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GRADUATE COLLEGE

THE DEVELOPMENT OF A BASIC FOUNDATION IN CHURCH ORGAN TECHNIQUE FOR THE BEGINNING ORGANIST

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

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PAULINE PECK RIDDLE

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1972

THE DEVELOPMENT OF A BASIC FOUNDATION

IN CHURCH ORGAN TECHNIQUE

FOR THE BEGINNING ORGANIST

APPROVED BY

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THE DEVELOPMENT OF A BASIC FOUNDATION IN CHURCH ORGAN TECHNIQUE FOR THE BEGINNING ORGANIST

CHAPTER I

The Problem

Introduction

The intent of this experimental research is consonant with a statement from Source Book III: Perspectives In Music Education on quality teaching by Oleta A. Benn, which states:

> "In order to teach music, which is an art of maturity to those who are immature, we must make such adjustments in techniques and materials as are necessary for the physical and emotional levels of our students, but the final goal for those students must be in the same direction as the goal of the professional. The learnings must be the same. They may differ in degree but not in kind."[1]

It is the purpose of this study to develop a technical beginning course of study for the potential church organist and to evaluate its effectiveness. The series of

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[1]Bonnie C. Kowall, ed., Source Book III: Perspectives In Music Education (Washington, D. C.: Music Educators National Conference, 1966), p. 251.

lessons will be designed to develop basic skills for hymn playing and other service music. Also included in this study will be examples of organ repertoire commensurate with those basic skills.

"The pupil commencing the study of the organ should have previously acquired a sound and well-developed piano technique."[2] This might include proficiency in all major and minor scales and arpeggios and competency with such literature as the Bach Two-Part Inventions and easier sonatas of Haydn, Mozart, and Beethoven. This level of proficiency would indicate capacity and readiness for an intelligent response to basic organ techniques.

It is the writer's opinion that the study of organ should establish a foundation that could prepare the student toward becoming a professional organist should he so desire. At the present time elementary organ methods are designed for the person who wants to play for "fun;" thorough, "serious" materials are reserved for the advanced student. While it may be agreed that the aspiring beginner needs to learn proper organ techniques from the start, there is a dearth of well-founded study material at this level.

Organ playing is an art in itself and is not

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[2]Flor Peeters, Ars Nova (New York: C. F. Peters Corp., 1948), p. 3.

something to be "picked up." Consequently, unless the proper foundation is established, it is impossible to learn to play the organ well. An article from The Diapason concerning teaching maintains that: "The student must learn to play the manuals and the pedals at the same time, and he must start at the bottom of the pedal board and learn to play slowly and carefully."[3]

The sequence of educational experiences as described by Benjamin Bloom should be "one in which each experience helps the student advance to a greater or lesser extent toward a given set of objectives."[4] These educational experiences must be planned carefully, starting where the learner is and advancing him to a new level of competence or maturity.

It is necessary to acquire a new concept of technique for the beginning organist as opposed to those used by the pianist. One of the techniques the church organist needs to understand is the importance of a legato style of playing. Organ touch differs from piano touch, since the organ has no sustaining pedal; the tone on the organ continues at the same intensity until the key is

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[3]Mildred Andrews, "Organ Teaching of 50 Years Surveyed by Master Teacher," The Diapason, L, No. 12 (1959), 12-13.

[4]N. L. Gage, ed., Handbook Of Research On Teaching (Chicago: Rand McNally & Company, 1963), p. 389.

released. When playing legato, the fingers must press the organ keys evenly rather than striking at them and great precision is needed in attacking and releasing the key.

The following glossary of terms indicates the basic techniques for legato playing:

Substitution: an effect created by the key remaining depressed while fingers are rapidly changed.

Finger glissando: the sliding of the finger off a black key to the adjacent white key above or below it. This type of glissando may occur with one note or with two, three, or four notes at once.

Thumb glissando: the sliding and tipping of the thumb in going from one white key to the next white or black key, employed where substitution would be impossible.

Crossing of one finger over or under another: a basic principle of fingering for a smooth legato, used in faster tempos to avoid substitution.

To repeat a note on the piano it is sufficient to strike the repeated note at the proper time, since the sound of each note diminishes rapidly in intensity from the time it is struck. On the organ, however, the sound continues at the same intensity as long as the key is held, and it is only by releasing the key for a definite interval of time that the repeated notes are thus

separated and clearly heard. A pianistic style of playing will not produce the necessary end result obtained by the detached playing of the repeated notes.

It is therefore important for the organist to acquire the techniques necessary for the attack and release of a note, substitution, glissando, and repeated notes in order to play hymns in a musical manner.

Carlton T. Russell wrote an article in The American Organist which states: "Players with weak pedal techniques will find that the bass lines of hymns move constantly, and are by no means written with the limitations of the feet in mind."[5] Beginners are capable of learning such new techniques as the "touch" system of pedaling. In this system for developing a pedal technique, the knees and heels are used to serve as a guide to the interval relationship between the two feet. The heels are kept touching at all intervals up to and including the fifth, whereas the knees are kept touching as far as the interval of an octave. Special symbols are used to indicate pedal technique, and are placed above or below the pedal note. A cognitive taxonomy of technical organ skills, Figure 1, illustrates the necessary manual and pedal techniques which must be coordinated to develop the legato style necessary for hymn playing.

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[5]Carlton T. Russell, "Service Playing," The American Organist, LII No. 4 (1969), 18.

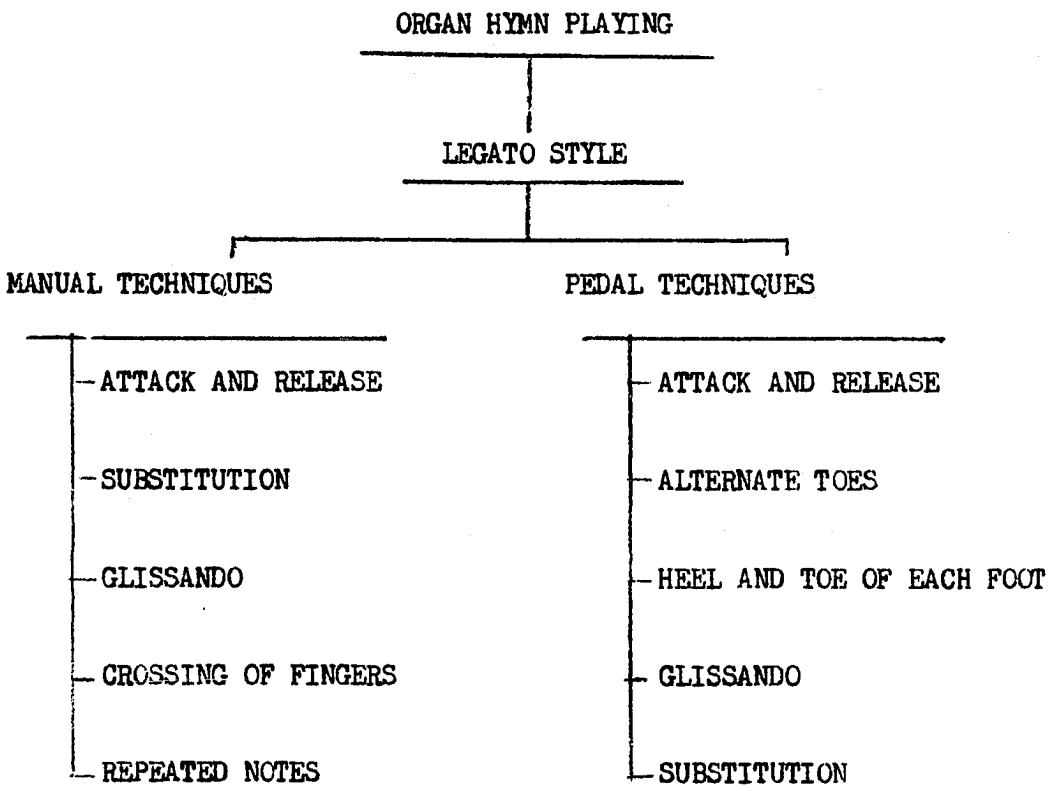

FIGURE 1. - COGNITIVE TAXONOMY OF TECHNICAL SKILLS

A further explanation of manual and pedal techniques is necessary in order to understand the complexities of organ playing that will confront the student who has thus far only been involved with piano keyboard techniques.

MANUAL TECHNIQUES

ATTACK AND RELEASE:

1. Press the key down firmly and quickly.
2. Release the key with the same precise movement.
3. Keep the fingers in contact with the keys at all times.
4. The back of the hand and the knuckles should be parallel to the manual keys.
5. Give the precise time values to the rests and notes.

SUBSTITUTION:

1. In single note substitution, the key remains depressed while another finger plays the note.
2. In double note substitution, two keys remain depressed while the fingers are exchanged.

GLISSANDO:

1. Finger glissando with one, two, or three notes at a time.
2. Thumb glissando between two white keys:
   a) Descending with the right thumb and ascending with the left thumb.
   b) Ascending with the right thumb and descending with the left thumb.
3. Thumb glissando from a white key to a black key.

CROSSING OF FINGERS:

1. A line placed over the finger $\overline{3}$ indicates that one finger should pass over the other.
2. A line placed under the fingering $\underline{3}$ indicates that one should pass under the other.

REPEATED NOTES:

1. Repeated notes of equal value:
   a) Make the rests for the repetition exactly half the value of the note when playing quarter and eighth notes in a fast tempo.

b) Make the rests for the repeated notes one-fourth the value of the note when playing notes of long duration.

2. Repeated dotted notes:
   a) Make the rest equal to the value of the dot when playing in a fast tempo.
   b) Make the rest equal to half the value of the dot when playing in a slow tempo.

3. Tied notes that are repeated:
   a) Omit the tied note in a fast tempo.
   b) Make the rest half the value of the tied note in a slow tempo.

PEDAL TECHNIQUES

ATTACK AND RELEASE:

1. Keep the knees and heels touching as far as the interval of a fifth.
2. Press the key quickly and decisively for the attack of a note.
   a) The heel should remain in contact with the key when the key is depressed by the toe.
   b) The toe should remain in contact with the key when the key is depressed by the heel.
3. Play on the inside of the pedal key with the inside of the heel or toe.

ALTERNATE TOES:

1. When the right foot descends into the lower octave of the pedal board, or the left foot ascends into the upper octave, the pedal will be played on the outside edge of the foot.
2. The ankles should be turned in toward the center as long as possible.

HEEL AND TOE OF EACH FOOT:

1. Slide the heel back or forward on the key when necessary, to put the toe in position for the next note.
2. Slide the toe back or forward .

GLISSANDO:

1. When going from a black key to a white key, slide the toe quickly off the black key.
2. When going from a black key to a black key, slide the toe forward on the first key until the point of the toe is over the next key.

SUBSTITUTION:

1. One foot for another on the same note.
2. Substitution with one foot alone, changing heel for toe or toe for heel.

It is the objective of this study to design a program of learning for the beginning church organist, and to determine by systematic procedures if postulation can be made whether students have been altered through this set of learning experiences. Louis Thorpe states in the 1958 NSSE Yearbook, "Learning to play an instrument or to sing proceeds most satisfactorily when the material to be mastered is presented in such a way that it has meaningful form and constitutes a pattern discernible to the pupil."[6]

Justification For The Study

Organs are more accessible today than ever before. They are available in many high schools and homes of students, or the student may drive to his church and practice the organ. Therefore, more students have opportunity to study and practice the organ.

