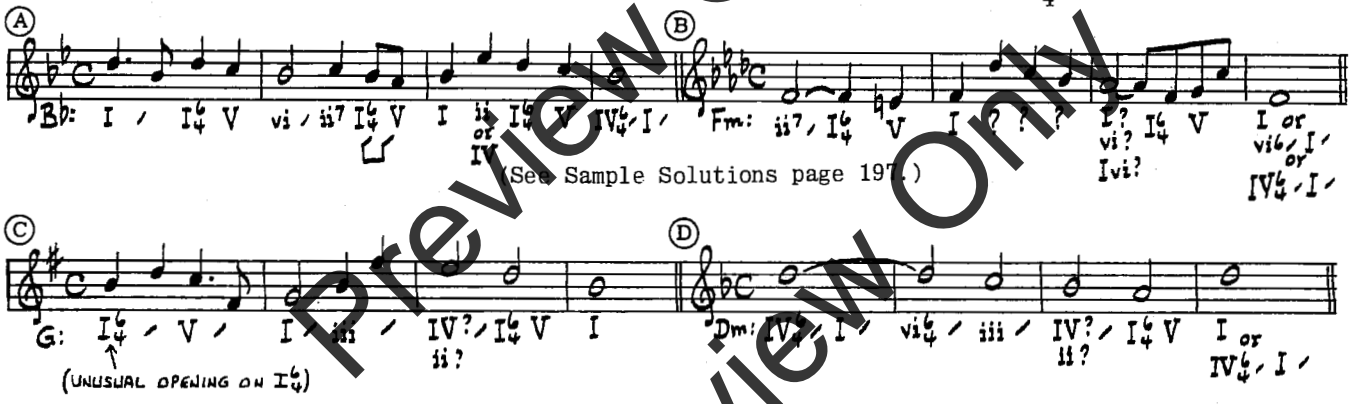
1. Soprano given. Complete for four parts. Use occasional "bass digression".



2. Work out the following for four parts. Occasionally use "bass digression" and change of position in the upper parts. Give two examples for each.

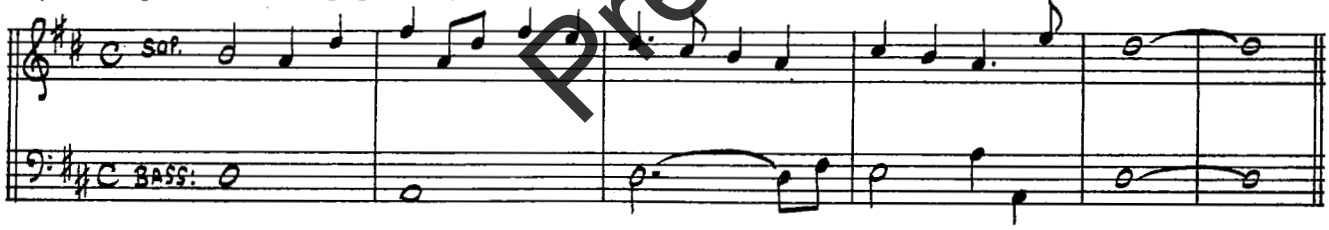


3. Soprano given. Complete for four parts, noting uses of the Appoggiatura $\frac{6}{4}$.

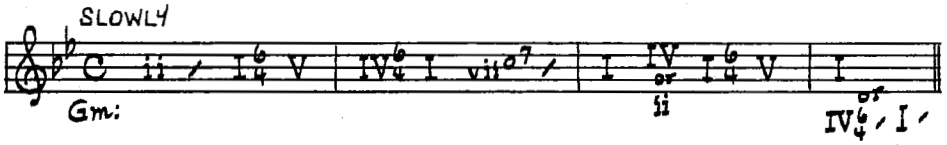


(See Sample Solutions page 197.)

4. Soprano and Bass given. Add the inner parts. Watch for Appoggiatura $\frac{6}{4}$'s. (See Sample Solutions page 197.)



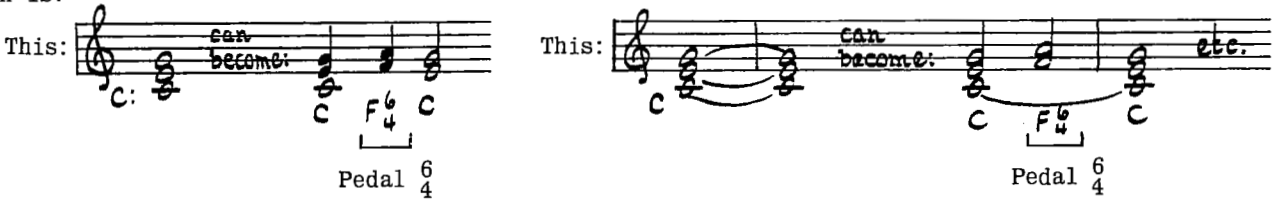
5. Progression suggested. Work for four parts. Give two examples: a. No eighth notes b. A few eighth notes



6. Examine sheet music, or whatever else is at hand, for uses of the Appoggiatura $\frac{6}{4}$, particularly for the Cadential $\frac{6}{4}$ and the IV^6_4 - I, and note the "melodic" situations in which they occur. Become familiar with the sound and listen for it in recorded music.

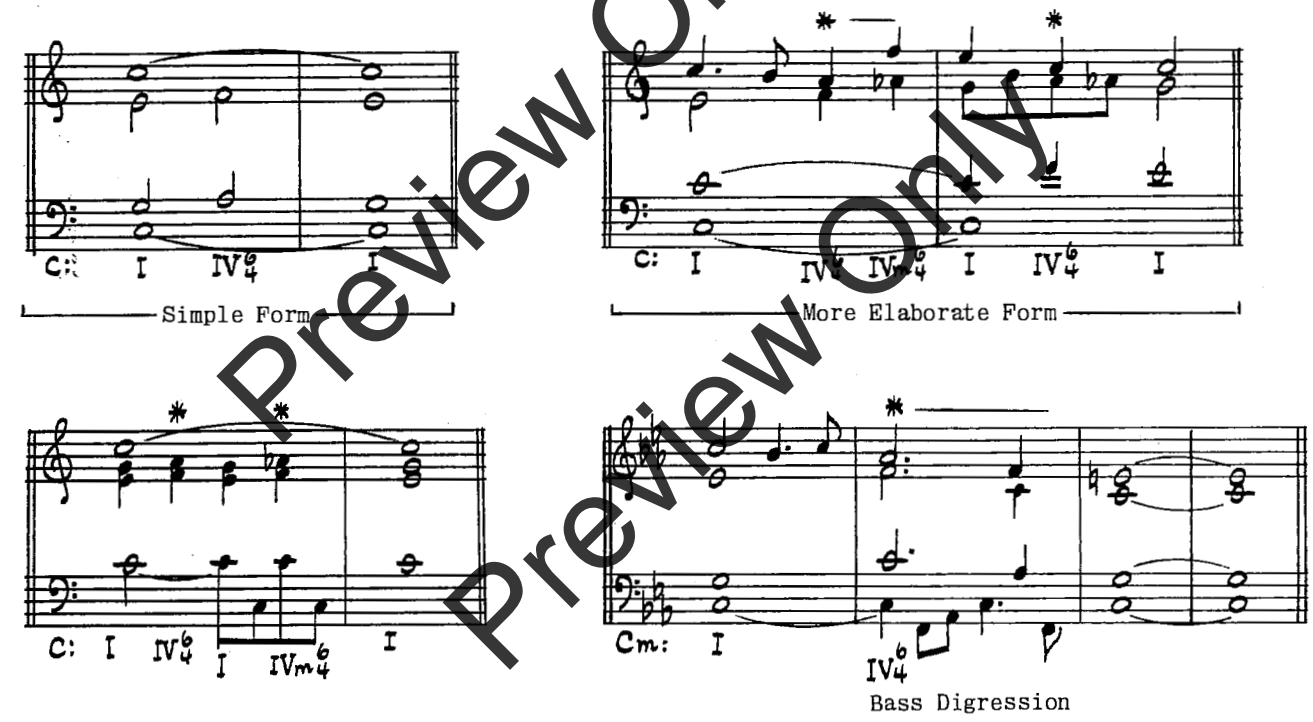
B. THE PEDAL $\frac{6}{4}$

The Pedal $\frac{6}{4}$, similar to the Appoggiatura $\frac{6}{4}$, is used as an elaboration of a basic root position chord. It derives its name from the "Pedal Note" character of the bass. The *essence* of the proposition is:



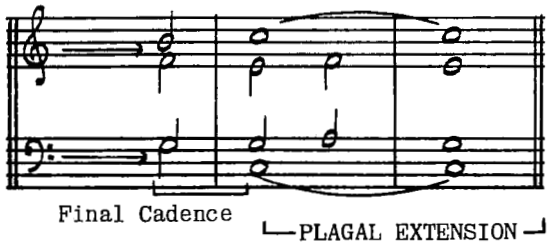
Clearly, these are rhythmically different; the Appoggiatura $\frac{6}{4}$ occurs at a "strong to weak" rhythm, but the Pedal $\frac{6}{4}$ occurs at a weak position, *between* two stronger beats.

By far the most common Pedal $\frac{6}{4}$ occurs as an elaboration of a root position I into "I - IV^6_4 - I". The simple formula can, of course, be decorated with change of position in the upper parts, octave leaps in the bass, bass digressions, etc. To illustrate:

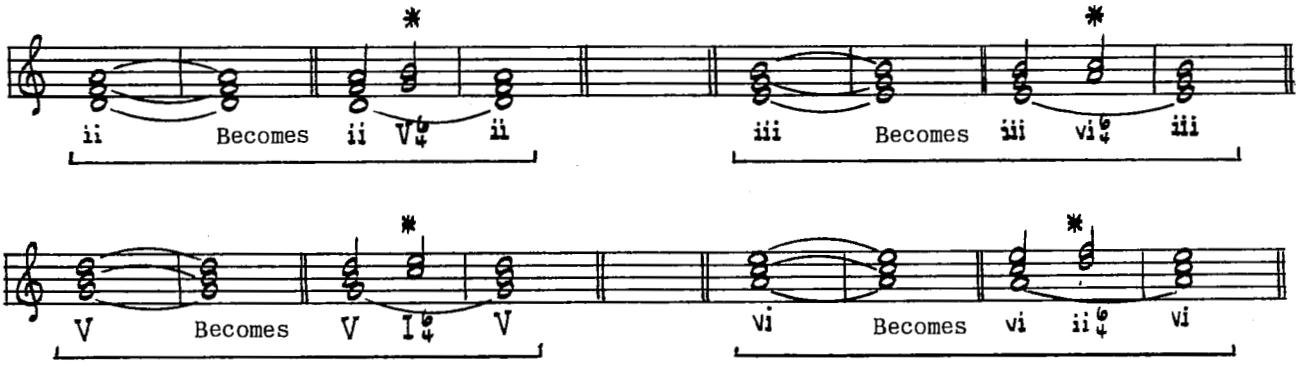


When the Pedal IV^6_4 is used as an elaboration of the FINAL I CHORD, it is called a **Plagal Extension.**

Example:

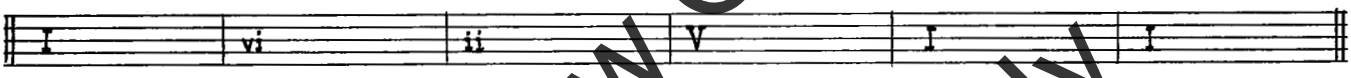


While the Pedal $\frac{6}{4}$ finds its chief use as an elaboration of I, the same formula can be applied to any root position chord. To illustrate (simple *essence* used for example purposes):

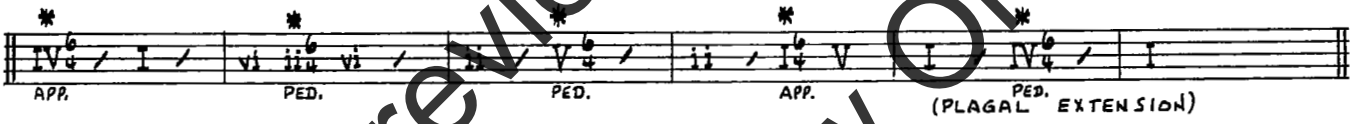


Clearly then, both the Appoggiatura and the Pedal $\frac{6}{4}$ chords are used to elaborate basic root position chords. They are used, in fact, to get two harmonies for the price of one. Here are some illustrations of "development" of a basic root position progression through the application of Appoggiatura and Pedal $\frac{6}{4}$ chords:

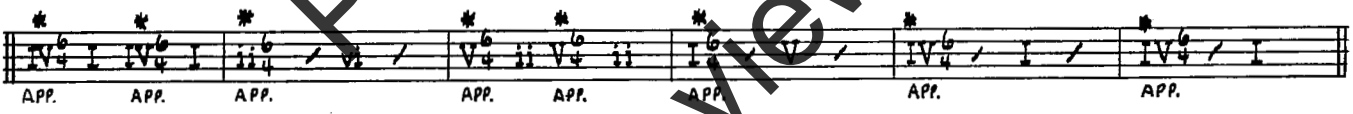
This, for instance:



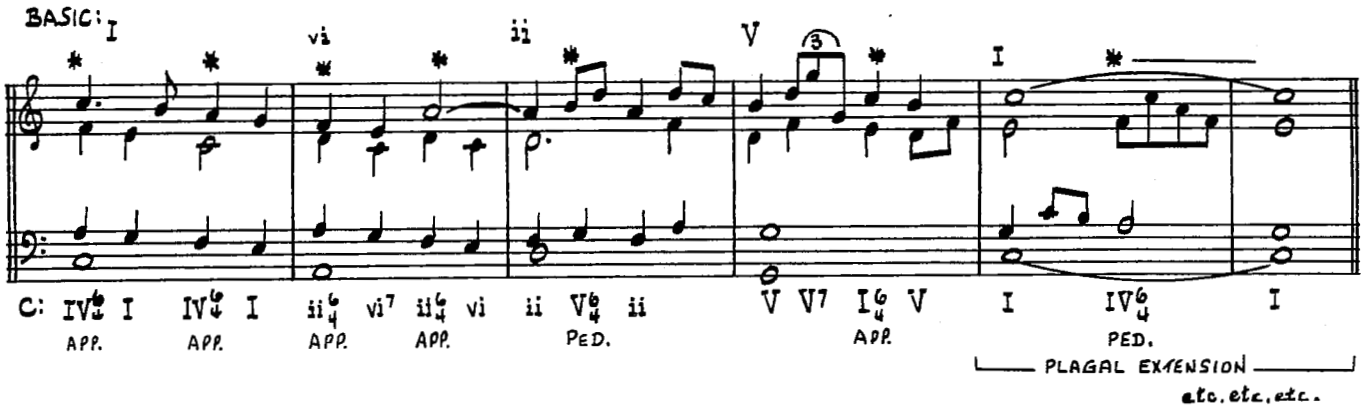
could become:



OR:



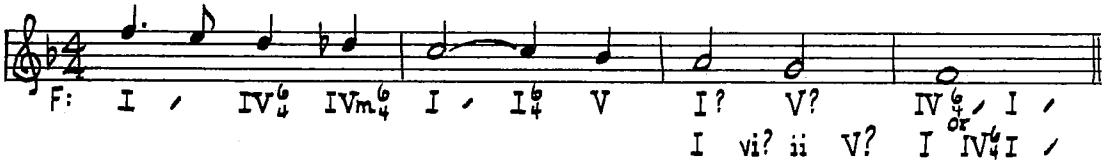
Here is an example worked out in four parts. Examples illustrating any device tend to overdo the device. This is no exception! It is doubtful if any six bars in practice would use this many Appoggiatura and Pedal $\frac{6}{4}$ chords:



ASSIGNMENT 37 (The Pedal $\frac{6}{4}$)

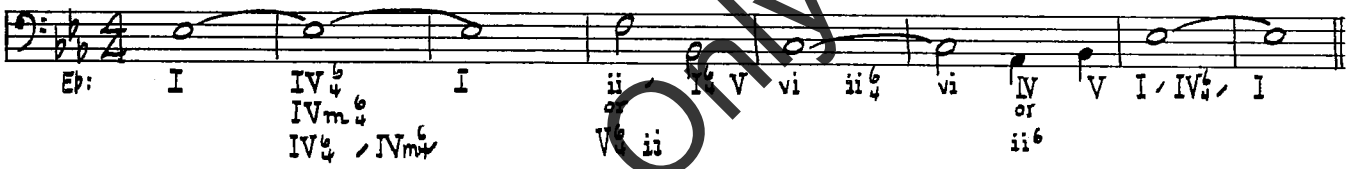
1. Work out one simple and one more elaborate version of:  in two or three major and two or three minor keys. Examine the use of the Dorian IV^6_4 in minor.

2. Soprano given. Complete for four parts.

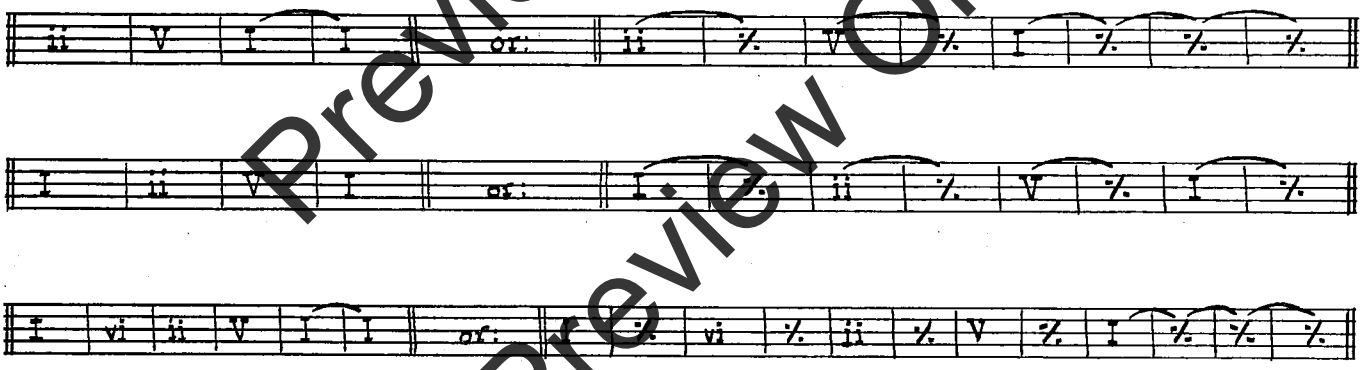


3. Bass given. Add the upper parts for two examples: a. No eighth notes
b. A few eighth notes

(See Sample Solutions page 197.)



4. Take a basic progression, such as any one of the following, and work out a few examples utilizing developmental Pedal and Appoggiatura $\frac{6}{4}$ chords. Write some simple examples and some more elaborate, with eighth notes, change of position of upper parts, octave leaps and "digressions" in the bass part.

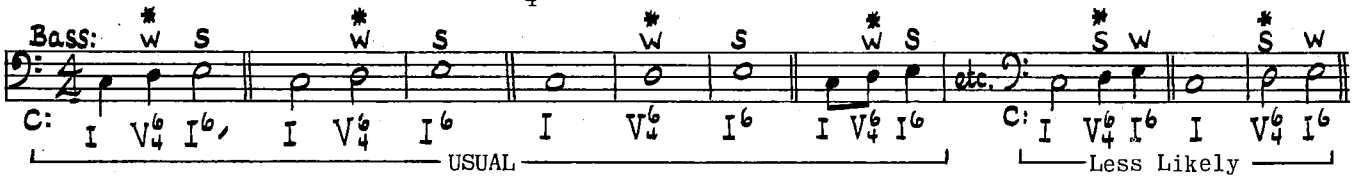


5. Examine music, and listen for uses of the Pedal $\frac{6}{4}$, particularly the "Plagal Extension".

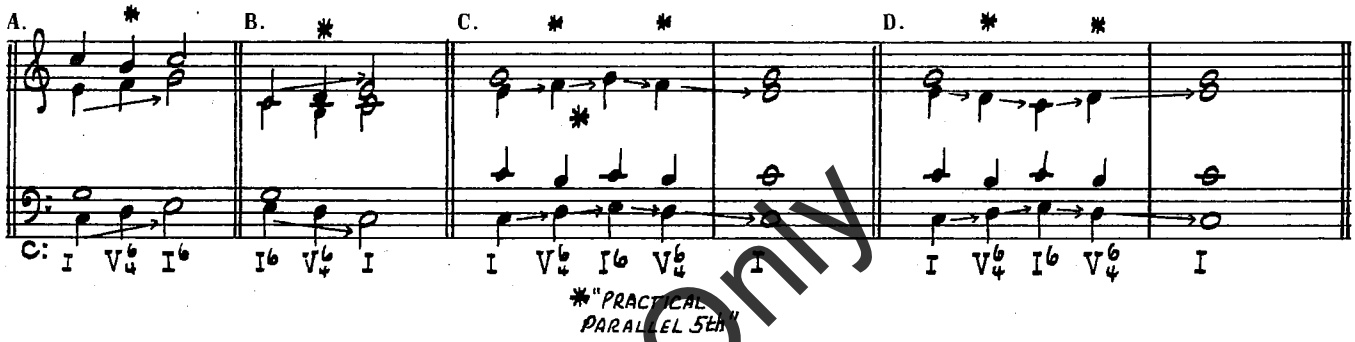
C. THE PASSING $\frac{6}{4}$

The Appoggiatura and Pedal $\frac{6}{4}$'s provide harmonic elaboration over a more or less stationary bass. However, the Passing $\frac{6}{4}$ *is essentially a bass movement.* The Passing $\frac{6}{4}$ chord is used to accommodate a "passing tone" in the bass, usually a passing tone between the root and 3rd, or 3rd and root of the basic chord. It most often occurs between I and I^6 or between I^6 and I. To illustrate:

In line with normal passing tone usage, the Passing $\frac{6}{4}$ most often occurs at a weak beat or fraction of a beat, but an "accented" Passing $\frac{6}{4}$ is possible. To illustrate:



The upper parts will follow a logical path. Study the following examples, with comments:



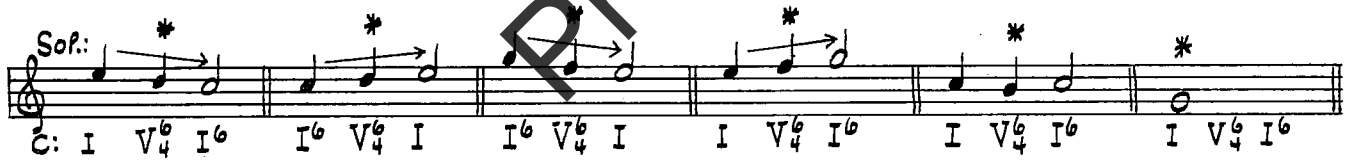
A. Observe rising 7th on V_4^6; bass takes the resolution. Note that the 3rd of I is moving up to the 5th when the bass moves up to the 3rd. Parallel 10ths (3rds) result when the two parts concerned use the passing tones provided by the Passing $\frac{6}{4}$.

B. Here the bass moves from the 3rd of I down to the root. The root moves up to the 3rd and the Passing $\frac{6}{4}$ provides the same passing tone in contrary motion.

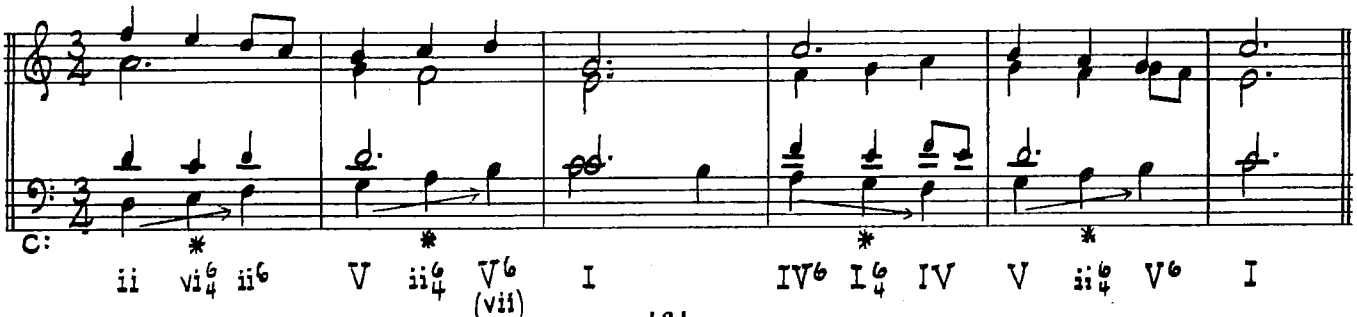
C. Observe the rising 7th in V_4^6 and the parallel 10ths when the chord changes position.

D. Observe root and 3rd of I exchanging places in contrary motion, moving through the same passing tone.

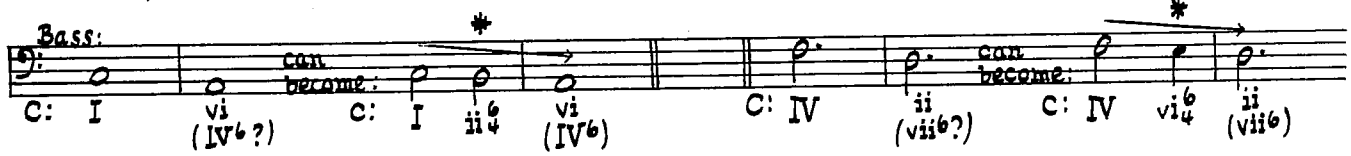
The Passing $\frac{6}{4}$ is used where a little movement or development of the basic chord is desirable, and to smooth over a change from root position to 1st inversion (or vice versa) in the bass. Further, the melody line may suggest its use. Here are some melody situations on a basic "I" chord which could be handled with a Passing V_4^6:



While the use of V_4^6 to join I to I^6 (or vice versa) is the most common, the same formula can be applied to other chords. Examine this example:

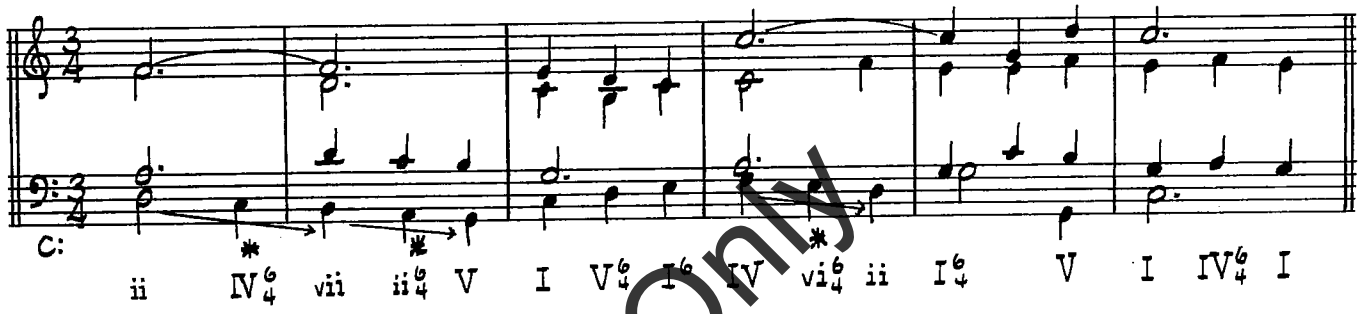


A Passing $\frac{6}{4}$ is often convenient *between two different chords,* particularly when the bass is leaping down a 3rd, as:



(These are very similar in effect to the use of a Passing 7th in the bass.)