There is a series of books published by Mary Elizabeth Clark and David Carr Glover for the beginning student who has had no piano background.[7] These books are used by many organ studios for people who want to

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[6]Nelson B. Henry, ed., Basic Concepts in Music Education, The Fifty-seventh Yearbook of the National Society for the Study of Education (Chicago: The National Society for the Study of Education, 1958).

[7]Mary Elizabeth Clark and David Carr Glover, Teacher's Guide for Levels One-Two-Three and Four (New York: Belwin Inc., 1966).

learn how to play the organ for "fun." A "fun" method cannot conceivably give adequate technical preparation to equip one as a qualified church organist.

An article appearing in The Diapason by Mildred Andrews states:

> The "Do It Yourself" style of teaching organ, and its unfortunate results, is not new. As early as 1915 many articles appeared on how to "Teach Yourself to Play the Organ." Back in 1916 people were "picking up the organ." Organists were divided into three groups: 1) Those who can play; 2) Those who think or are told that they can play, (they should be called piano-playing organists); and 3) Those who play because there is nobody else within call who can (a necessary evil, indeed).[8]

Those in groups 2 and 3 could be classed with group 1 if they had a proper course of study. The people in the 3rd group tend to play the pedals with one foot and keep the other foot on the swell pedal.

Several excellent organ texts have been written for the college-age student, but these books do not fulfill the need of the younger teenager in learning to play hymns and other service music.

To attain the desirable objective, the student must develop a basic foundation of technical skill in his beginning study. This, of course, is true in any type of music training. It is particularly important, however, for the young organist to establish the correct technique of playing by learning the proper "touch" system of pedaling.

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[8]Mildred Andrews, "Organ Teaching of 50 Years Surveyed by Master Teacher," The Diapason, L, No. 12 (1959), 12-13.

Too many books have left the method of pedaling to the "hunt-and-peck" system. For many years self-taught typists learned by this system, which by comparison has proved less desirable than the now established "touch" technique. Today in the junior and senior high school the "touch" method is the recognized technical procedure used for the teaching of typing. The object of this study will be to introduce the "touch" pedal technique to the beginning organ student; he need not wait until college before he learns it. (Many bad habits can be formed in the learning of a wrong technique, and the college teacher has to break these habits before the student can progress.)

Today there are a large number of churches that have organs with no one qualified to play them. In many situations high school students who play the piano well, or not so well, are given the task of playing the organ. These organists need either a practical course of study using the proper techniques or a qualified organ teacher. Many towns do not have enough experienced organ teachers. This course of study will be designed so that the inexperienced organ teacher would be able to help a student learn organ technique.

Survey Of Organ Study Literature

A survey of organ study literature reveals that

there is inadequate study material to train beginning church organists in hymn and service playing. Although there are good organ methods for specific levels of ability, the writer has seen a need for a beginning organ study that would teach necessary organ techniques for hymn and service playing to the student with a sound piano background.

The following books are examples of existing organ methods with a brief description of their attributes and limitations.

Method of Organ Playing (Fifth Edition) by Harold Gleason is an excellent method that is widely used in colleges and universities. The material presented is adult, mature, and does not hold the interest of a high school student.

Flor Peeters has published Little Organ Book For Beginners In Organ Playing in 3 volumes. He uses the old German method, and the fingerings in some of the exercises are poor and inaccurate; (for this reason alone) this method really should not be used.

Methode d' Orgue by Marcel Dupré is an organ method for beginning organ students and is concerned only with manual and pedal technique. It is a popular book with college teachers and has a fine section on all ornaments, with many examples from the organ music of J. S. Bach. Technique examples lead to more advanced perfection than through the Gleason method. Dupré allows each teacher to select his

own repertoire to use with the book, but in order to use it effectively a teacher should have had considerable teaching experience.

The Technique and Art of Organ Playing by Clarence Dickinson was a widely used text among college teachers until recent years when better books have been published. It is reasonably good in the area of manual and pedal technique, but not completely edited enough for beginning students. It contains a large number of excellent pieces of music of all periods, but they are too difficult for the beginning organist. The book does not give adequate technical preparation for their performance.

The Organ by John Stainer is a method which was first printed in 1912. It still retains many theories of organ techniques that have been proved inadequate in the last twenty years, such as playing the pedals by feeling, black-key habit, and looking at the pedals.

Introduction to Organ Playing by Richard Enright was published in 1964. Mr. Enright is a successful teacher and performer at Northwestern University in Evanston, Illinois. Permission was given to copy the technique from Dr. Gleason's book. The repertoire is adequate, but not extremely interesting.

CHAPTER II

THE DEVELOPMENT OF TEACHING MATERIALS

Selection of Literature

William C. Hartshorn alleges that "teaching is the organization of learning."[1] He further asserts: "A person learns what he himself does, not what anyone else does, even including his teacher."[2] The course of study in Appendix A, composed of twelve lessons, is designed to provide the necessary tools of methodology in presenting a basic foundation in church organ technique for the beginning organist.

The instructional materials include exercises for attack and release of a note, repeated notes, glissando, and substitution. Separate exercises, all written by the author, are included for the manual and pedal. Another segment of the course of study comprises exercises using manual and pedal techniques in connection with simple hymns and organ repertoire.

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[1]Bonnie C. Kowall, ed., Source Book III: Perspectives in Music Education (Washington, D. C.; Music Educators National Conference, 1966), p. 214.

[2]Ibid., p. 215.

Table 1 indicates the twenty-nine hymn tunes incorporated in the method and the representative hymnals in which they appear. The student should be encouraged to purchase his own hymnal and to copy from the method fingerings and other notations necessary for playing the hymn tunes. These aids will be invaluable to him as he progresses in hymn playing.

The pupil commencing the study of the organ should have previously acquired a sound and well-developed piano technique. This should include proficiency in all major and minor scales and arpeggios and competency with such literature as the Bach Two-Part Inventions and easier sonatas of Haydn, Mozart, and Beethoven.

Beginning organ study should establish a foundation that could prepare the student to become a professional organist if he should so desire. This course of study is designed with that objective in mind. Specifically, it is intended to prepare the beginner in the proper techniques and to provide a basic foundation for church service playing.

The Seventy-Nine Chorales for the organ by Marcel Dupré should be used in conjunction with these lessons.[3] This collection is excellent preparation for the study of the Bach Chorale-Preludes and is based on the melodies of

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[3]Marcel Dupré, Seventy-Nine Chorales, op. 28, (New York: H. W. Gray Company, 1932).

TABLE 1

HYMN TUNE	BAPTIST HYMNAL	CHRISTIAN SCIENCE	CHRISTIAN WORSHIP	THE HYMNAL	THE HYMNAL ARMY & NAVY	LUTHERAN HYMNAL	METHODIST HYMNAL
Austrian	X	X	X	X	X		X
Coronation	X	X	X	X	X	X	X
CWM Rhondda	X		X	X			X
Dix	X	X	X	X	X	X	X
Duke Street	X	X	X	X	X	X	X
Easter Hymn	X	X	X	X	X	X	X
Hamburg	X	X	X	X	X	X	X
Hursley	X	X	X	X	X	X	X
Hyfrydol	X	X	X	X	X	X	X
Hymn to Joy	X		X	X	X	X	X
Italian	X	X	X	X	X	X	X
Kremser	X		X	X	X	X	X
Laudes Domini	X		X	X	X		X
Love Divine	X			X			X
Lyons	X	X	X	X	X		X
Marion	X		X	X	X		X
Maryton	X	X	X	X	X		X
Nicaea	X	X	X	X	X	X	X
Old 100th	X	X	X	X	X	X	X
Retreat	X	X	X	X	X		X

TABLE 1 - Continued

HYMN TUNE	BAPTIST HYMNAL	CHRISTIAN SCIENCE	CHRISTIAN WORSHIP	THE HYMNAL	THE HYMNAL ARMY & NAVY	LUTHERAN HYMNAL	METHODIST HYMNAL
St. Agnes	X	X	X	X	X	X	X
St. Anne	X	X	X	X	X	X	X
St. Catherine	X	X	X	X	X		X
St. Peter	X	X	X	X		X	X
Seymour	X	X	X	X	X		X
Sicilian Mariners' Hymn	X	X	X	X	X		X
Spanish Hymn	X					X	
Retreat	X		X		X		X
Vesper Hymn	X		X		X		X

Walter Hines Sims, Baptist Hymnal (Nashville: Convention Press, 1956)

Christian Science Board of Directors, Christian Science Hymnal (Boston: The Christian Science Publishing Society, 1937)

William P. Shelton and Luther Wesley Smith, Christian Worship (St. Louis: The Bethany Press, 1941)

Clarence Dickinson, The Hymnal (Philadelphia: Presbyterian Board of Christian Education, 1933)

Ivan L. Bennett, The Hymnal - Army and Navy (New York: A. S. Barnes & Company, Inc., 1941)

Evangelical Lutheran Synodical Conference of North America, The Lutheran Hymnal (St. Louis: Concordia Publishing House, 1941)

Robert G. McCutchen, The Methodist Hymnal (Nashville: Whitmore and Smith, 1939)

old chorales used by J. S. Bach. Each of the Dupre Chorales, written in three voices, prepares the way for the study of one of the many technical difficulties with which the student is confronted when he attempts to master the Bach Chorales. Through this study the student becomes familiar with the magnificent chorale melodies early in his organ study. This familiarity helps prepare him for the future study of the Bach Chorales.

The primary objective of Lesson One is to acquaint the student with the technique for attack and release of the manual keys. One problem that the beginning student encounters is a good hand position, which should be similar to that of holding a baseball. A key should be pressed down firmly and quickly, and released with the same precise movement.

Organ touch differs from piano touch and therefore new techniques must be learned. The legato technique is one of the most essential requirements of good organ playing. When playing legato, the fingers should always press the keys evenly rather than striking them and there should be no space or gap between the sounds. Tone must follow tone with neither the slightest break nor overlapping of sound.

Whatever time an organ key is depressed, the sound of the note continues with absolutely equal duration. This endurance of equal force is not possible on any other

keyboard instrument. Since the tone on the organ continues at the same intensity until the key is released, it must be impressed upon the student that great precision is needed in attacking and releasing a key. Each note must be released precisely with a definite upward finger motion.

Exercises involving the major and minor five-tone scales are used to develop the technique of attack and release. A great factor in securing clarity is a firm demarcation of the rests. Rests should be played exactly like notes, except that the keys should be released instead of depressed. "No instrument is more sensitive to legato playing than the organ because the action is on the top of the keys, and unless a definite release is effected the endings of phrases cannot be completed."[4]

In the past it has been considered inevitable that a pupil, in order to develop his technique, should labor over a large quantity of exercises known as technical studies. James Mursell in The Psychology Of Music states that "It is clearly perverse to regard the musician's mere agility or accuracy or endurance as valuable for their own sake."[5] In addition Mursell believes that "such an attitude is an impediment even to the acquisition of technique itself, for

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[4]Reginald Goss Custard, Systematic Organ Pedal Technique and General Interpretation (New York: Galaxy Music Corp., 1936), p. 34.

[5]James L. Mursell, The Psychology Of Music, (New York: W. W. Norton & Company Inc., 1937), p. 245.

a skill is always likely to be learned most effectively in a functional situation and in close conjunction with its operative aim."[6] It is the purpose of the method in Appendix A to present some technical studies, and also a large number of hymn tunes as appropriate study material in teaching the necessary techniques of an organist. While practicing hymn tunes and incorporating various techniques, the student will be learning music vital for a worship service.