Example:



Other "transitional" uses for the Passing $\frac{6}{4}$ may present or suggest themselves.

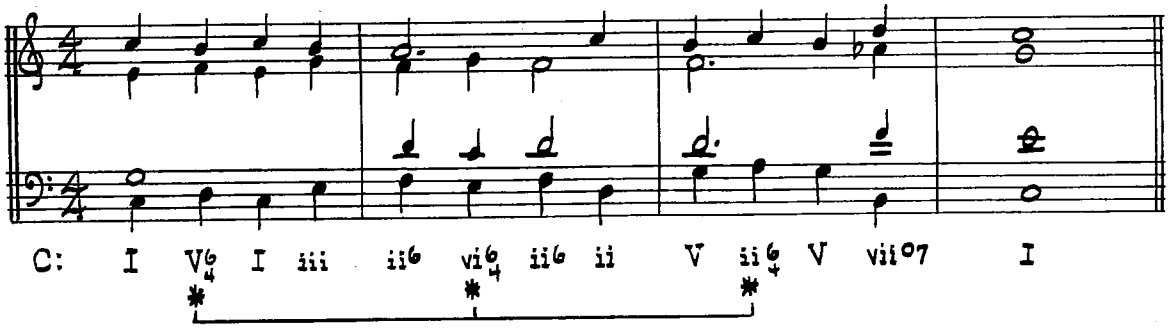
D. THE AUXILIARY $\frac{6}{4}$

Similar to the Passing $\frac{6}{4}$, this is essentially a bass situation. The Auxiliary $\frac{6}{4}$ accommodates an "auxiliary note" in the bass at a weak beat or fraction of a beat.

Example:

In practice, the Auxiliary $\frac{6}{4}$ appears to be the least used of the $\frac{6}{4}$ types. Its most frequent use is as an elaboration of a root position I into "I - V^6_4 - I", but it can be used as an elaboration of any root position chord. (Or even, as the example illustrates, in the opposite direction, to elaborate a 1st inversion chord):

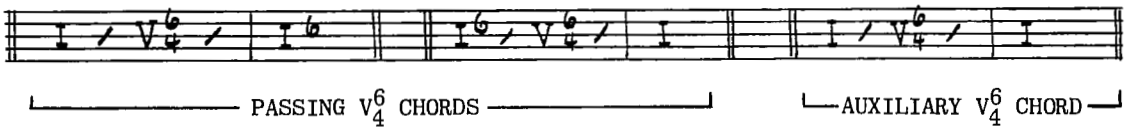
Example:



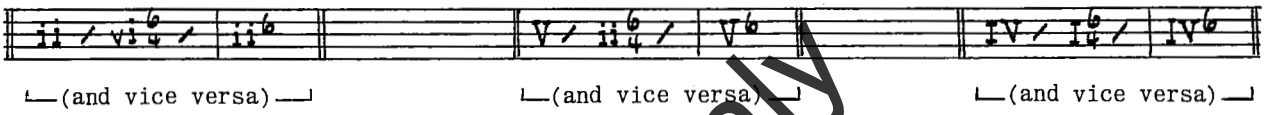
Auxiliary $\frac{6}{4}$ Chords

ASSIGNMENT 38 (Passing & Auxiliary $\frac{6}{4}$'s)

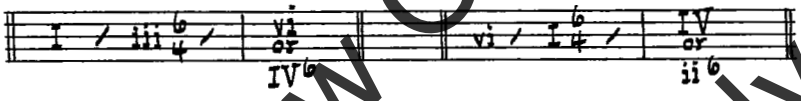
1. Write sufficient examples of:



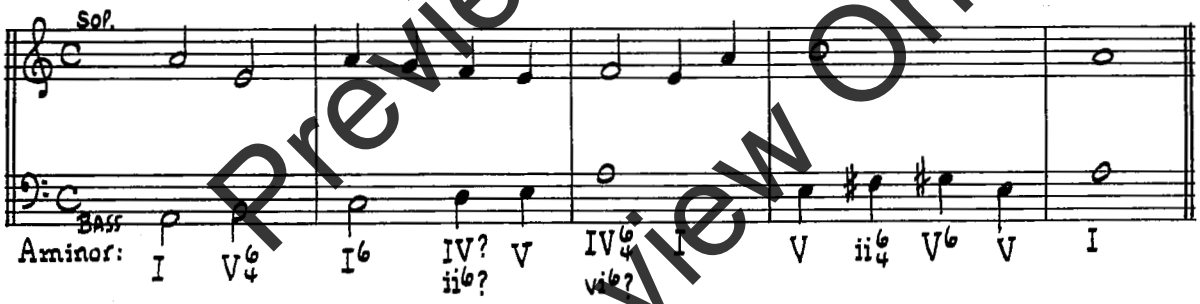
2. Write some examples of Passing $\frac{6}{4}$ chords used as development of chords other than I, as:



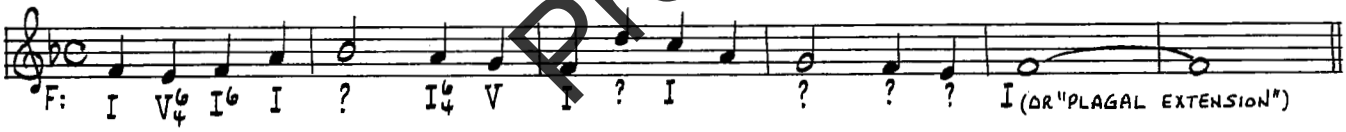
3. Write some examples of Passing $\frac{6}{4}$'s used between two different chords, as:



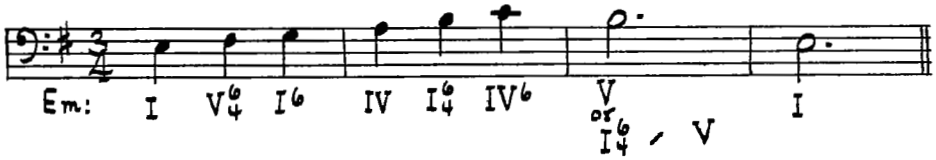
4. Add inner parts. (Note the $\frac{6}{4}$ uses.) (See Sample Solutions page 197.)



5. Soprano given. Add the supporting parts: (See Sample Solutions page 198.)



6. Bass given. Add the upper parts using a few, if any eighth notes.



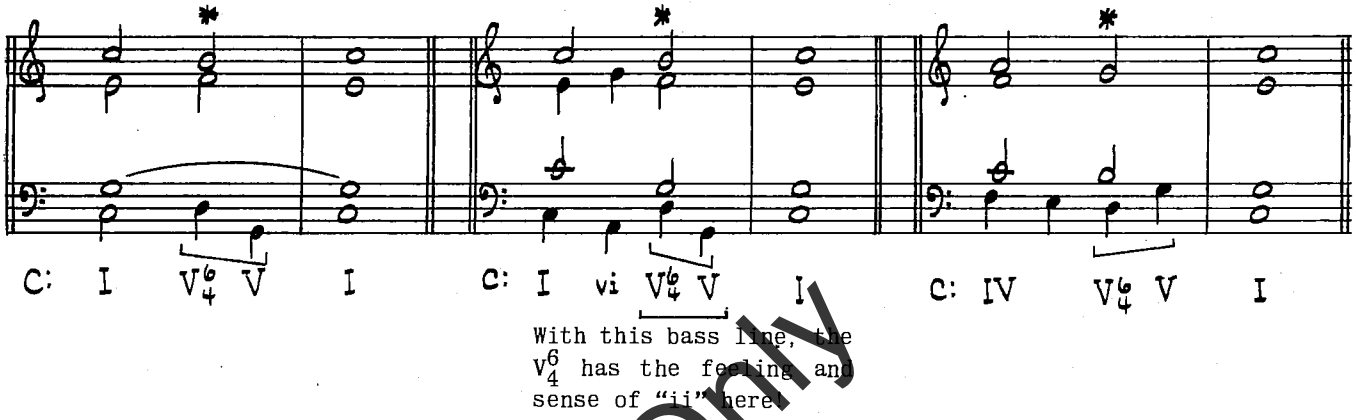
7. Take one or more of the basic progressions from Exercise 4, Assignment 37, and work out some examples applying Passing and Auxiliary $\frac{6}{4}$ chords in a "developmental" sense, as well as Appoggiatura and Pedal $\frac{6}{4}$'s.

8. Examine music and listen for uses of the Passing and Auxiliary $\frac{6}{4}$ chords, particularly the Passing V_4^6.

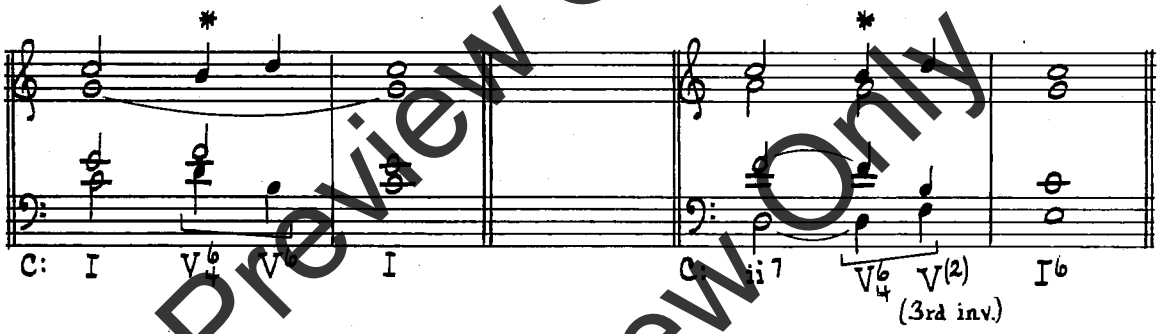
E. THE IDIOMATIC V_4^6

Proposition:

The V chord, *and particularly "V^7"*, may be initially struck in $\frac{6}{4}$ position, and resolved on to its own root position, as:



Sometimes the Idiomatic V_4^6 can be resolved on to its own 1st or 3rd inversions:



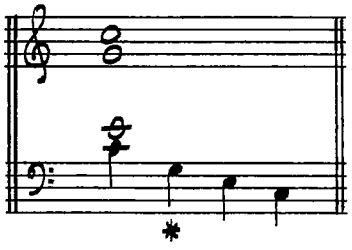
The striking of a chord in $\frac{6}{4}$ position with a subsequent resolution to another position is generally unsuccessful on any chord except V. Consequently, the situation appears to be confined to Dominant, and likely Dominant 7th chords only. (Plus "Secondary Dominants" - see "Tonicization" Volume II.) Hence the term **Idiomatic V_4^6**.

F. THE ARPEGGIATED $\frac{6}{4}$ (derived from the term "arpeggio")

Proposition:

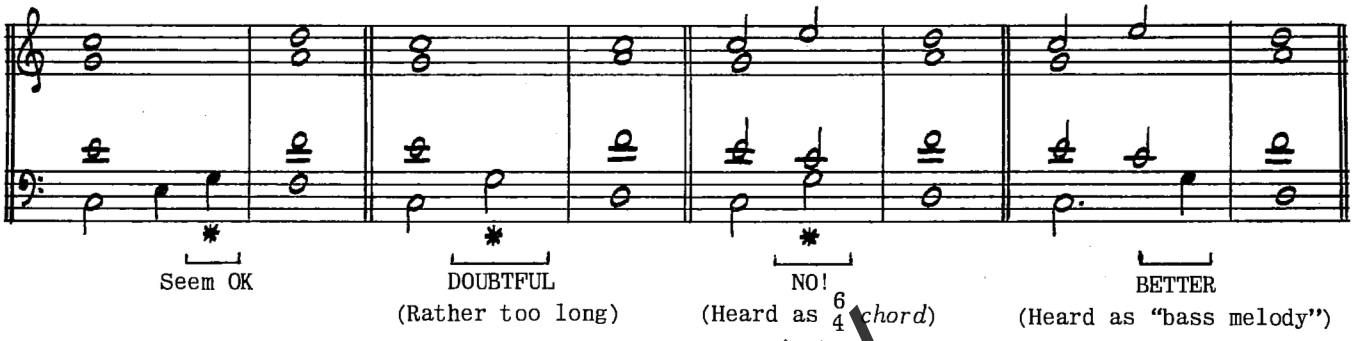
The 5th of the chord may be touched upon in the course of an arpeggio or semi-arpeggio movement in the bass, *without necessarily producing the sound and feeling of a $\frac{6}{4}$ chord.*

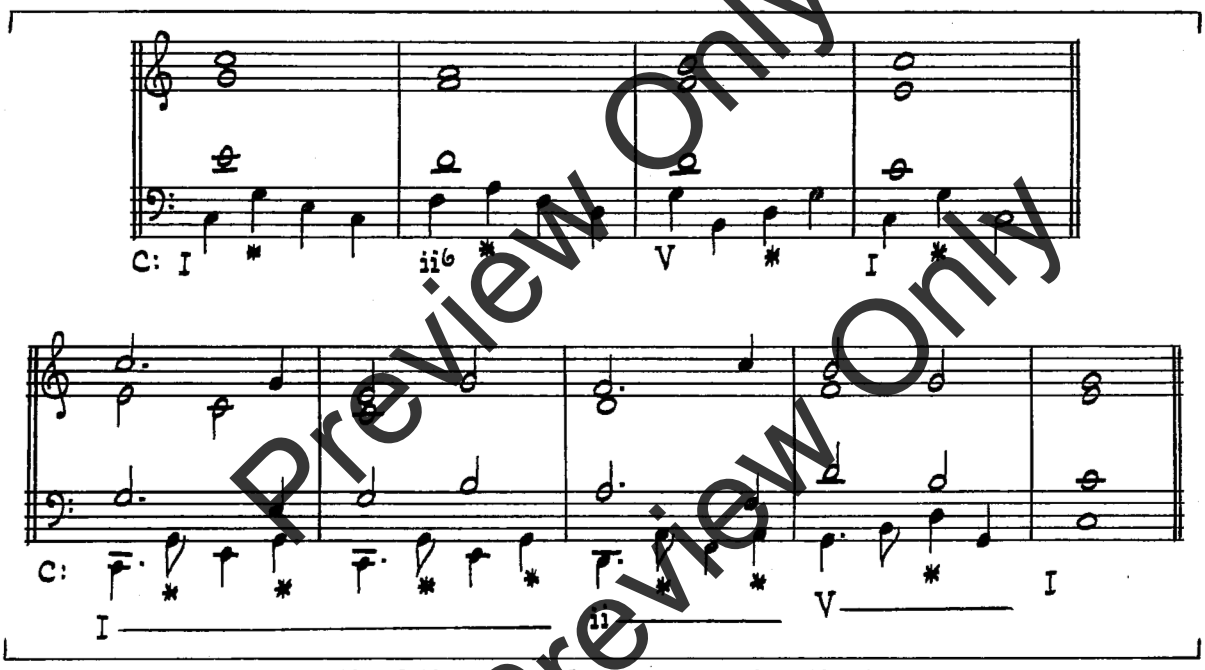
Example:



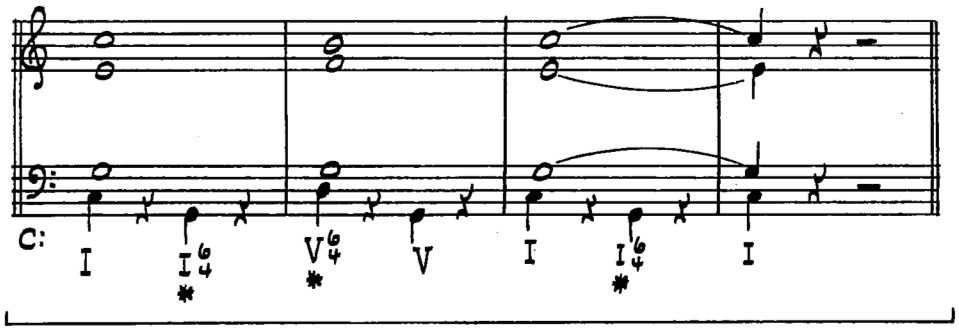
*Heard only as "bass melody" and not as a "$\frac{6}{4}$ chord".

Whether or not an Arpeggiated $\frac{6}{4}$ is effective and successful is a matter of *stress* and *duration*. It is important that the 5th appearing in the bass in this manner be **heard** as "bass melody" and NOT as a $\frac{6}{4}$ **chord**. If the result IS heard as a $\frac{6}{4}$ chord, it must either be treated as such, or eliminated. The following examples should illustrate the problem. Those which are acceptable are situations in which the 5th in the bass is heard *melodically* only!





Both of these examples are OK. The 5ths in the bass are heard as "bass melody" only.

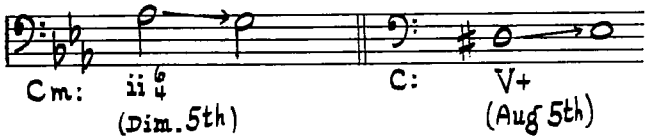


Common popular bass, employing the Arpeggiated I^6_4 and the Idiomatic V^6_4.

The preceding pages cover the sense, and the standard uses of the 2nd inversion. There is no doubt that $\frac{6}{4}$ chords can, and do appear in circumstances other than these, but only rarely and only when some factor of larger design is involved.

Certainly, if only the standard uses of the $\frac{6}{4}$'s are employed, no harm will come. Deviations from these (and from all principles) is possible as musical judgment and musical awareness grows.

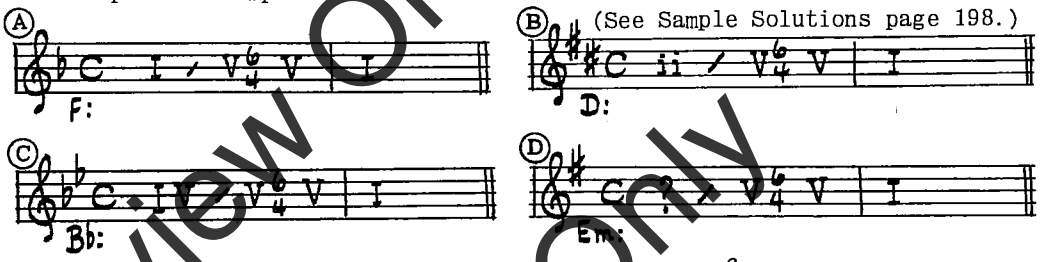
Finally, it bears repeating that the 2nd inversion of Diminished and Augmented chords is the full equivalent of the same chords in any other position. All that is necessary is the regular resolution of the Diminished or Augmented 5th in the bass:



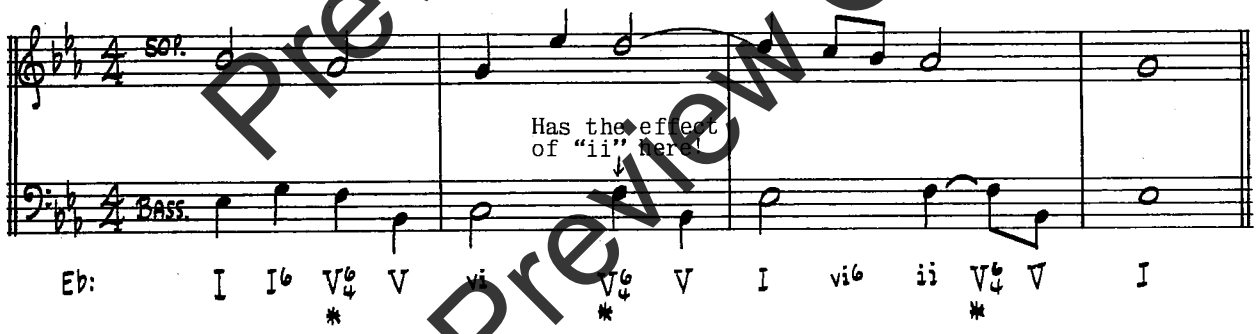
It is only the 2nd inversions of major and minor chords which require the considerations examined in this chapter.

ASSIGNMENT 39 (Idiomatic V^6_4 & Arpeggiated $\frac{6}{4}$)

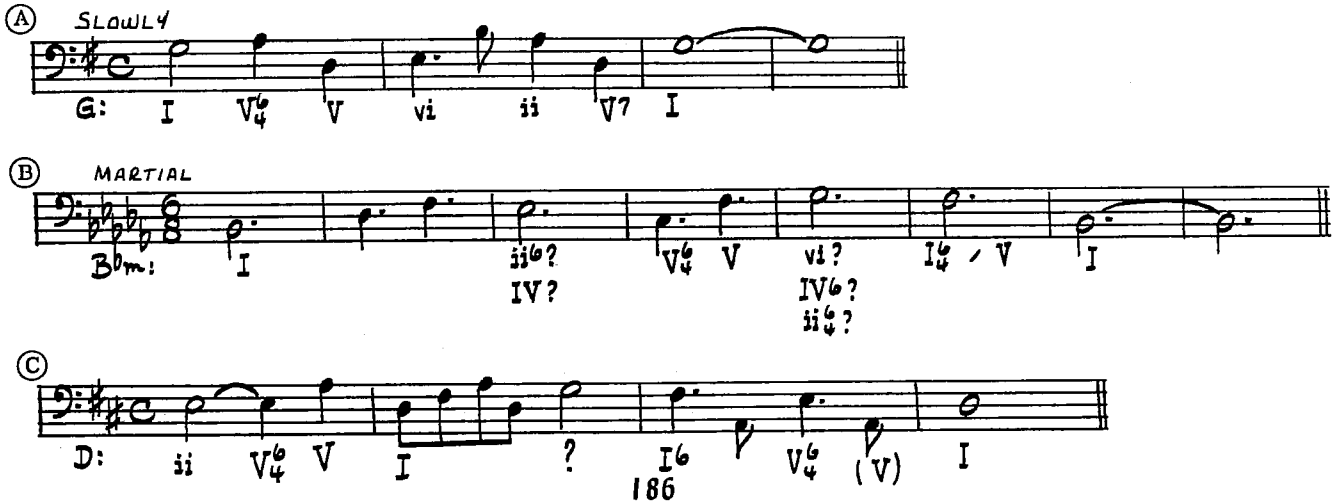
1. Work out in four parts a couple of examples for each of the following patterns which make use of the Idiomatic V^6_4: (See Sample Solutions page 198.)



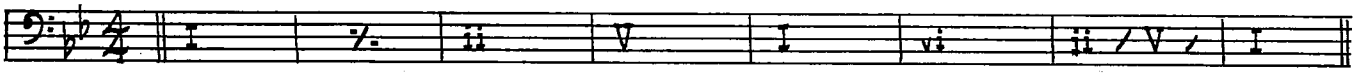
2. Soprano and Bass given. Add the inner parts. Note the use of Idiomatic V^6_4.



3. Bass given. Add the upper parts. Note the use of Arpeggiated $\frac{6}{4}$ chords, and the Idiomatic V^6_4.

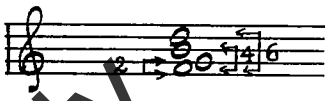


4. Take the following progression, or one like it, and work for four parts aiming to exploit Arpeggiated $\frac{6}{4}$ chords resulting from "melodic" activity in the bass. Keep the upper parts fairly passive, letting the bass be the primary element of the passage. (Eighth notes are available, particularly in the bass!)



5. Examine music, and listen for uses of the Idiomatic V_4^6 and Arpeggiated $\frac{6}{4}$ chords.

II. THE THIRD INVERSION (All 7th Chords)

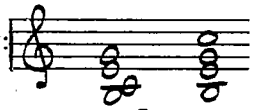
Figured bass: "2" - being an abbreviation of $\begin{matrix}6\\4\\2\end{matrix}$, as: 

Abbreviation: "2"

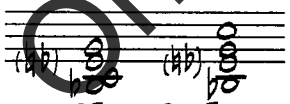
(So, for instance, "V^2" = 3rd inversion of the dominant 7th chord.)

The "figure" for the 3rd inversion is not, however, in as common use as are the figures for the 1st and 2nd inversions. This text will use it occasionally for convenience, but not consistently.

Preparatory Hint: Note the difference in tension between the 3rd inversion of a chord containing a MAJOR 7th contrasted with the 3rd inversion of a chord containing a MINOR 7th:

These: 

(3rd inversion)

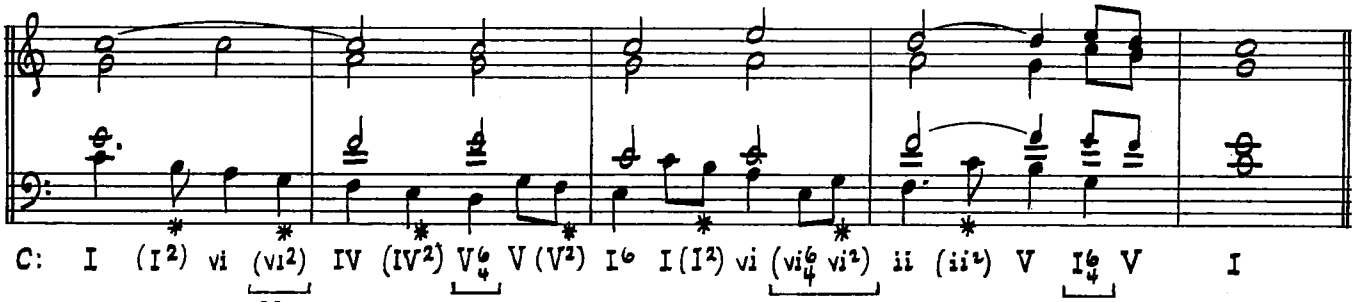
have much more tension than these: 

(3rd inversion)

The conclusion is only that 3rd inversions of chords containing Major 7ths need more care and caution with respect to the style and level of tension of the context.