Included as study material is a two-voice excerpt from "Sicilian Mariners' Hymn" for practicing the legato style by connecting each note.

The execution of major and minor thirds while combining legato and detached notes is another technique utilized in hymn playing. In these exercises the soprano and bass lines are played smoothly, while the alto and tenor parts are detached. Precise coordination is necessary so that the legato notes may be heard in distinct contrast to the detached notes.

Playing broken triads in a legato manner while crossing fingers over the thumb is another technique necessary to smooth organ playing. The organists should keep the back of the hand as level as possible while playing these exercises.

Another important asset in legato fingering is the application of the glissando action. Thumb glissando consists of sliding the thumb from one key to another. In

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[6]James L. Mursell, The Psychology Of Music, p. 245.

descending passages of thumb glissando played with the right hand, each note is first played with the tip of the thumb and then the tip is slid into position over the next key.

In ascending passages with the right hand the opposite motion is required. The motion is with the base of the thumb, sliding to the tip of the thumb, and playing the next note with the base of the thumb.

The left hand ascending passages are begun with the base of the thumb, the next note played with the tip of the thumb. The left hand descending technique is the reverse procedure.

Excerpts of the hymn tunes "Kremser," "Vesper Hymn," and the "Spanish Hymn" are included for practice on the glissando technique.

A. Eaglefield Hull alleges, "Too little thought is given by students to questions of fingering, yet without a sound foundation in this direction, an adequate rendering of any music is impossible."[7] Time spent in discovering the best fingerings will be well compensated by a surety of touch and clarity of style unattainable in any other way. It is important to decide the fingering of passages before commencing to practice them, and once a practical solution of the fingering is arrived at, the passage should always be fingered in the same way. All sound principles

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[7]A. Eaglefield Hull, Organ Playing; Its Technique and Expression (London: Augener Ltd., 1911), p. 65.

of organ fingering will be based chiefly on the legato touch and, therefore, all the exercises, hymn tunes, and compositions in the method have been carefully fingered for the student.

The final composition in Lesson One is "Savez vous mon cher voisin," a noel by J. F. Dandrieu.[8] The noel is first presented with fingerings, the trills written out as they should be played, and the exact amount of rest to be subtracted from the value of the first of two repeated notes. On the following page the noel is written as it would normally appear in a collection of compositions. The purpose of the first presentation is to instruct the student in the proper techniques involved in this composition. The student is encouraged to memorize this noel.

Lesson Two introduces substitution, another technique that is basic to organ playing. Ordinary piano fingering proves ineffectual for a true legato on the organ. This difficulty is overcome by a system of finger substitution, that is, a sliding change of fingers on the same note. The exercises are to be played in a legato style while the substituting of fingers is taking place. One note must follow another smoothly, and it is necessary to make the substitution quickly and with precision.

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[8] Jean-Francois Dandrieu, "Savez vous mon cher voisin," Noels (New York: Edwin F. Kalmus Publisher of Music, [n. d.]), p. 14.

One exercise involves playing a major scale using the first and second fingers while other major scales are played with second and third fingers, third and fourth fingers, and fourth and fifth fingers.

Edwin Evans notes, "When two parts are required to be executed by the same hand, it is obvious that each of them can only employ such fingers as may be spared from the other; and it is in the endeavour to make the most of the few fingers which remain that the specialities of organ technique arise."[9] Excerpts from "Laudes Domini" and "Hamburg" use the technique of playing two chords in succession smoothly while substituting the fingers.

Richard Enright states some well-known principles for developing pedal accuracy:

1. Keep the knees together when playing intervals of an octave or less. This also causes a certain amount of tension in the upper muscles of the legs.

2. Keep the heels touching for intervals of a fifth or less. This will promote accuracy in playing the smaller intervals.

3. Do not look at the pedals.[10]

The pedal key should be pressed quickly and decisively for the attack of a note and released with the

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[9]Edwin Evans, Technics Of The Organ (New York: Charles Scribner's Sons, 1938), p. 19.

[10]Richard Enright, Introduction to Organ Playing (New York: Abingdon Press, 1964), p. 23.

same precision. The heel should remain in contact with the key when the key is depressed by the toe, and the toe should remain in contact with the key when the key is depressed by the heel. The student should play on the inside of the pedal key with the inside of the heel or toe.

The standard sign ∧ indicates the toe, and the sign ∪ indicates the heel. The right foot is indicated when the sign is placed above the staff and the left foot is indicated by placing the sign under the staff.

Exercises are written for playing legato with the toes on white notes, alternating right and left toe. An excerpt from "St. Anne" utilizes the technique of alternating the right and left toe in a legato manner.

The interval of a sixth is very common in hymn tunes; therefore, manual exercises in various keys are written for playing the interval of a sixth in the legato style. Another valuable tool is the technique of combining legato and detached notes for the interval of a sixth. In these exercises, the soprano and bass lines are legato, while the alto and tenor lines are played detached. While mastering these combinations, it is important for each rest to receive its full duration of time.

Playing a repeated note requires the learning of another basic organ technique. The attack and release of the organ key must be made in the proper rhythm, and therefore, the value of the first note will be less (followed

by a rest) so that the second note may be played as written. The student should make a great point of the smooth but clear articulation when notes are repeated, but Hull reminds the student that "This sort of repetition must not be confused with the staccato touches, great care should be taken to render the crossing of parts absolutely clear."[11] A three-voice excerpt from "Retreat" for manuals demonstrates the technique of repetition.

Another hymn tune, "Love Divine," written for three voices, requires the student to play repeated notes and use finger substitution for a flowing legato line.

A two-voice noel for the manuals by L. C. Daquin, the concluding composition in this lesson, requires a clear, precise technique in playing repeated notes. The student is presented with the problem of trills and mordents which begin on a repeated note, therefore, utmost dexterity and coordination is demanded for a correct performance.[12]

Lesson Three enables the student to receive further practice in substitution by playing the minor scales with two fingers, using the technique of substitution.

As in piano playing, a correct and easy position

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[11]A. Eaglefield Hull, Organ Playing; Its Technique and Expression, p. 192.

[12]Louis-Claude Daquin, "Sur Les Jeux D'Anches, Sans Tremblant," Noels (New York: Edwin F. Kalmus Publisher of Music, n.d.), p. 5.

of the fingers over five consecutive scale notes will be the basis of all fingering. All problems will be solved by some extension or modification of this hand-placement which must be regarded as the normal type. Developments from this hand position are made by extension or contraction. According to Hull, "These two devices constitute by far the best style of fingering for the organ as the hand is kept in a quite easy position."[13]

Because finger extension is another necessary tool for the church organist, exercises consisting of broken thirds are written for the third and fourth fingers, and the fourth and fifth fingers. These are included to facilitate the student in playing a legato line.

Since many hymn tunes employ consecutive thirds, the technique of substitution on double notes is very important. Exercises consisting of successive thirds in both hands and in various keys are presented for the student to become familiar with the technique of double substitution. In the first exercise, the third and fourth fingers of the right hand are on one note and the first and second fingers are on the other note. Double substitution, like single substitution, should be accomplished quickly, but in a rhythmic motion.

The soprano, alto, and tenor parts of "Hyfrydol"

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[13]A. Eaglefield Hull, Organ Playing; Its Technique and Expression, p. 192.

were copied from the hymnal and fingered to demonstrate the techniques learned thus far, which include the playing of consecutive thirds and sixths. The student may observe from this hymn tune the necessity for the hands to be flexible in playing the alto note in order to produce a legato line. Some chords require the left hand to play the alto note so that the right hand can make a smooth skip in the soprano voice. The student will profit from having his hymnal marked in this manner.

Great emphasis should be attached from the outset to the foundation of a proper system of pedaling. In this lesson the technique for alternating toes on white and black keys is introduced by several exercises in various keys because this is a basic legato pedal technique.

The function of the dot in standard organ terminology is very helpful to the student. "When a dot is placed over a note, the latter loses exactly half its value."[14]

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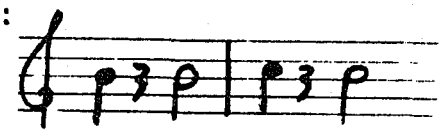
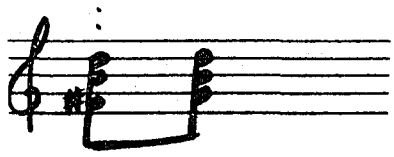
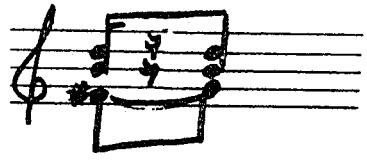
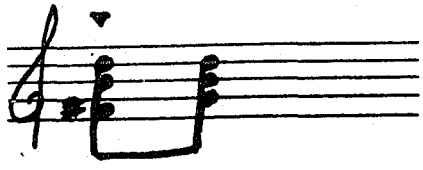
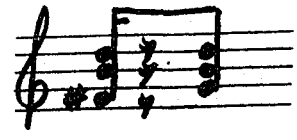
[14]Marcel Dupré, Seventy-Nine Chorales, iv.

Written: Played: 

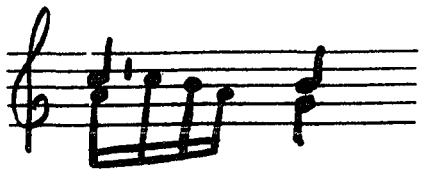
Several dots placed one above another refers to several voices on the same stave:

Written:  Played: 

A comma is used in regard to a whole chord placed on the staff:

Written  Played 

A vertical dash between 2 notes is used when a unison has to be repeated:

Written:  **Played:**

Examples are given for each of these notational types in Lesson Three.

It is often necessary when playing hymn tunes to alternate the toes while playing a repeated note. To develop this technique, several pedal exercises alternating toes are written to instruct the student in accomplishing this feat. Since strict rhythm must be observed, it is necessary to play with precision, giving the exact duration for each note and rest.

Another two-voice noel for manuals by L. C. Daquin

concludes this lesson, and through it the student may further develop the techniques of playing a legato line by means of substitution and playing repeated notes in exact rhythm.[15]

Lesson Four incorporates the major and minor broken triads for teaching substitution. Attaining proficiency in these exercises is significant because many hymn tunes progress along chord lines.

Several unusual finger progressions are needed for legato playing. One important technique is the crossing of one finger over or under another finger. The devices of turning one (thumb) under fingers or fingers over the thumb were little used by Bach (if at all); but according to Hull, "the important part played by the thumb was completely unknown to the early organists. The turning of fingers (2, 3, 4, 5) over or under one another was quite a common practice with Bach and his predecessors."[16]

The standard organ marking, a line over the fingering (2), denotes that one finger should pass over the other. An example: the second finger passes over the third finger, the third finger passes over the fourth finger, and the fourth finger passes over the fifth finger.

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[15]Louis-Claude Daquin, "En Duo, Sur Les Jeux D' Anches, Sans Tremblant," Noels, p. 22.

[16]A. Eaglefield Hull, Organ Playing; Its Technique And Expression, p. 70.

A line under the fingering (4) denotes that one finger should pass under the other.

The soprano, alto, and tenor voices of "Seymour" are written out to demonstrate the techniques of repeated notes, substitution, glissando, and the passing of finger under finger.

The first assignment of a chorale in the Seventy-Nine Chorales For The Organ by Marcel Dupré is made in this lesson. Dupré states in his Introduction, "In order to play these chorales correctly it is necessary to observe strictly the following rules:

1. The legato must be perfect.
2. The rhythms must be scrupulously accurate.
3. The length of the rests must be precise.
4. The simultaneity of the voices must be heard exactly together.
5. The attack and break of the chords must take place at the same instant.17

Chorales are assigned in each lesson as supplementary material and necessary preparation for the church organist. These old hymn tunes incorporate the same techniques required for playing hymn tunes in the hymnal.

Many times the bass voice in a hymn tune will center around the tonic and the dominant or sub-dominant. Therefore, a necessary technique is for one foot to play heel and toe around the tonic center while the other foot plays heel and toe around the dominant tonal center.

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[17]Marcel Dupré, Seventy-Nine Chorales For The Organ, vi.

Several pedal exercises for playing heel and toe on white keys with each foot in a scalewise or ornamented by upper and lower neighbor notes are presented in this lesson.

Since the soprano and alto voices of hymn tunes are frequently written in thirds, several exercises are included for acquiring the technique of playing chromatic minor thirds.

A four-voice chorale by C. P. E. Bach is written out for the manuals incorporating various techniques including substitution, glissando, and playing an occasional tenor note with the right hand or an alto note with the left hand to sustain a legato line.

"Manoah," the first four-part hymn tune to be played with pedals, is introduced in this lesson. The right hand plays the soprano and alto voices (basically), the tenor voice is played by the left hand, and the bass voice is played by the feet. The printed notes merely indicate the sounds and the player is left to produce them in the best manner possible. It is sometimes necessary to allot the alto note to the left hand in order to produce a legato line. Playing this hymn in four parts will prove to be a great motivation factor for the student, as he is already equipped with the proper techniques involved.

Many organists fall into the habit of playing the bass note an octave lower than it is written, but Custard advises:

> One of the best mediums for acquiring a sound pedal technique is by playing a hymn tune in four-part harmony with the pedal-board assigned to its proper pitch and not, as is so often the case, with the left foot jumping about in a staccato manner over the bottom octave of the pedal-board.18

All of the pedal parts in this method are played in the same octave as written in the bass voice.

Lesson Five introduces exercises to further facilitate the student in the art of substitution that incorporate the major-minor sevenths and half-diminished sevenths in broken chords, using two fingers. The act of substituting fingers with both hands from white to black or black to white keys demands concentration and skill.

Further practice in substitution involves playing the chromatic scale with two fingers and both hands together. Many times it is necessary for one finger to move a half-step and substitute another finger while playing a hymn tune, thus the object of this exercise is to demonstrate that technique.

Perfect fourths, diminished fifths and augmented sixths are intervals often used in hymn playing. Exercises for practicing legato substitution while playing these intervals comprise a segment of this lesson.

Further study of passing one finger over and under another finger is accomplished by playing the major

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[18]Reginald Goss Custard, Systematic Organ Pedal Technique and General Interpretation, p. 33.

and minor scales on the manuals. This form of finger extension is a valuable technique for the student.

Custard concludes, "Some organists appear to make organ playing hard labour, the body swaying from side to side and their pedal action appearing as if a treadmill were being operated."[19] There is really no necessity for these contortions of the body, as the action of the modern organ has made everything easy and comfortable for the player. Because hymn tunes require the feet to cross while playing a legato bass line, pedal exercises for crossing the feet are introduced. ⊼ is the standard organ pedal sign that indicates the crossing over of one toe in front of the other foot with the toe placed forward on the pedal-board. ⊽ indicates the crossing over of one heel in front of the other foot with heel placed forward on the pedal-board. ⍋ indicates the crossing over of one toe behind the other foot with the toe drawn back on the pedal-board. ⍊ indicates the crossing over of one heel behind the other with the heel drawn back on the pedal-board.

The bass voice of "Love Divine" and "Dix" are written out to demonstrate the techniques of repeated notes, heel and toe with one foot, and the crossing of feet.

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[19]Reginald Goss Custard, Systematic Organ Pedal Technique and General Interpretation, p. 22.

"Il n'est rien de plus Tendre" by J. F. Dandrieu, written for two manuals and pedal, is a rewarding composition for the student.[20] The pedal part consists of two notes, tonic and dominant, while the left hand engages in an eighth-note accompanimental figure against a simple ornamented melody in the right hand.

Lesson Six employs manual exercises for double substitution of chromatic major and minor sixths, another valuable aid in hymn playing.

The soprano, alto, and tenor voices of "Duke Street" are written out for manual practice, and because the tune is composed of several consecutive sixths in the alto and soprano voices, it is best to engage the left hand for an occasional alto note. Being able to play the alto voice in this flexible manner requires strict concentration. The student will profit from copying the necessary notation for playing this hymn tune into his own hymnal, as it takes years of experience to automatically play the alto voice in a flexible mode.

The interval of a third, played with alternating toes, is frequently found in the bass voice of a hymn tune, thus exercises are included for developing this technique. It is necessary for the student to keep the knees together and the ankles touching while playing this

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[20]Jean-Francois Dandrieu, "Il n'est rien de plus Tendre," Noels, p. 19.

interval so that there will be no uncertainty as to the distance between the notes.

Custard explains that "Changing feet on the same note requires neatness of action."[21] Care should be taken to see that the key is not released during the change. If the note is a repeated note, as in the examples of "Nicaea" and "CWM Rhondda," the release of the toe must be prompt.

Another type of pedal substitution which becomes an automatic reflex with practice consists of exchanging the heel for the toe or toe for the heel on the same note. Exercises for practicing this technique are included and this type of substitution is used in "CWM Rhondda."

A "Verset" by A. P. F. Boely, written for two manuals and pedal using alternating scale and chordal passages on the manuals, is the concluding composition in this lesson.[22] The pedal part is relatively simple, but the student must use the proper techniques for playing various intervals with alternating feet.

Lesson Seven begins with a noel, "O Nuit Heureuse Nuit" by J. F. Dandrieu, written for two manuals alone.[23]

Austin Lovelace states that "Many problem pedalings

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[21]Reginald Goss Custard, Systematic Organ Pedal Technique and General Interpretation, p. 20.

[22]A. P. F. Boely, "Verset," The Liturgical Service, Volume I. (New York: Edwin F. Kalmus Publisher of Music, (n.d.)), p. 79.

[23]Jean-Francois Dandrieu, "O Nuit Heureuse Nuit," Noels, p. 14.

are solved by lifting the foot completely at the end of a phrase--where the music breathes and a lift is possible--and starting the next phrase with the same foot."[24] Every hymn has its own idiosyncrasies which make it vitally important that the pedaling for each be studied and marked.

The pedal part for "Seymour" is introduced, followed by the four-voice hymn tune. Since the upper three voices were presented in Lesson Four, the student should have fewer complications in playing the hymn tune correctly in all four parts.

The interval of a fourth occurs often in the bass voice of hymn tunes, sometimes progressing from tonic to sub-dominant or dominant up to tonic. Since this interval is frequently played by alternating toes, exercises are written for alternating toes playing fourths in various keys so the student may develop this technique.

Another useful pedal technique incorporated in playing hymn tunes is the glissando from a black key to a white key and glissando from a black key to a black key. The heel should be kept low while sliding the toe quietly from the front of the black key to the adjacent white key. The glissando from black key to black key is similar to the thumb glissando since it is necessary to slide the toe forward on the black key until the tip is

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[24]Austin C. Lovelace, The Organist And Hymn Playing, (Nashville: Abingdon Press, 1962), p. 13.

over the next black key. Slides from one black note to another occur frequently in hymn tunes in the keys of E flat and D flat major. The bass voice of three hymns, all in the key of E flat major, "Sicilian Mariner," "Vesper Hymn," and "Duke Street," demonstrate the pedal techniques learned thus far.

A delightful three-voice noel, "Vous qui desirez sans fin" by J. E. Dandrieu, for manuals and pedal, is the concluding composition in this lesson.[25] The first section is played on the manuals while the second section contains a tonic pedal point sustained in the pedal part.

A fugal type verset, consisting of several scalewise passages, by A. P. F. Boely begins Lesson Eight. Majestic sounding and in the key of c minor, it is basically a two-voice composition with a simple pedal part in the last ten measures and scattered chords in the manual parts.

The interval of a fifth commonly found in the pedal part of hymn tunes and usually played with alternating toes might include a progression from tonic to dominant or sub-dominant up to tonic. A few pedal exercises comprised of alternating toes playing fifths, and

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[25] J. E. Dandrieu, "Vous qui desirez sans fin," Noels, p. 36.

hymn tunes which incorporate this pedal technique are introduced as practical application. The hymn tunes include: "Spanish Hymn," "Old 100th," "St. Peter," "Marion," and "Hursley." Lovelace admonishes the student "not to let either foot wander, dangle aimlessly, or hang on the bench crosspiece while it is not in use. Keep the foot over the note it has just played until it moves with purpose to the next note to be played."[26]

"Hursley," the concluding hymn tune in this lesson, is written for soprano, tenor, and bass voices. Playing this hymn gives the student a sense of accomplishment as he is playing a hymn tune with both hands and feet.

Since the student has already studied the pedal part of "Marion," the soprano, tenor and bass voices are combined and introduced in Lesson Nine.

One-octave major scales in various keys are incorporated as pedal exercises and these involve several pedal techniques which will assist the student in acquiring accuracy on the pedal-board.

The bass voice of the following hymn tunes: "Coronation," "St. Catherine," and "St. Agnes," are used as pedal exercises which incorporate numerous techniques. Again the student is admonished to write these pedal notations into his own hymnal as an aid to pedal accuracy.

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[26]Austin C. Lovelace, The Organist and Hymn and Hymn Playing, p. 14.

Lovelace reiterates that "since the only way to create accent and rhythmic stress at the organ is through the contrast of silence and sound, observance of rests and meticulous release of notes are of prime importance to clear, rhythmic playing."[27]

An intriguing modal composition for two manuals and pedal, "Noel Vosqien" by Jean Bouvard, concludes this lesson.[28] The mixolydian scale is stated in the first two measures and then reiterated several times in the opening section. The sectional character of this French noel affords the student opportunity to use various registrations as color effects.

Lesson Ten presents two four-part hymn tunes: "St. Agnes" and "St. Catherine." The pedal parts were learned in the previous lesson, thus facilitating the student to concentrate on the other voices of the hymn tune.

The technique for playing legato scale passages over all sections of the pedal keyboard is accomplished by incorporating the major scales in two octaves. As previously stated, church organists often acquire the

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[27]Austin C. Lovelace, The Organist and Hymn Playing, p. 20.

[28]Jean Bouvard, "Noel Vosqien," Christmas Music By Various French Composers (New York: Edwin F Kalmus Publisher of Music, [n.d.]), p. 9.

habit of playing all pedal parts in the hymn tunes an octave lower than written. The ability to play legato scale passages in all ranges of the pedal keyboard will facilitate playing the pedal part of hymn tunes as written. In reference to correct position at the organ Gleason states: "Turn the legs to reach high and low notes, but keep the body facing forward as much as possible."[29]

Students are not adept in playing the left hand and pedal part of hymn tunes together. Articulating a repeated note in the left hand and not in the pedal part, or vice versa, is a difficult problem to master. The tenor and bass voices of "Easter Hymn" contain several techniques difficult to perform and therefore demand serious concentration on the part of the student to achieve the desired result.

"Mais on san es allé Nau," a noel for manuals by Dandrieu, concludes this lesson.[30] The opening section consists of two-part counterpoint and then the melody is harmonized with chords in the second section.