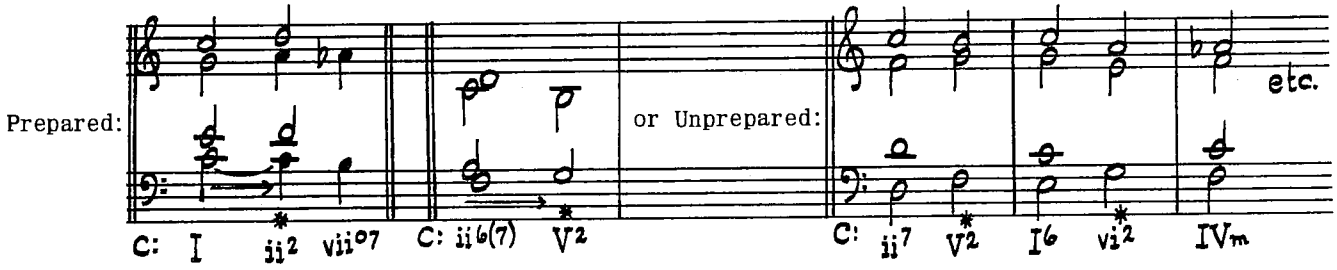
A. THE CONTRAPUNTAL 7TH IN THE BASS

The 3rd inversion is most easily and commonly used in the device of the **Contrapuntal 7th.** The Contrapuntal 7th in the bass, either major or minor, will fall one step. To illustrate:

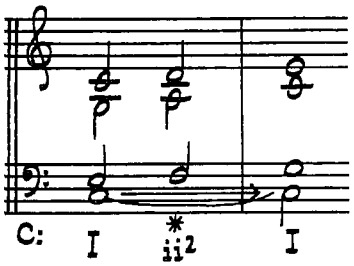


B. THE HARMONIC 7TH IN THE BASS

A chord may be struck in 3rd inversion. The 7th in the bass may be:

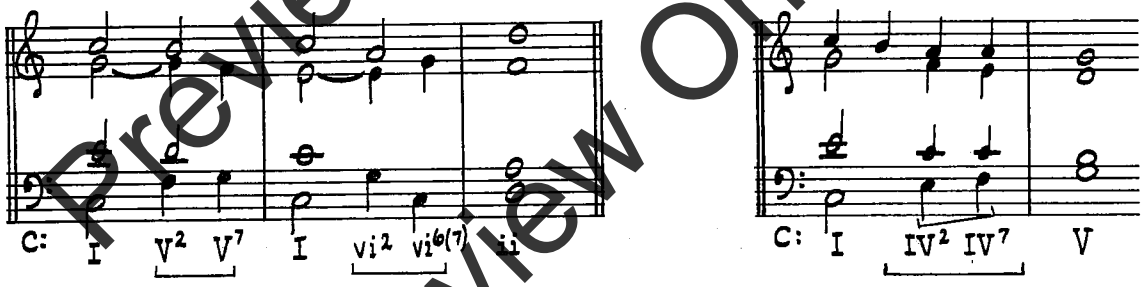


The Harmonic 7th in the bass, either major or minor, will regularly fall one step; but an occasional "Passive Resolution" of the MINOR 7th in the bass can be useful:



Finally, a 3rd inversion may change to another position of the same chord. This is generally more successful when a Minor 7th is involved. Changing position from a 3rd inversion of a Major 7th chord may be a little harsh.

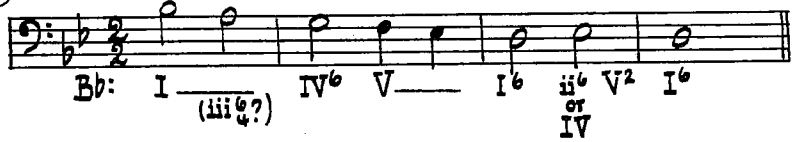
Examples:



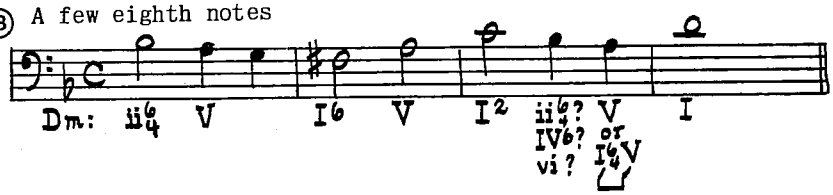
ASSIGNMENT 46 (The 3rd Inversion)

1. Bass given. Add the upper parts, noting the use of the 3rd inversion.

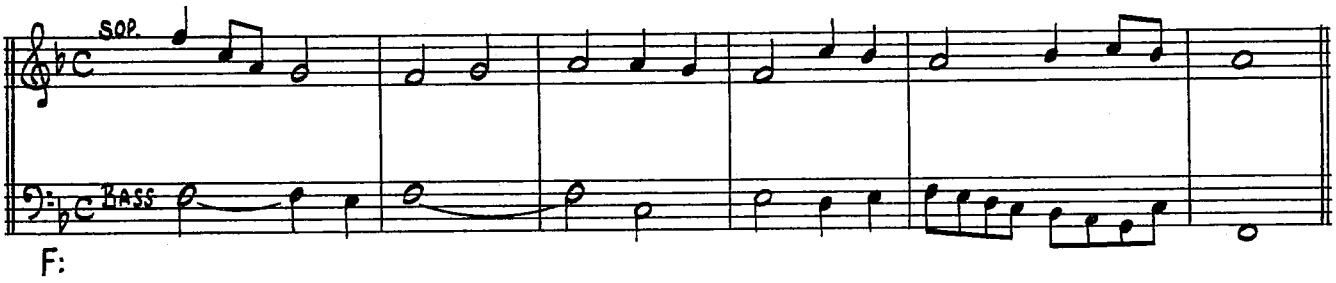
Ⓐ No eighth notes



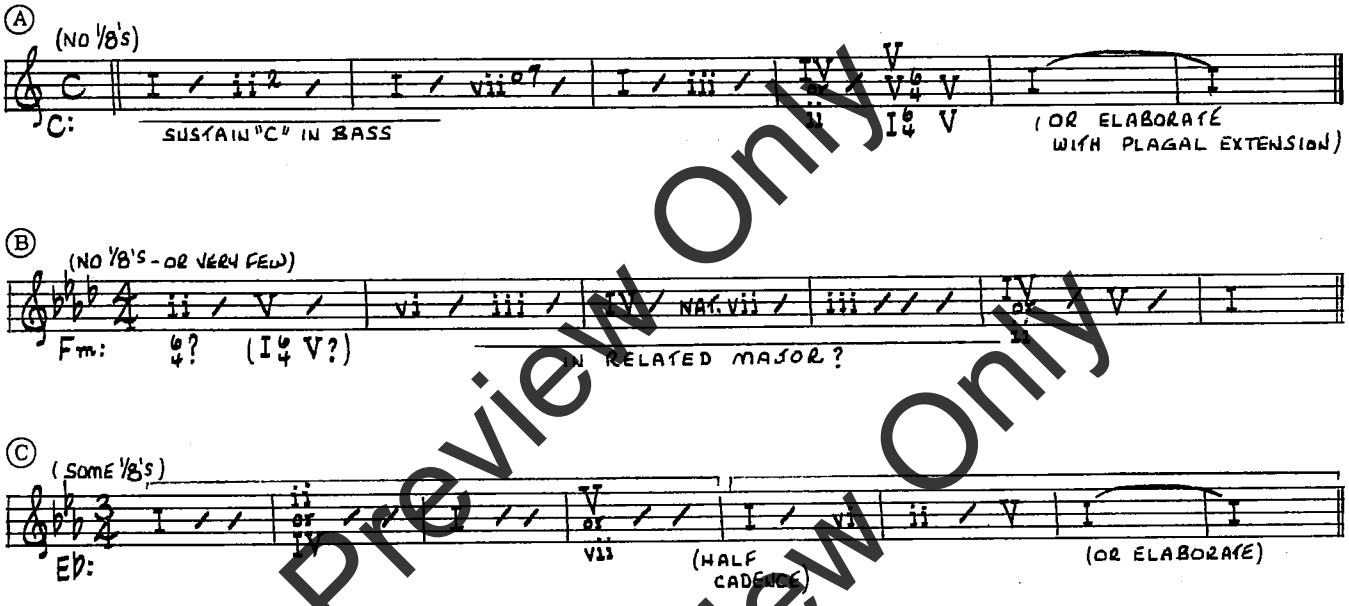
Ⓑ A few eighth notes



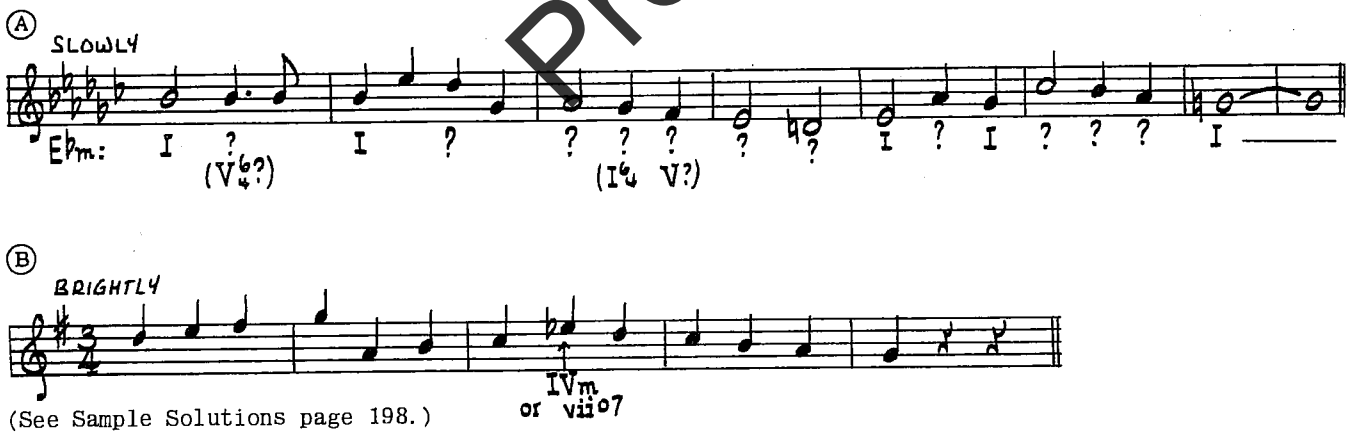
2. Soprano and bass given. Add the inner parts. (See Sample Solutions page 198.)



3. Progressions suggested. (Basic chord figures given, only.) Work for four parts, aiming to make some use of the 3rd inversion along with all other material available to this point.



4. Soprano given. Complete for four parts. Make some use of the 3rd inversion and watch for uses of the developmental $\frac{6}{4}$ chords which have been examined in this chapter.



(See Sample Solutions page 198.)

5. Examine music, and listen for uses of Harmonic and Contrapuntal 7ths in the bass.

EPILOGUE

Any division of the study of harmony into "Elementary", "Intermediate", or "Advanced" usually has meaning only with reference to the text or teacher who so divides it. For the purposes of this study, this volume completes the examination of basic tonal harmony. The first three chapters contain introductory material, and chapters four through nine examine harmonic progression using the chords in major and minor up to the level of the 7th, in all positions. Some "melodic" activity has been available with the use of "arpeggiation", the contrapuntal 7ths (and the decorative resolutions thereof) and the passing 6th on the Plagal formula.

The student who has, either by himself or with professional guidance, gained familiarity with the materials of this volume should have:

1. An understanding of the principles of voice leading.
2. A familiarity with the sound and procedures of Primary and Secondary progressions in major and minor.
3. A sensitivity to the melodic organization of notes.
4. An understanding of voicing and vertical structures.

The foundation provided by a knowledge of these things is a pre-requisite for more advanced techniques and the student will find that the more advanced techniques are extensions, modifications, and elaborations of the basic material in this volume. He will also find that the more advanced techniques are closer to contemporary practice.

Volume II follows directly and logically from here and contains a full examination of the three main "extended tonality" techniques: "Mixed Modes", "Tonicization" and "Chromatic Harmony", along with Modulation, Sequences, Parallel Harmony, Equal Division of the Octave, Opposed Scales, Organ Point, and other harmonic techniques. It also contains a thorough survey of the melodic "non-chordal" notes. (Passing tones, appoggiaturas, etc.)

The student who has reached this page of this volume is likely serious about gaining the kind of control of melodic and harmonic materials which an arranger and/or composer of today's North American music requires. He is earnestly advised to continue reading, studying, listening, and to continue developing tonal memory, tonal vision, and the ability to write what he hears and hear what he writes. Volume II is designed to help him continue these things.

SAMPLE SOLUTIONS TO THE ASSIGNMENT EXERCISES

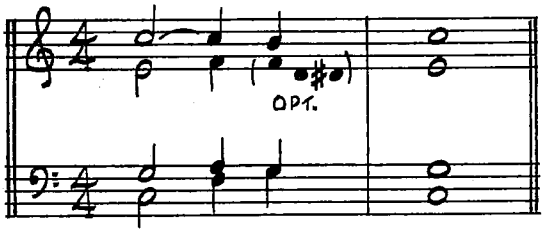
The reader is advised that any given solution is not to be regarded as the only solution, nor is it to be regarded as the "best". Rather, regard each as REPRESENTATIVE ONLY, and examine it with a critical eye and ear on the:

Grammatical Principles
Voice Leading
Chord Structure and Voicing
Rhythmic Balance
Consistency of Style

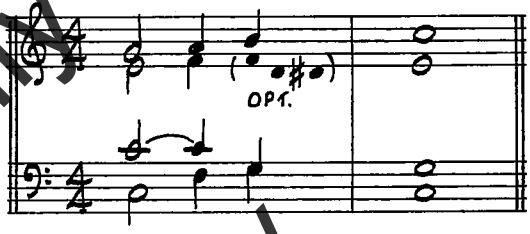
In other words, examine each with an attempt to find the MUSICAL REASON behind the technical details.

ASSIGNMENT 22

1c.



1g.