Lesson Eleven includes a four-part "Andante" for manuals alone. The fingerings will help the student

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[29]Harold Gleason, Method of Organ Playing, Fifth Edition, (New York: Appleton-Century-Crofts, Inc., 1968), p. 83.

[30]Jean-Francois Dandrieu, "Mais on san es allé Nau," Noels, p. 15.

play in a legato manner while using the techniques of finger extension and contraction.

The hymn tune "Coronation" is now presented in four parts, the student having learned the pedal part in Lesson Nine. The pedal part to the "Austrian Hymn," which necessitates substitution of the opposite foot in several places, is introduced, and then the four-part hymn is written out.

Lesson Twelve contains arpeggiated pedal exercises that are difficult to play because they utilize the techniques of playing successive thirds with one foot, and crossing the feet. Ordinarily in crossing the feet the left foot stays back and the right foot stays forward. The pedal parts to "Hyfrydol" and "Lyons" are written out, as they require arpeggio pedaling. After mastering the pedal part "Lyons" is then played in four voices.

The pedal part to the "Italian Hymn," another hymn tune requiring arpeggio pedaling, is introduced and then the four-part hymn is written out.

The final composition in six-eight meter for two manuals and pedal, "A Rare Song in Praise of Christmas" by W. T. Best, incorporates most of the techniques introduced in the method, including the manual techniques of playing successive thirds and sixths, substitution, and trills.[31]

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[31] W. T. Best, "A Rare Song In Praise of Christmas," A Christmas Fantasy On Old English Carols. (New York: Edwin F. Kalmus Publisher of Music, [n.d.]), p. 16.

CHAPTER III

EVALUATION OF TEACHING MATERIALS

An educational or learning experience has been described as an interaction between the learner and the learning material which results in some changes in the learner. The intent of the evaluation of the materials developed in this study is to measure the amount of change in the learner. The author would hypothesize that a beginner can learn the necessary basic organ techniques essential for hymn playing and other service music through this structured program of learning more effectively than through another course of study.

In order to evaluate the organ method developed in this study, several techniques were employed. Each teacher and student who used the method (the experimental group) evaluated the materials for their interest and effectiveness. In addition, a simple posttest-only, control group experiment was conducted. The experimental method was taught by one group of teachers to sixteen beginning organ students. Simultaneously, another group of teachers used materials of their own selection to teach a control group of seventeen beginning organists.

Each of the thirty-three students in the two groups was recorded at the conclusion of the experimental period and the results were compared.

The organ method, Appendix A,[1] was begun during the spring of 1970 and completed in July, 1971. During this time, preliminary discussions with organ teachers from several states concerning their willingness to participate in the project for teaching beginning organ students took place.

The project was originally designed to include ten teachers in the experimental group with two students each and ten teachers in the control group with two students each. Prospective teachers were contacted during the summer of 1971 and asked if they would participate in the project of teaching a beginning organ student in the fall. It was necessary for the students to have a good piano background and to be a beginning level organ student.

Two of the teachers were contacted and enlisted to participate in the project at the American Guild of Organists Regional Convention in Oklahoma City, June, 1971.

Several teachers were contacted during a trip to Kansas City, Missouri, in August, 1971. Other teachers were contacted by telephone or mail; some of these persons were never met personally by the author. In the early fall

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[1]See Appendix A.

of 1971, several of the teachers who had agreed to teach did not have students with the proper qualifications, and it was necessary to enlist other teachers. This was accomplished by September, 1971.

A twelve-week period, with one thirty-minute lesson per week, was the time spent on the experimental materials by those students in the experimental group; control group students spent an equivalent amount of time on their materials, which were selected by the individual teachers. The students began their lessons at various times since some were taught in private studios and others on several college campuses with varying fall term enrollment dates. At the conclusion of the twelve-week period each student made a tape recording consisting of: 1) a prepared solo, and 2) a hymn.

Teachers were randomly assigned to experimental and control situations, experimental teachers being those who employed the method developed by this researcher. These teachers were requested not to use any other materials during the first twelve weeks of instruction with the beginning students. Each experimental group teacher was sent two copies of the organ method, two magnetic recording tapes, two student evaluation instruments, and one teacher evaluation instrument.

Teachers who agreed to participate in the project and who were assigned to the control group were asked

to use materials of their own choice, but to follow all other basic procedures, such as one half-hour lesson per week, as the experimental group. Each control group teacher was sent two magnetic recording tapes on which to record his students' performances at the conclusion of the twelve-week period.

At the conclusion of the twelve-week period there were ten organ teachers in the experimental group and nine teachers in the control group. A tenth teacher designated in the control group decided not to return the tapes.* Tapes were received from sixteen students in the experimental group and seventeen students in the control group. Some of the teachers did not have two beginning level organ students with a good piano background starting lessons in September; they therefore returned only one tape.

The thirty-three performances were transferred to one master tape, which was later evaluated by ten adjudicators. As each individual tape was received, it was assigned a student number.

An order for the thirty-three performances on the master tape was determined by use of a table of random numbers.[2] The starting point on the table was predetermined

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*The teacher reported that her student's performance was such that she felt the tape recording might be embarrassing.

[2]Merle W. Tate, Statistics in Education and Psychology (Toronto, Ontario: Collier-MacMillan Canada, LTD., 1970), pp. 328-329.

to be the twenty-eighth row down and the thirteenth and fourteenth columns across. This process resulted in the following student number order for the thirty-three performances comprising the master tape:

31	7	21	10	1
28	8	19	13	15
18	26	11	30	33
9	25	5	29	32
4	27	14	2	20
23	6	22	3	
17	16	24	12	

The master tape was made in the recording studio of Oklahoma Baptist University on January 23, 1972, by the writer and Donald Riddle. The student number was announced before recording each individual tape in the randomly assigned order. A master sheet which listed the student number and random number was used as a guide for the recording.

Each of the thirty-three performances (comprising one hymn and one composition on the master tape) was evaluated by two panels of adjudicators in January, 1972. One panel of doctoral students in music and members of a research seminar at The University of Oklahoma comprised the following members: B. G. Evans, Jack E. Foote, Kenneth Harris, Robert McFarland, and Kenneth Peters.

The other panel of judges, graduate organ students at The University of Oklahoma, comprised the following members: Carolyn Benston, Jon Randall Booth, Karen Kuespert, Janice McKown, and Kristin Olson.

A "Performance Rating Sheet" was developed for the evaluation of each student's performance.[3] A graduated scale encompassing ratings from excellent (5) to poor (1) was utilized so that the panel members could quickly record their impressions. The entire scale encompassed "0.5" to "5.5"

Adjudicators were instructed to listen for five factors in each performance: 1) musical interpretation; 2) rhythmic accuracy; 3) note accuracy; 4) fluency of technique; 5) over-all effect. Each factor was to be rated separately using the following guide: 1--a poor performance; 2--a below-average performance; 3--an average performance; 4--a good performance; 5--an excellent performance.

The actual rating of each factor of the performance required the adjudicator to place a mark along a five-inch line, below which appeared the rating numbers. At the conclusion of the adjudication, the investigator took each rating sheet and transposed the assigned grades into a score for each factor, and then one composite score comprising all five factors.

The Kendall Coefficient of Concordance ($\underline{W}$) statistical procedure was used to measure the consistency and degree of agreement of the adjudicators' ratings. The

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[3]See Appendix B.

agreement among several adjudicators is found by taking the scores assigned by each adjudicator to each of the thirty-three performances and placing them in rank order.[4] The results of this procedure indicated a relatively high degree of agreement among the adjudicators regarding the level of each performance. The jury of organists rated the performances consistently higher than did the research jury, but similar criteria were apparently used by all auditors. The procedure produced a value for W of .601. Siegel states: "A high or significant value of W may be interpreted as meaning that the observers or judges are applying essentially the same standard in ranking the N objects under study." [5] If similar criteria were employed by each of ten highly qualified persons, it seems reasonable to accept the mean or average rating of the ten as being highly reliable. Also, since the judges had no way of knowing which were experimental and control group performances, as these had been randomly assigned to the master tape, the investigator feels that any possible bias toward either group was impossible.

The Pearson product-moment correlation procedure was also used to further check the reliability of the two

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[4]See Appendix B.

[5]Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Co. Inc., 1956), p. 237.

rating teams as shown in Table 3. Correlation, expressed by r, indicated a coefficient of reliability, or the relationship between two sets of data or two variables.[6] Relationship shown by correlation may vary from a positive one of + 1.00 to the negative - 1.00 and the more two scores agree, the more positive the correlation.

Research and organ jury mean ratings were 2.86 and 3.24 respectively and the correlation coefficient was $r = .825$. By application of a t test for significance of a correlation coefficient, $t = 8.13$, $P < .001$. Since the r between the two rating teams is so highly significant, it is possible to interpret any difference between the experimental and the control groups' performance as due to the method of teaching and not a function of the rating teams.

The researcher was interested in receiving an evaluation by the experimental teachers of the organ study; therefore, an instrument for teacher evaluation was developed. This instrument provided four possible responses to each question. One of the fundamental reasons for using a method book is to teach the student techniques and the writer was concerned whether or not the instructional materials in the organ method included the necessary beginning techniques for the student.

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[6] See Appendix B.

The teacher's opinion was asked regarding the pace (gradual development) of the basic fundamentals in the method. Securing proper and interesting repertoire was a major concern in developing the materials, and each teacher was questioned as to whether or not he thought the repertoire was interesting and advantageous for the student. (The writer realized that intriguing compositions can be a great motivation for student practice, thus a large selection of materials which could be considered public domain were studied and selections were made from this literature).

Another area of importance in the evaluation of an instructional method is the degree of its flexibility for the individual student. Since all students will not advance at the same pace, the teacher is required to adjust the materials appropriately.

The final question inquired whether the basic purpose of the instructional method was accomplished, that is, did it teach the student to play simple hymns? The compiled evaluations of the ten experimental teachers from four states may be observed in Appendix B.[7]

Another evaluative instrument, to be completed by the experimental students, was developed in order to obtain information about the student and his reaction

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[7]See Appendix B.

to the instructional method. The writer was interested in knowing whether the student was now playing for church services and how the student intended to use his organ study in the future. In order to obtain the student's evaluation of the materials a third question asked whether he would recommend the course of study to a friend. Additional information of this type resulted from his underlining words that best described the lessons. The evaluations received by the sixteen experimental group students are recorded in Appendix B.[8]

[8]See Appendix B.

CHAPTER IV

PRESENTATION AND INTERPRETATION OF DATA

Data compiled from the experimental group evaluation instruments are shown in Appendix B.[1] At the conclusion of the twelve weekly lessons each of the sixteen students, having studied the experimental method, answered four questions concerning the study.

As exhibited in the histogram, Figure 2, to the first question, "Are you now playing the organ for church services?," 75% responded "no" and 25% "occasionally." (Even though these students are beginning organists, some of whom are not capable of playing for a church service, they are occasionally forced to play because no one else is available.)

Figure 3 indicates that more than one reply was given for the four possible answers to question two, "How do you plan to apply your organ study?" Twenty-five per cent of the students, a rather high percentage, expressed the desire to become professional organists or teachers while 62.5% would like to be part-time church organists.

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[1] See Appendix B.

STUDENT EVALUATION

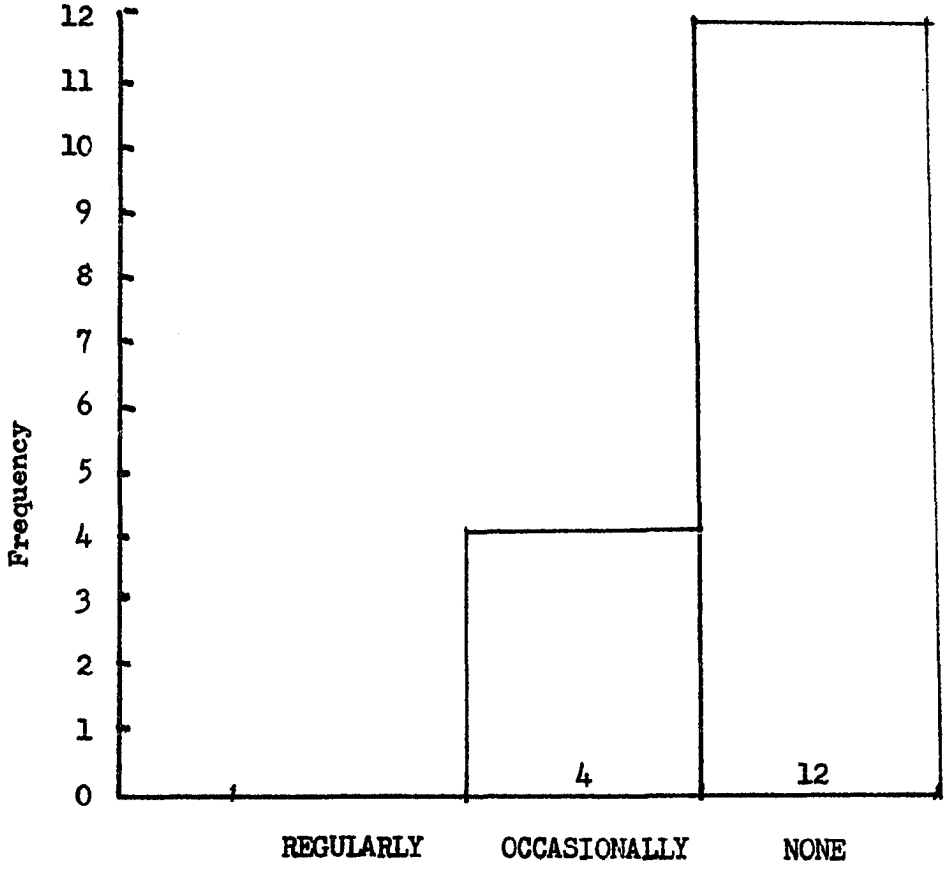

FIGURE 2. PLAY FOR CHURCH

STUDENT EVALUATION

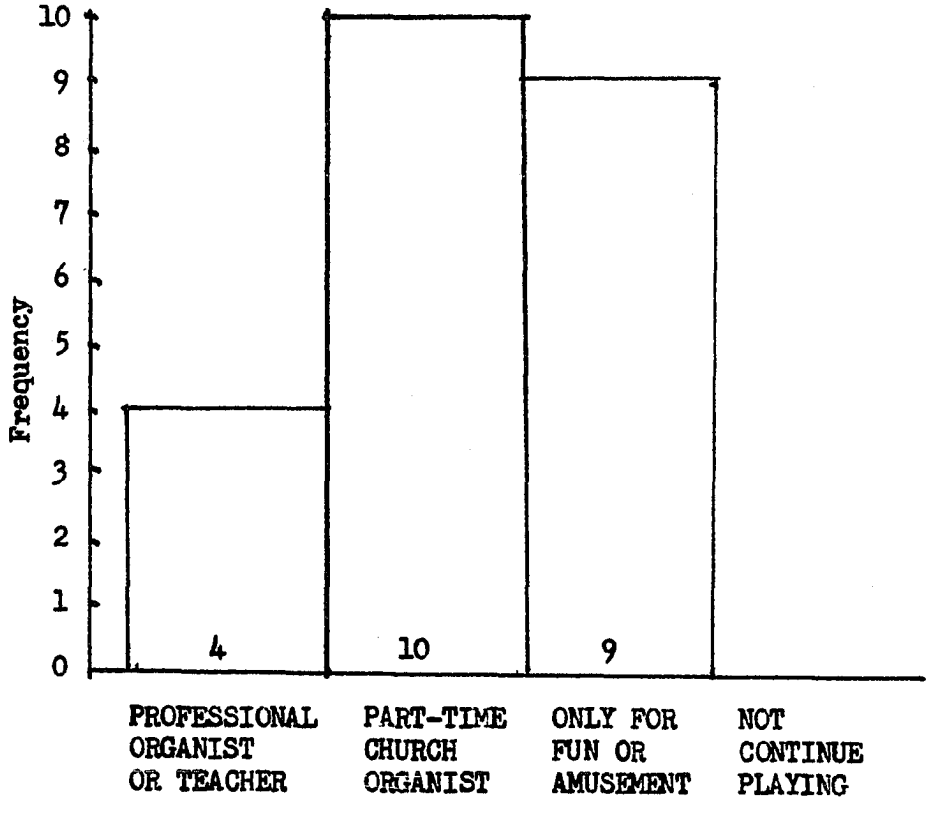

FIGURE 3. PLAN TO APPLY ORGAN STUDY

None stated they would discontinue playing the organ and 56.3% indicated they would like to play for fun or amusement.

Fifteen out of the sixteen students, 93.8%, answered "yes" to question three, Figure 4, "Would you recommend this course of study to a friend?" This response was highly encouraging to the author. It might be pointed out that the teacher of the one student who answered "no" to this question also rated the method lower than the other teachers.

Ten responses were possible for question four, Figure 5, which asked the student to underline the words that best described the lessons. Seventy-five per cent of the students found the materials "challenging" and "interesting" while 43.8% thought the study "enjoyable." None indicated the method to be "easy," but 6.2% checked "fun" and "intriguing."

Negative reactions included the 18.6% response for "inconsistent," but no student felt the materials "ridiculous" or "absurd." Two students, 12.5%, reported the materials "boring," but one of these qualified his answer by saying: "starting with the fourth lesson the material was intriguing." The other was the same student who responded that he would not recommend the course of study to a friend.

The ten teachers in the experimental group answered five questions concerning their evaluation of the organ

STUDENT EVALUATION

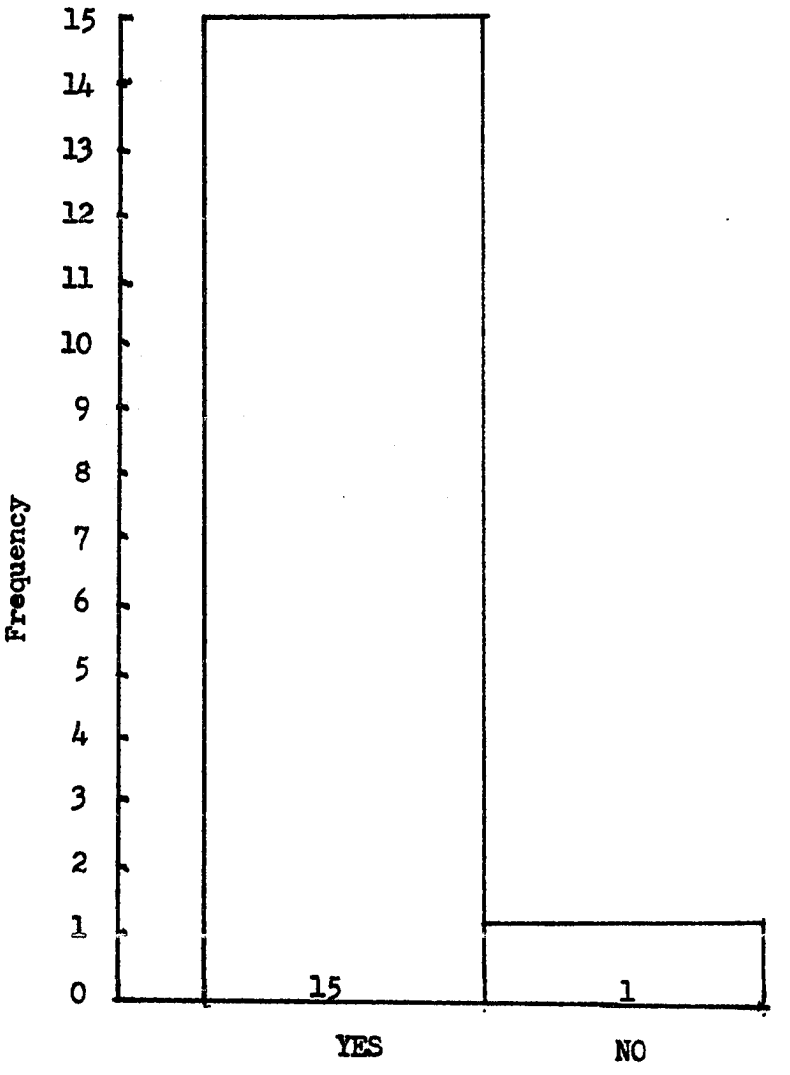

FIGURE 4. RECOMMEND COURSE OF STUDY

STUDENT EVALUATION

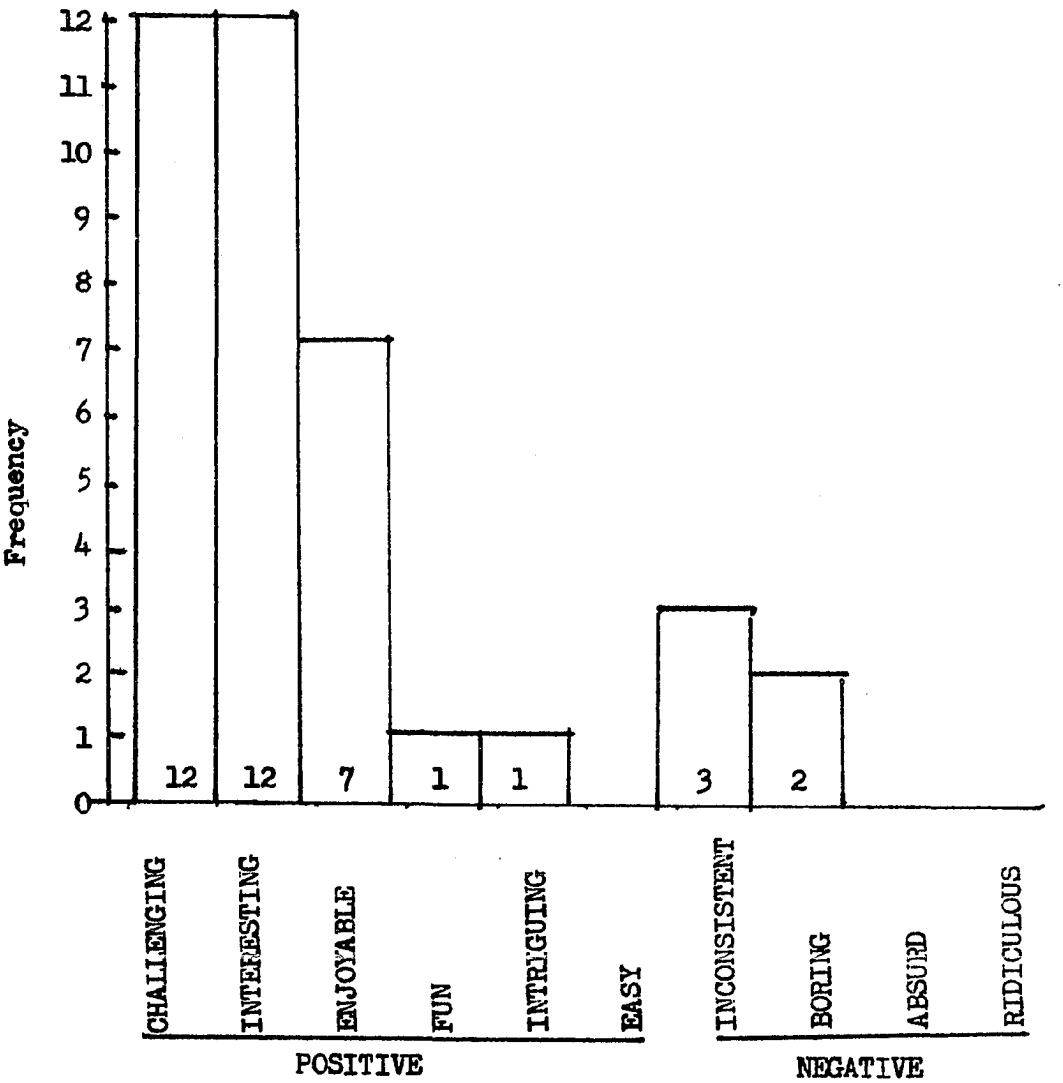

FIGURE 5. WORDS DESCRIBING THE METHOD

study. Four possible answers were provided for question one, "Instructional material includes the necessary beginning techniques?" Seven teachers (70%) responded with "yes," the other three (30%) replied "most," and none checked "some" or "no."