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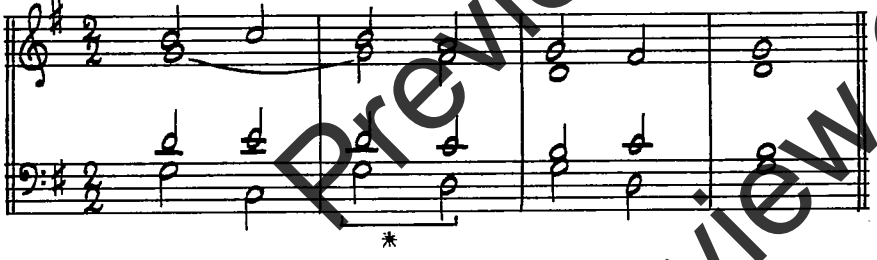
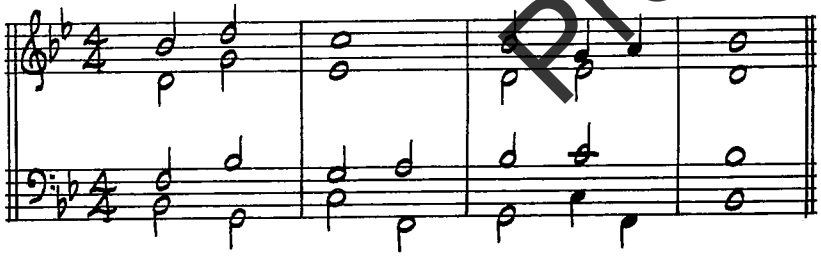


*Similar motion not serious here. The danger in similar motion is related to the amount of energy expended. For instance, 3 parts leaping and one stepping in the same direction is more serious than 3 parts stepping and one leaping, etc.

ASSIGNMENT 23

1c.



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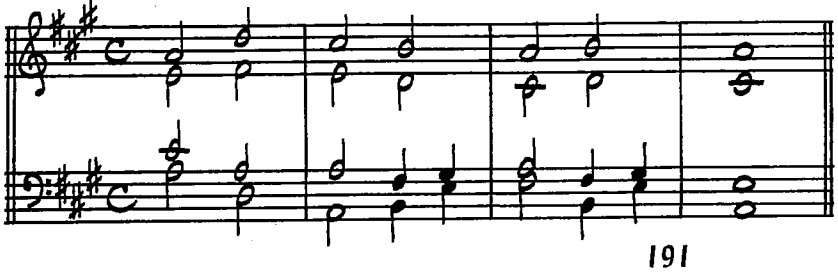

ASSIGNMENT 24

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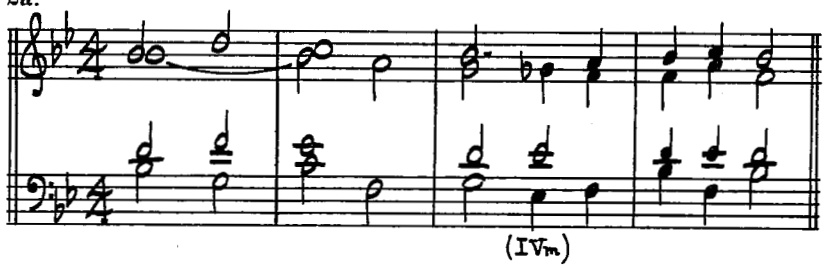

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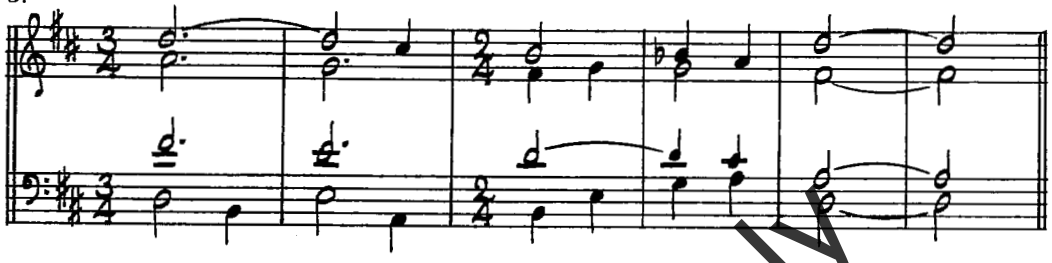
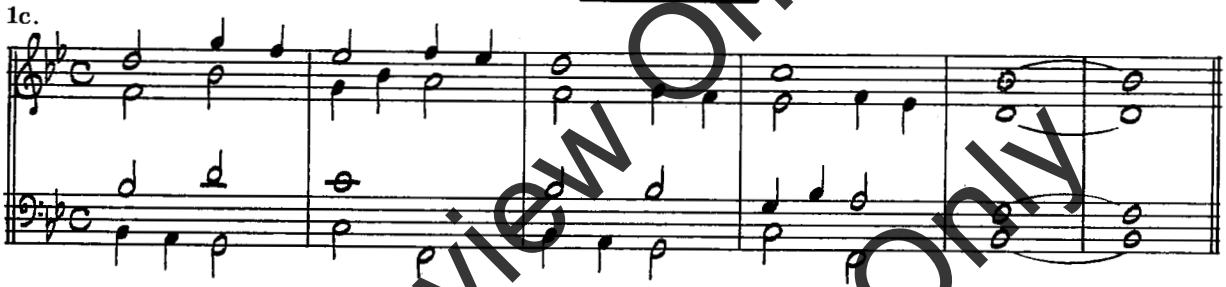


ASSIGNMENT 25

1c.



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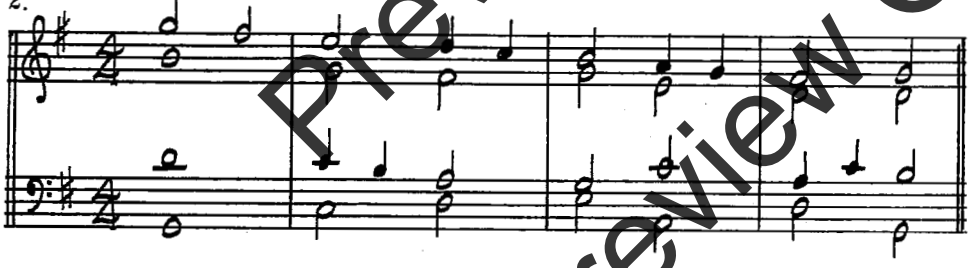

ASSIGNMENT 26

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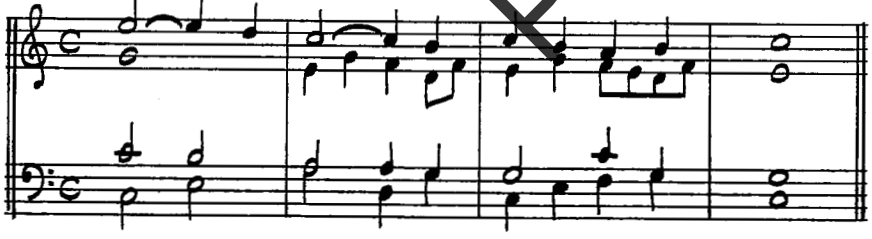
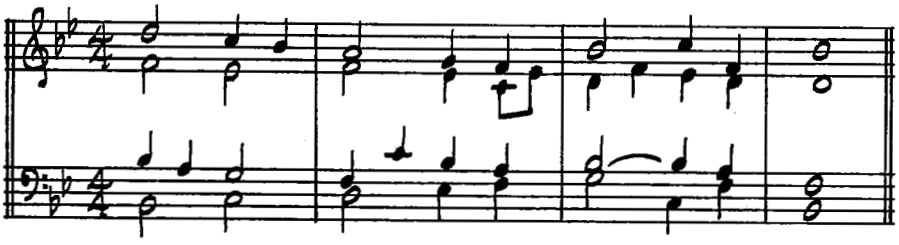
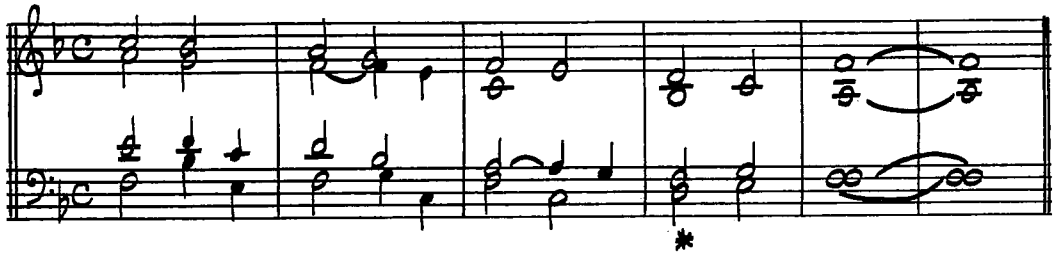


4a.



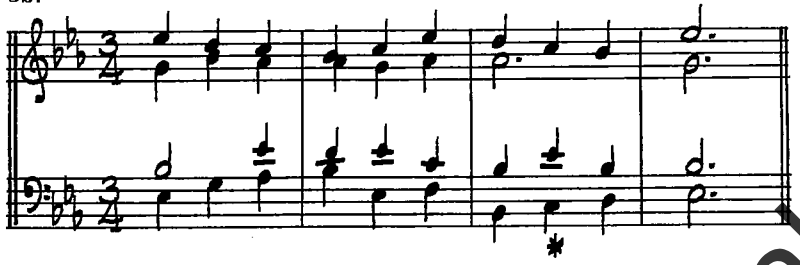
ASSIGNMENT 27

1b.



*Doubled 3rd in the IV chords justified by voice leading.

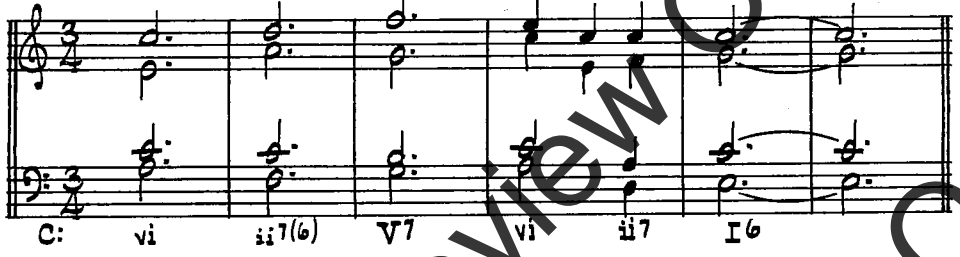
3b.



*Doubled 3rd in the IV chords justified by voice leading.

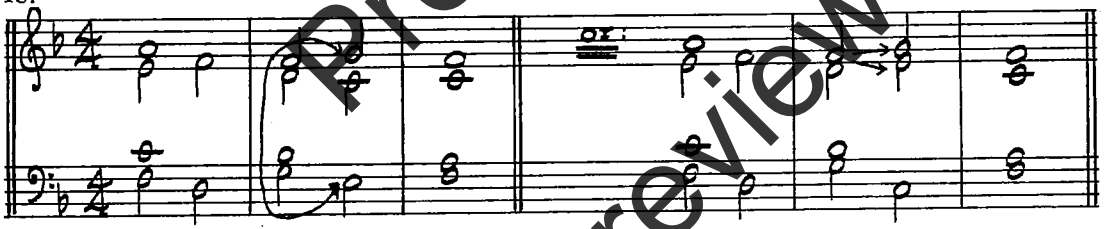
ASSIGNMENT 28

2a.

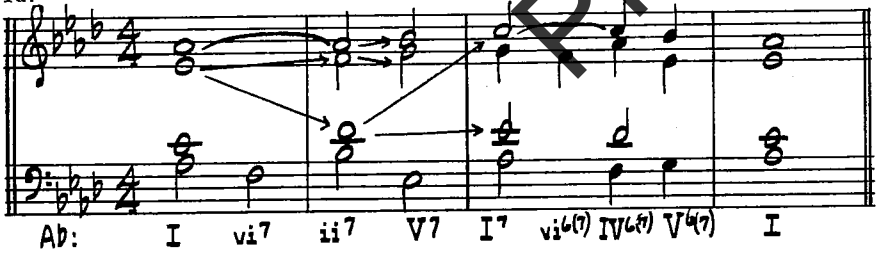


ASSIGNMENT 29

1c.



1d.



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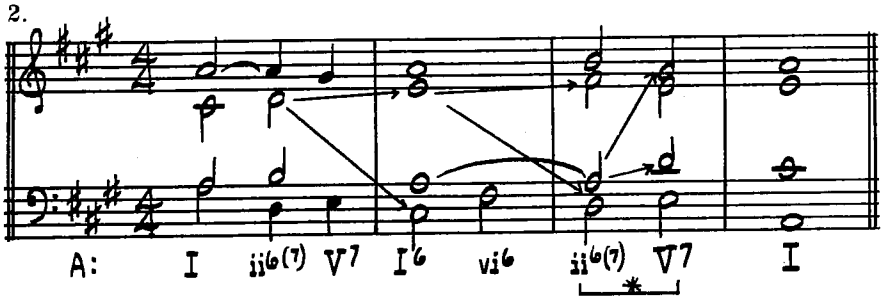
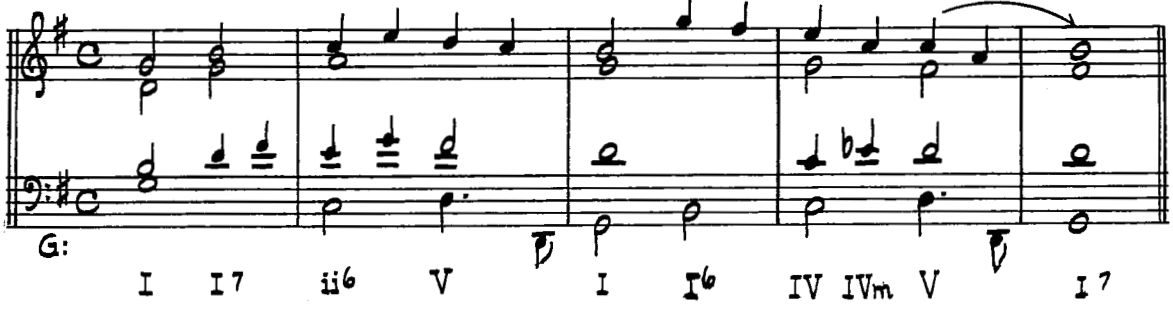


*mi^7 leaping up to another mi^7

ASSIGNMENT 30

2a.