The response to the second question, "Provides for gradual development of the basic fundamentals?" consisted of: 80% "yes," 20% "usually," and none reporting "sometime," or "no." These results may be interpreted as meaning that a majority of the teachers agreed that the study followed a consistent structural design for developing basic organ techniques.

A third question "Repertoire interesting and advantageous for the student?" resulted in 40% "yes," 50% "usually," 10% "sometimes" and no "no" responses. The reader will note that the answer to this question concerning repertoire is less positive than for previous answers. The experimental teachers, each of whom was also a church organist, represent various denominations and this factor might tend to reflect the difference in literature used from one denomination to another. This study was designed as a teaching device and not to reflect any church denominational taste in music. The identification of interesting repertoire was a problem for the researcher, since the literature was chosen entirely from public domain material.

One teacher wrote in answering question three

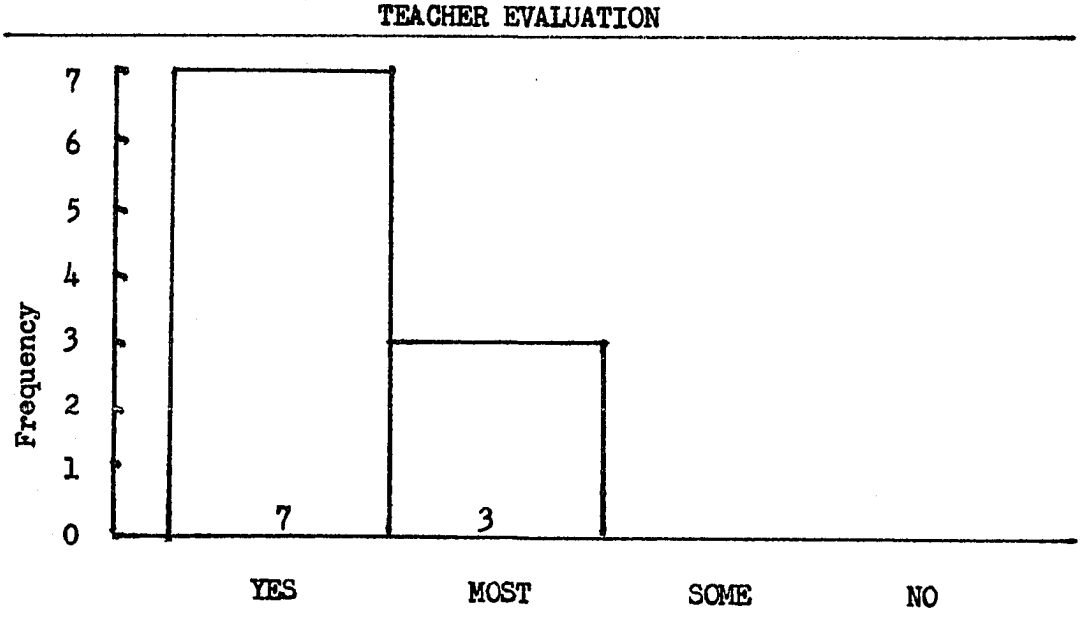

FIGURE 6. INSTRUCTIONAL MATERIAL INCLUDES THE NECESSARY BEGINNING TECHNIQUES

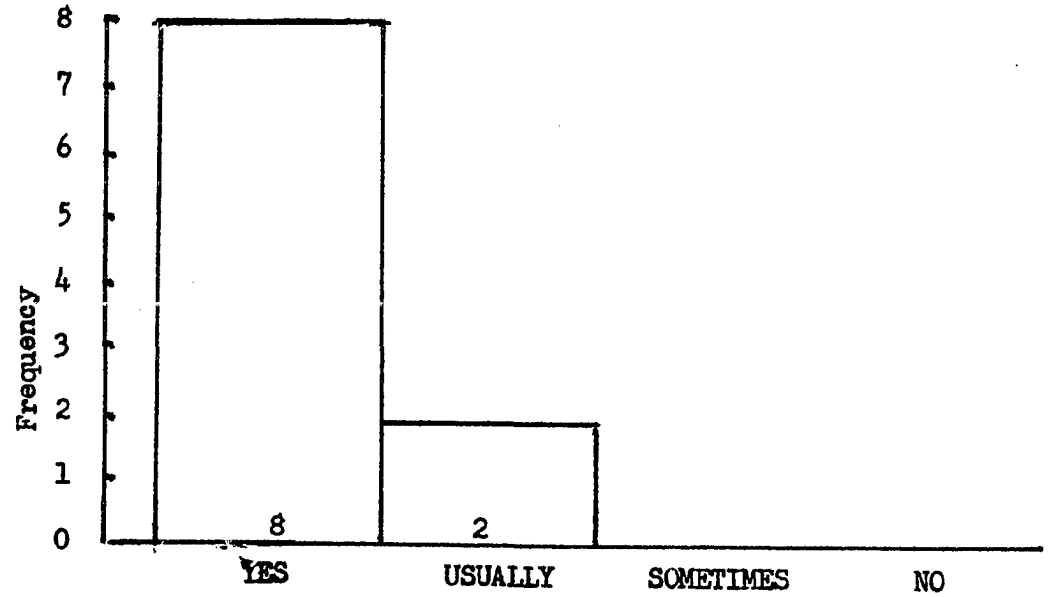

FIGURE 7. PROVIDES FOR GRADUAL DEVELOPMENT OF THE BASIC FUNDAMENTALS

concerning the repertoire: "The Noels and other pieces in the repertoire were very good, teaching manual technique in an interesting manner." The same teacher also stated:

> I have never had pupils before who could play two or three hymns acceptably after three months' instruction. It seemed that each lesson covered too much material for a week's practice, and we were not able to cover all of the teaching pieces suggested in the Dupré, but in view of the fact that they were able to play the hymns in this period the amount of material covered was evidently not too much.

It was a general consensus among the teachers that the method contained too much material for twelve lessons. This was, however, intentional on the part of the writer, since it seemed important to provide ample material for the strongest student. The writer's rationale was that some students are encouraged and motivated to practice more diligently if they have more material to learn.

Question four, illustrated in Figure 9, "Can be adjusted to the individual student?" received: 60% "yes," 30% "usually," and 10% "sometimes," and zero "no." Thus a majority of the teachers agreed that the materials could be adjusted for the individual student. Because some techniques might be less difficult for some students than others, the study included a sufficient amount of material to challenge the student within each lesson.