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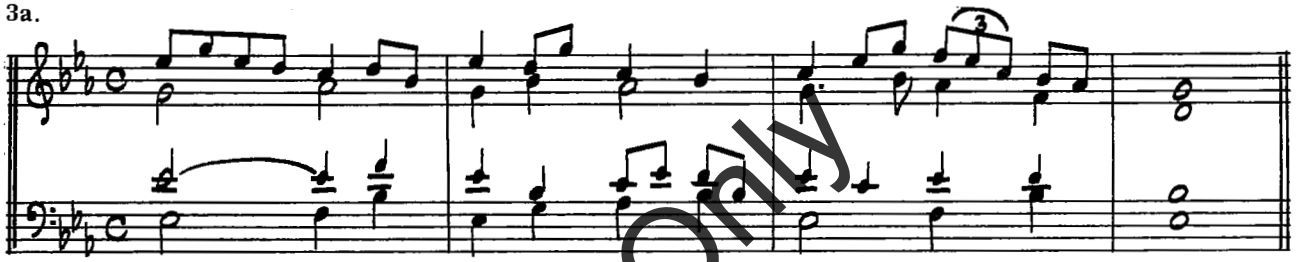

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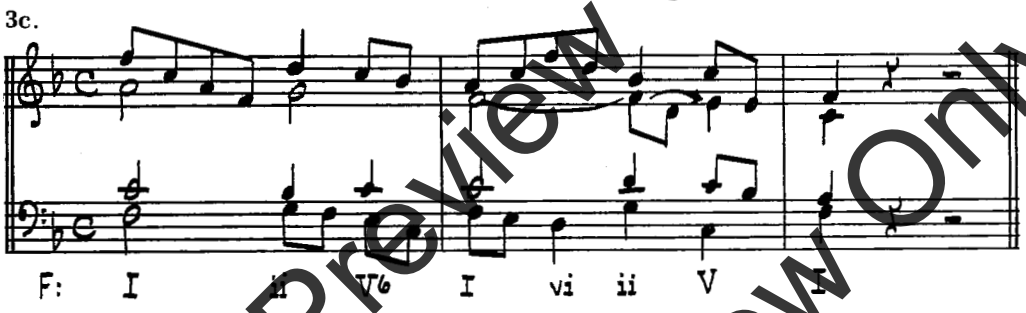
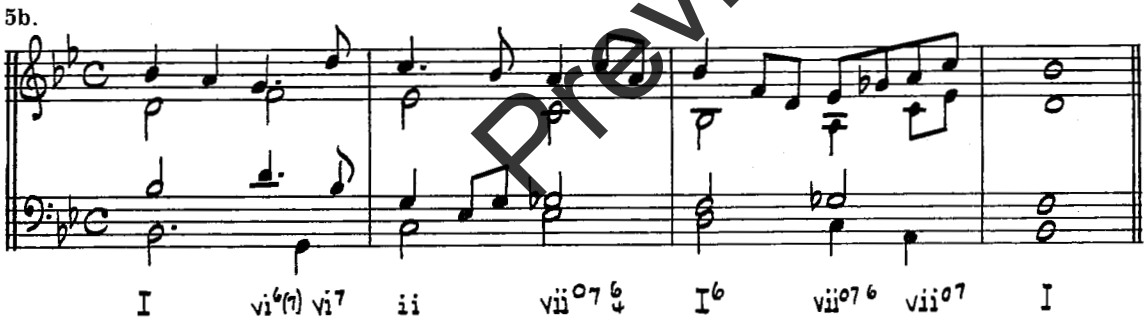


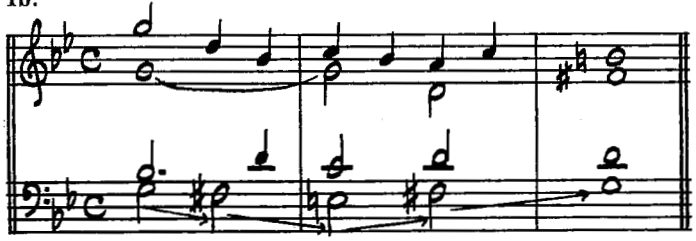
ASSIGNMENT 31

5b.



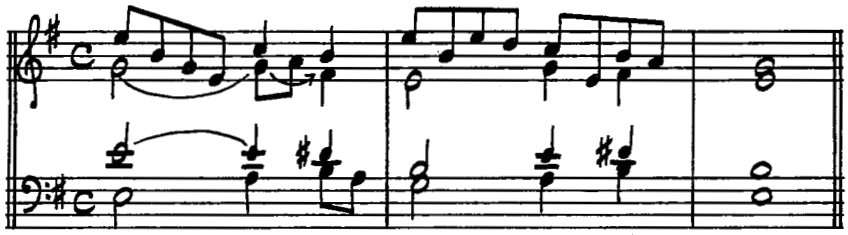
ASSIGNMENT 32

1b.



Assignment 32 (cont'd)

1c.



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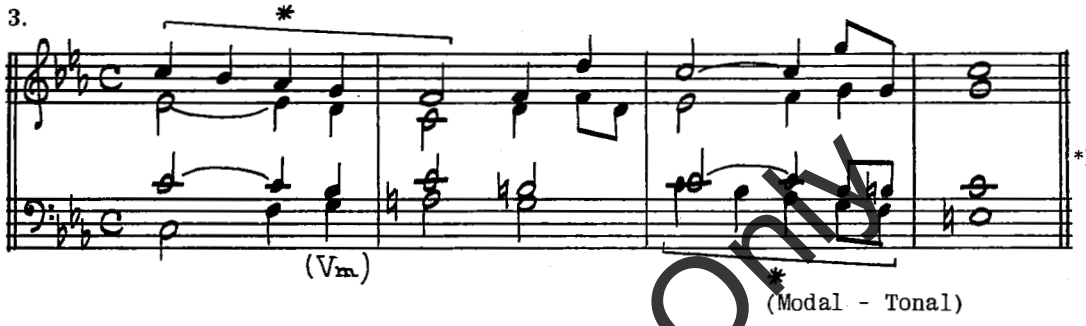
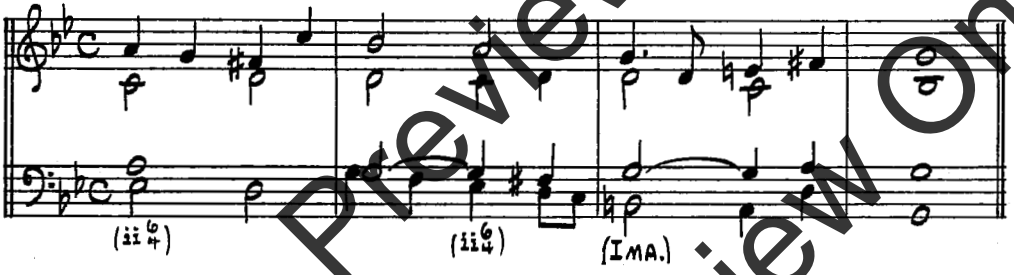


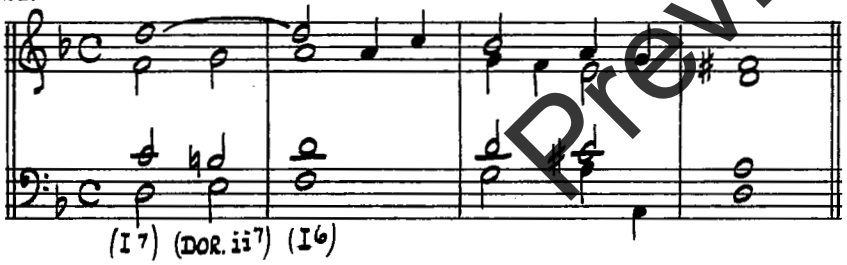
*Note relationship

ASSIGNMENT 33

2a.



2d.



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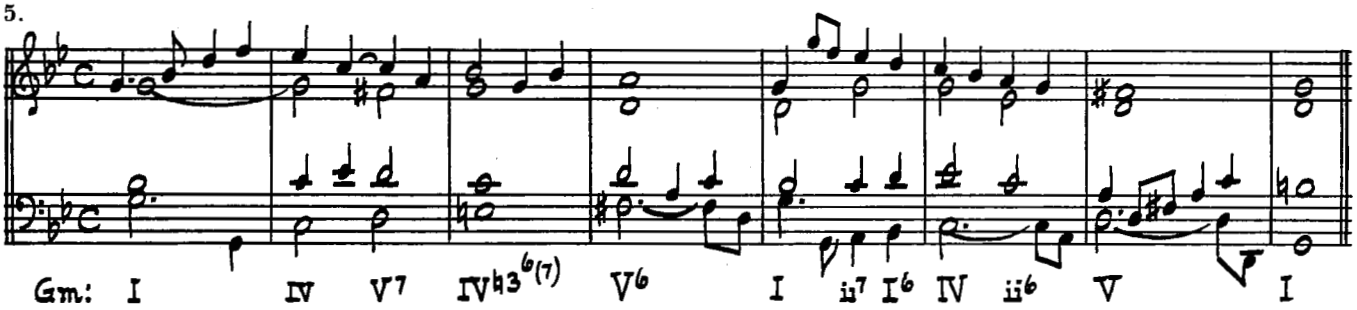
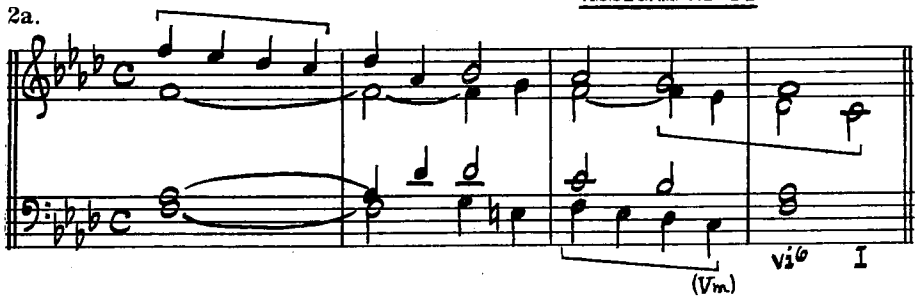


(Note "imitative" relationships in above)

ASSIGNMENT 34

2a.



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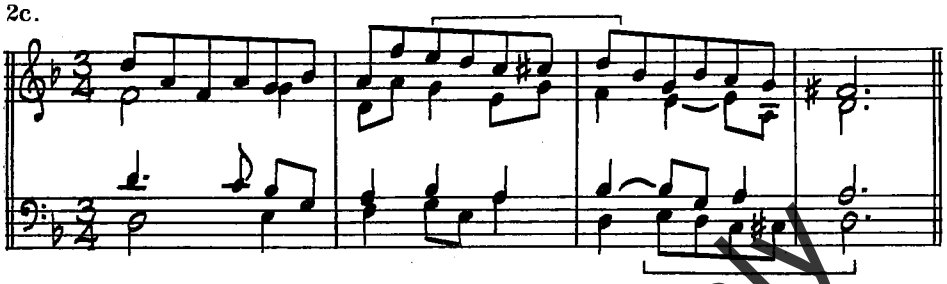

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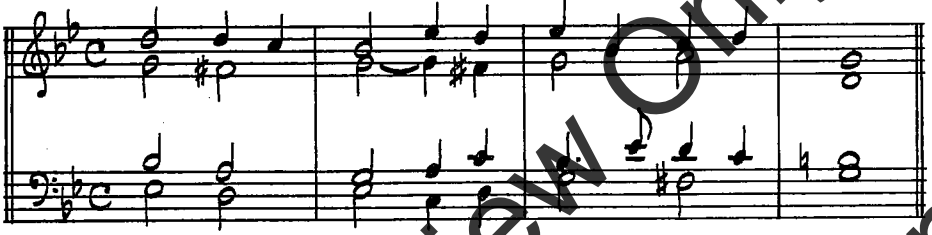
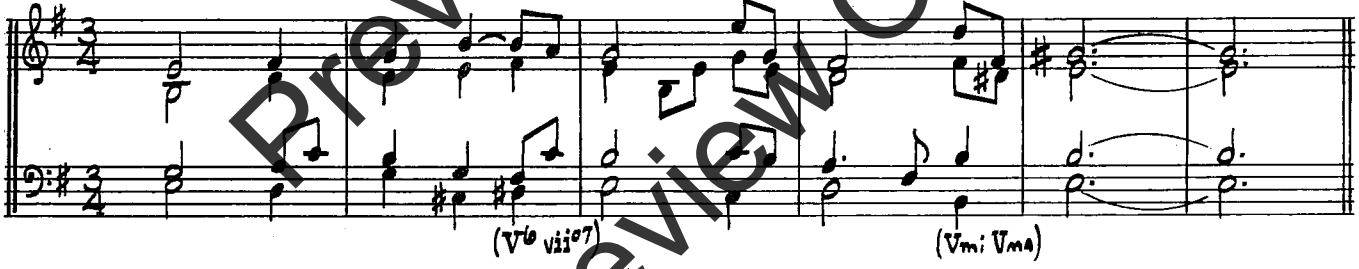


ASSIGNMENT 35

2b.



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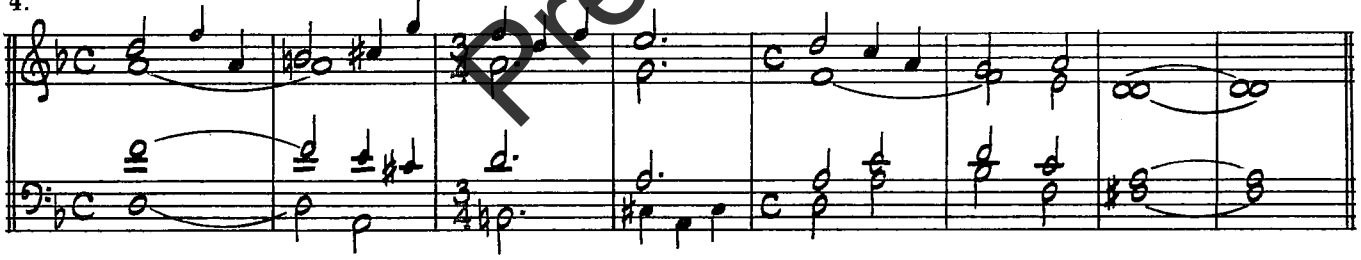

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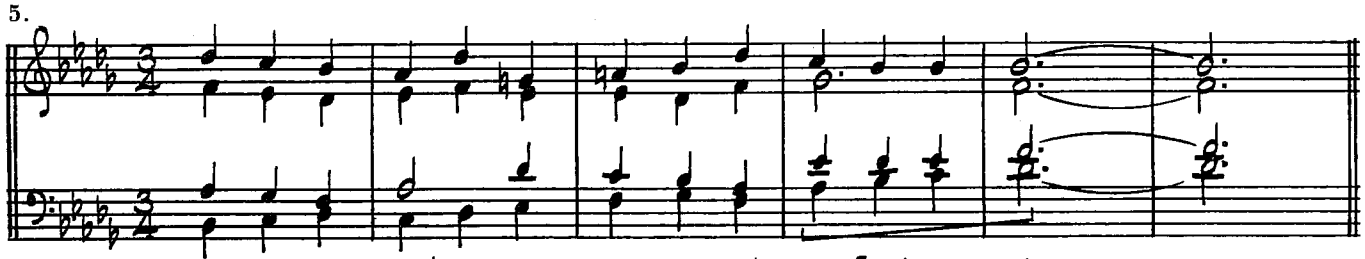
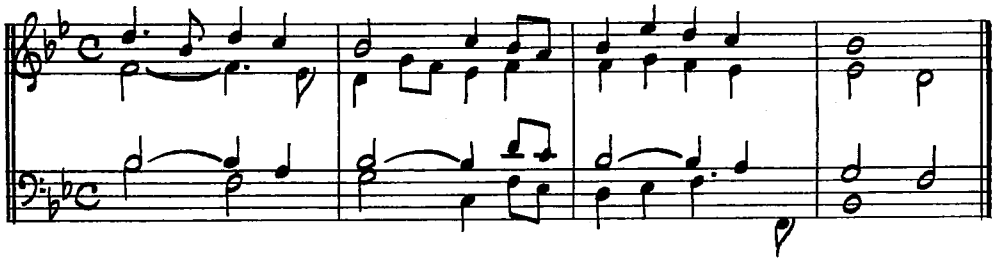


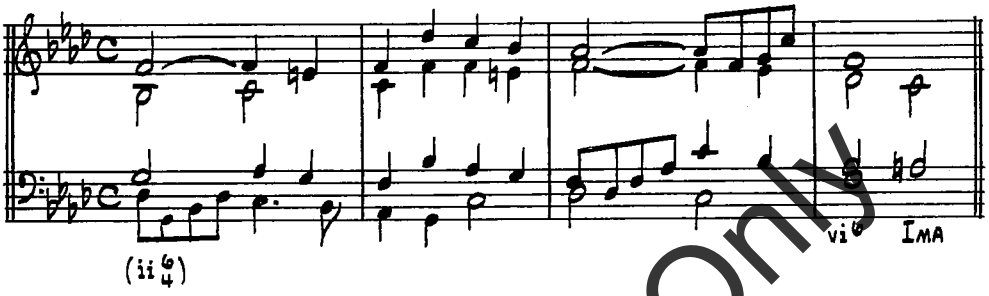
(Note: Bass cadential in related major!)

ASSIGNMENT 36

3a.



3b.



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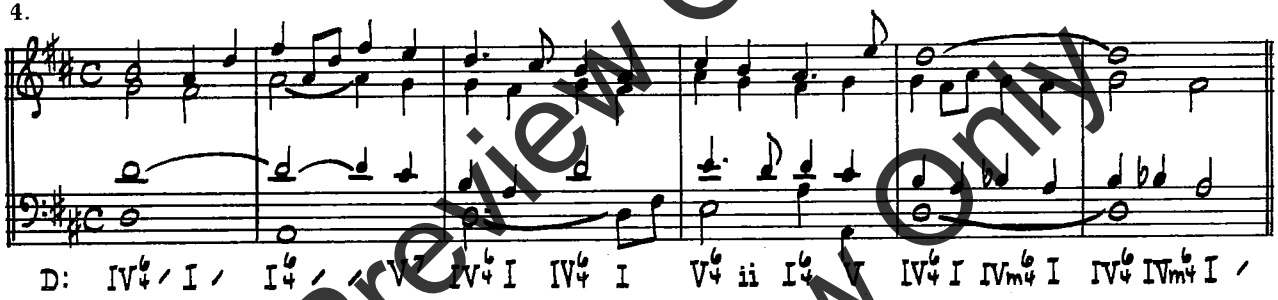
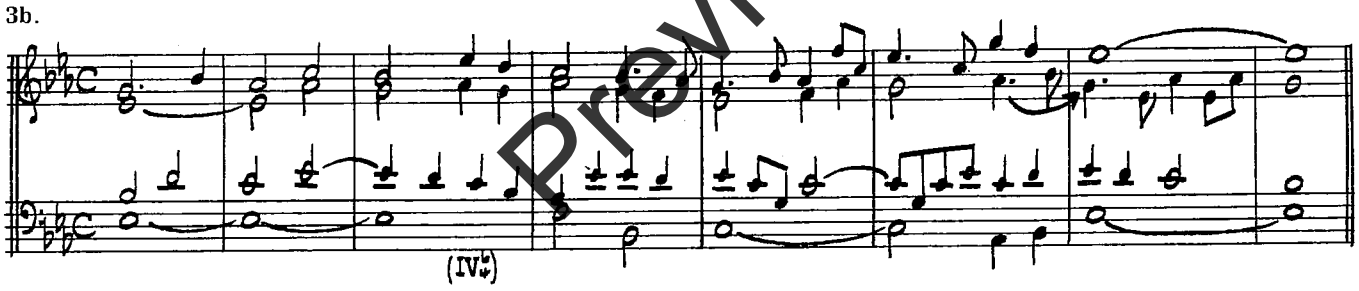


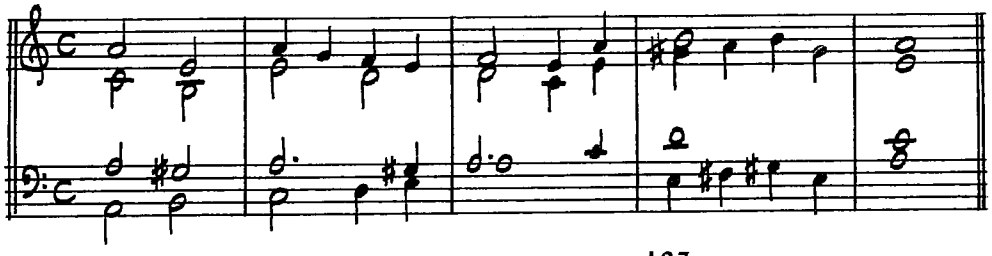
ASSIGNMENT 37

3b.



ASSIGNMENT 38

4.



Assignment 38 (cont'd)

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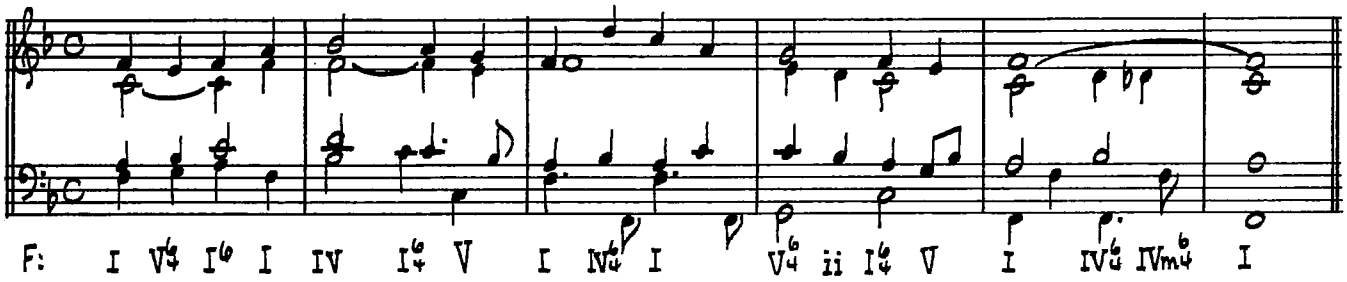

ASSIGNMENT 39

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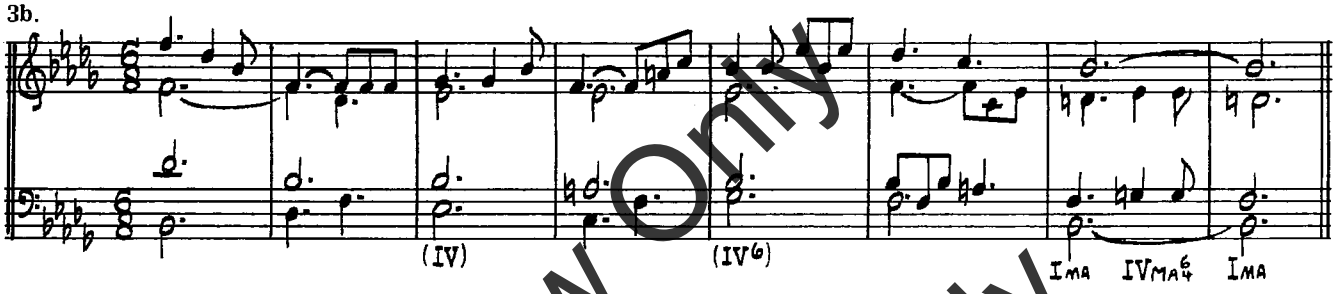

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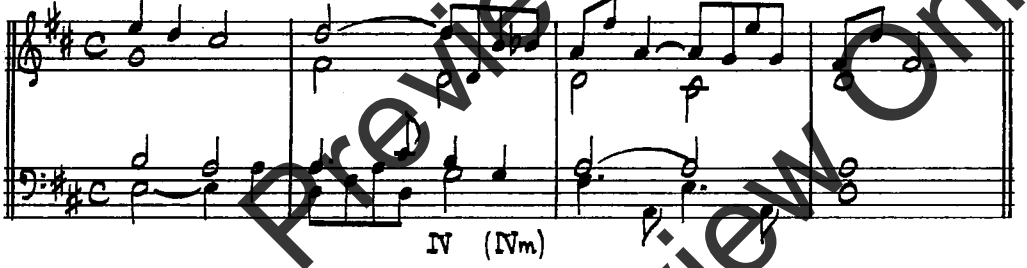

ASSIGNMENT 40

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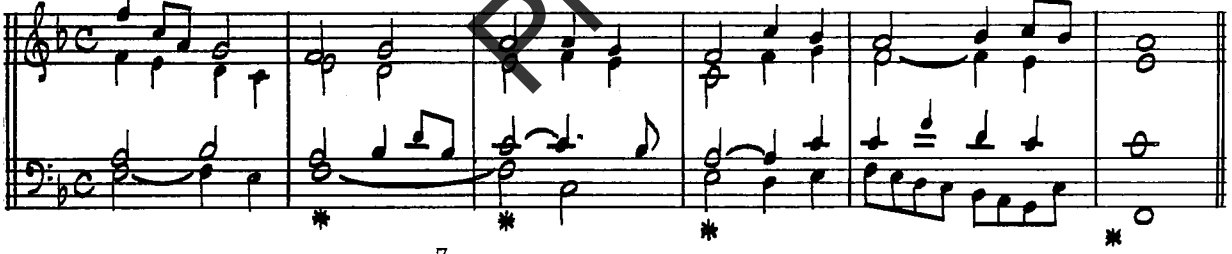
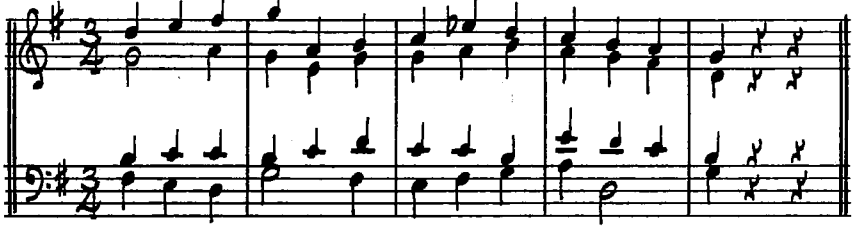


*Note exploitation of sound of I^7.

4b.



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