The final question, which dealt with the primary

TEACHER EVALUATION

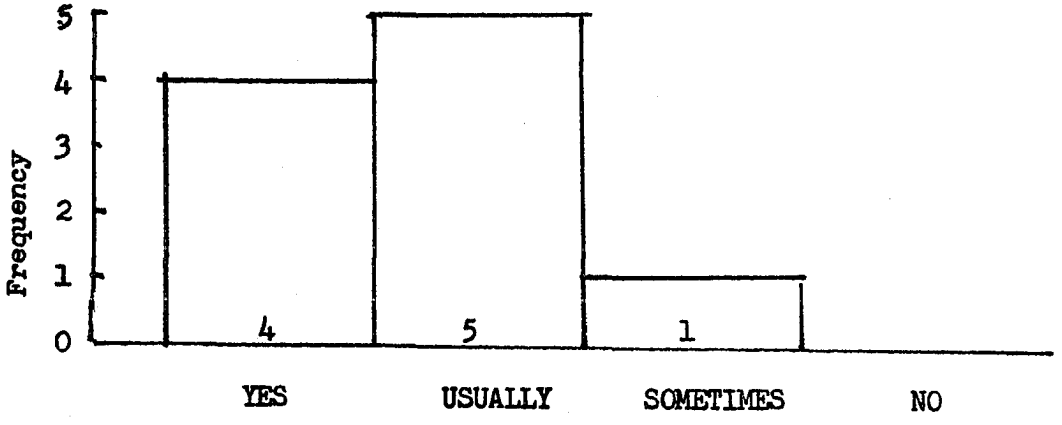

FIGURE 8. REPERTOIRE INTERESTING AND ADVANTAGEOUS FOR THE STUDENT

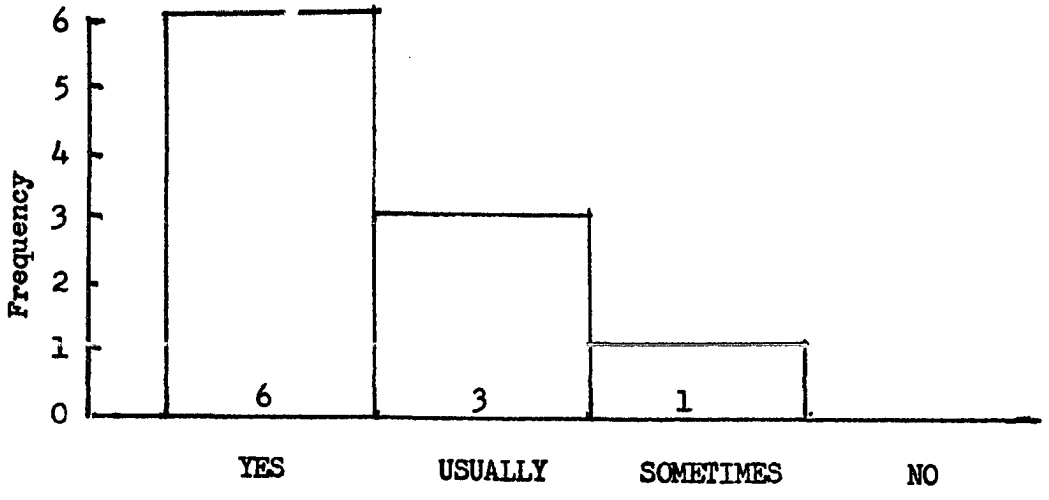

FIGURE 9. CAN BE ADJUSTED TO INDIVIDUAL STUDENT

TEACHER EVALUATION

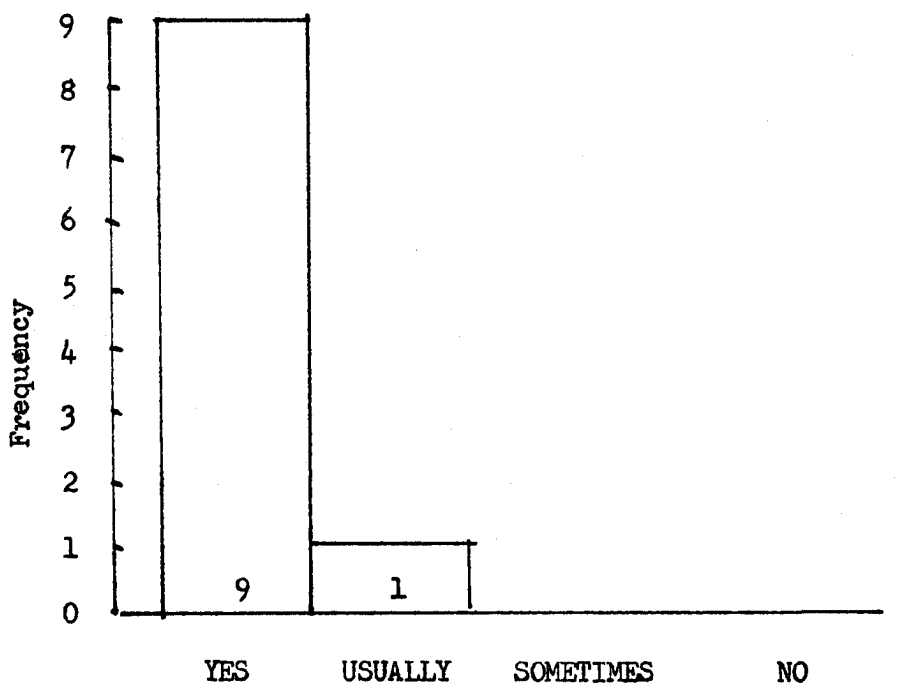

FIGURE 10. PREPARES STUDENT FOR PLAYING SIMPLE HYMNS

purpose of the organ method asked: "Prepares the student for playing simple hymns?" The answers included: 90% "yes," 10% "usually," and none checked "sometimes" or "no." A summation of the effectiveness of this study is substantiated by the great margin of approval accorded this question, which related to the principle intent of the author. In the opinion of the teachers who used it, this method of instruction does prepare the student to play simple hymns.

Control-group Experiment

The statistical analysis of data collected from the organ method experiment is concerned with the determination of whether differences are due to the effects of the experimental treatment or may be accounted for by chance alone. To determine the effectiveness of the organ method a simple posttest-only, control group design was employed. Students were randomly assigned, by teacher, to experimental and control groups.

As mentioned in Chapter III, five scores for each student organ performance were assigned by each of ten adjudicators for: 1) musical interpretation, 2) rhythmic accuracy, 3) note accuracy, 4) fluency of technique, 5) over-all effect. These five scores were then averaged to determine the composite score. Composite score data from these adjudicators are presented in Table 2.

The composite score for each performer, as well

TABLE 2

COMPARISON OF EVALUATIONS
RESEARCH AND ORGAN JURIES

RANDOM NUMBER	PUPIL NUMBER	RESEARCH JURY	ORGAN JURY	AVERAGED RATING	
1	29	2.82	3.12	2.97	
2	26	3.03	3.92	3.48	X
3	27	3.35	4.18	3.77	X
4	05	2.78	3.99	3.39	
5	18	2.8	2.76	2.78	
6	13	2.9	3.23	3.07	
7	08	1.59	2.09	1.84	
8	09	2.25	2.50	2.38	X
9	04	2.31	2.73	2.52	
10	22	3.47	3.93	3.70	X
11	17	1.15	2.01	1.58	
12	28	4.49	4.77	4.63	X
13	23	2.72	3.54	3.13	X
14	19	3.27	3.70	3.49	X
15	30	3.43	4.37	3.90	X
16	14	3.39	3.98	3.69	
17	07	2.95	3.23	3.09	X
18	03	2.59	3.0	2.79	
19	16	3.19	3.75	3.47	
20	33	.82	1.30	1.06	
21	15	3.25	3.47	3.36	X
22	20	3.02	3.33	3.18	
23	06	2.59	2.46	2.53	

X = EXPERIMENTAL GROUP STUDENT

TABLE 2 - Continued

COMPARISON OF EVALUATIONS
RESEARCH AND ORGAN JURIES

RANDOM NUMBER	PUPIL NUMBER	RESEARCH JURY	ORGAN JURY	AVERAGE RATING	
24	21	3.65	3.92	3.79	
25	11	3.45	3.26	3.36	X
26	10	2.47	2.62	2.55	
27	12	3.10	2.53	2.82	X
28	02	2.43	3.66	3.04	X
29	25	3.74	3.7	3.72	X
30	24	1.87	2.52	2.20	
31	01	2.53	2.67	2.60	
32	32	2.63	2.23	2.43	X
33	31	4.29	4.28	4.29	X

X - EXPERIMENTAL GROUP STUDENT

as scores assigned by each of the ten members of the jury, may be found in Appendix B.[2] The highest possible score from each adjudicator for each factor was "5.5," and the poorest possible score was "0.5." Table 2 presents a comparison of evaluation between the research and organ juries. As stated in Chapter III, the organists rated the performances consistently higher than did the doctoral student jury, but similar criteria were used by both sets of judges.

In the analysis of these data the null hypothesis stated that no significant difference in performance would be observed between the experimental and control groups at the conclusion of the twelve weekly lessons. The .05 level of significance was considered adequate for rejection of the null hypothesis. A t-test for significance of difference between independent sample means was employed.

Shown in Table 3 are the mean scores and standard deviations of scores assigned by the organ jury, the research jury, and the two juries combined. Also shown is s' (the best estimate of the standard deviation for the total sample); the t value, and probability level.

The reader will note that the difference between the two groups is significant at the .05 level for the results from each jury separately and from the combined juries. Therefore, the null hypothesis that there is no

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[2]See Appendix B.

TABLE 3

Means, Standard Deviations, and Results of t-Test for Significance of Difference Between Independent Sample Means

RESEARCH AND ORGAN JURIES

	RESEARCH JURY		ORGAN JURY		RESEARCH AND ORGAN JURIES	
	EXPERIMENTAL GROUP	CONTROL GROUP	EXPERIMENTAL GROUP	CONTROL GROUP	EXPERIMENTAL GROUP	CONTROL GROUP
N	16	17	16	17	16	17
MEAN	3.24	2.50	3.58	2.91	3.41	2.71
S.D.	0.586	0.736	0.684	0.727	0.587	0.716
$M_X - M_C$	0.74		0.67		0.70	
S'	0.689		0.729		0.677	
t	3.09		2.64		2.97	
P	.01		.02		.01	

significant difference in performance between the two groups is rejected.

An alternative hypothesis may be accepted. The alternative hypothesis states that a significant difference does exist between the performance of the experimental group students, using the teaching method written by the author, and that of the control group, who learned from other teaching methods. Observation of the mean scores shows that the experimental group performed significantly better, according to the averaged ratings of ten competent auditors, than did those taught by other methods.

In an effort to evaluate the strengths and weaknesses of the organ method in more detail, the null hypotheses stating that there was no significant difference between the organ performance of the experimental and control group students in

a) musical interpretation
b) rhythmic accuracy
c) note accuracy
d) fluency of technique, and
e) over-all effect

was tested. Shown in Table 4 are the mean scores and standard deviations of the experimental and control groups for each performance factor, the difference in mean scores (M_X-M_C), the best estimate of the standard deviation for the total sample (s'), the $\underline{t}$ value, and probability level.

TABLE 4

Results of t-Test for Significance of Difference Between Experimental and Control Groups in Five Factors of Organ Performance

	EXPERIMENTAL GROUP N = 16		CONTROL GROUP N = 17					
	M	s	M	s	$M_X - M_C$	s'	t	P
MUSICAL INTERPRETATION	3.06	0.671	2.74	0.926	0.32	0.816	1.13	.40
RHYTHMIC ACCURACY	3.48	0.552	2.70	0.782	0.78	0.702	3.19	.01*
NOTE ACCURACY	3.69	0.538	2.95	0.734	0.74	0.667	3.19	.01*
FLUENCY OF TECHNIQUE	3.38	0.627	2.71	0.745	0.67	0.712	2.70	.02*
OVER-ALL EFFECT	3.38	0.609	2.67	0.725	0.71	0.692	2.94	.01*

* DIFFERENCE IS SIGNIFICANT AT .05 LEVEL

Statistical Treatment of Data

By examination of Table 4 the reader will note that the null hypothesis of no difference in organ performance must be accepted for the musical interpretation area. Although the mean score from the experimental group was higher in this area, the difference is not significant. However, for each of the other performance areas--rhythmic accuracy, note accuracy, fluency of technique, and over-all effect--the null hypotheses may be rejected. The higher mean score for the experimental group and the probability levels at the far right in Table 4 indicate that the experimental group students' performance was significantly better in each of these areas.

The researcher would point out that of the five separate factors of performance, musical interpretation is probably the area where one would least expect to find great differences between beginning level students. It seems important to point out, however, that the use of the organ method did result in superior performances as regards rhythmic accuracy, note accuracy, fluency of technique, and over-all effect.

In order to determine the relative effectiveness of the organ instructional method for different age levels of students, the sample was divided into high school

age pupils (N=12) and those of college age and adults (N=21). A two-way analysis of variance technique was employed, since this statistical tool would reveal the significance of any interaction between age level of the student and treatment. The graph (Figure 11) below shows the apparently insignificant interaction.

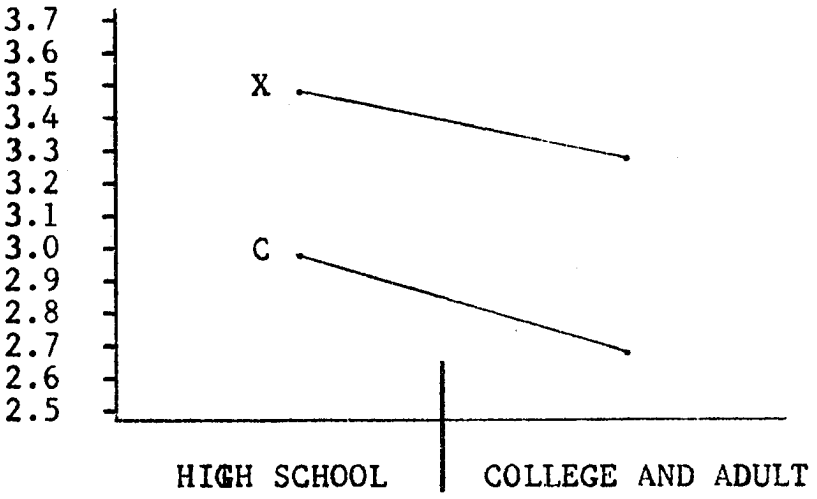

FIGURE 11. INTERACTION OF AGE LEVEL WITH TREATMENT.

The two-way analysis of variance (ANOVA) procedure actually tests for significance of mean score differences according to three factors: 1) age level, 2) treatment, 3) interaction of age level with treatment. Table 5 shows the N's and mean scores being tested.

The null hypotheses are:

1) No significant difference would be observed in organ performance between high school and adult students in the two groups. According to data in Table 5,

TABLE 5

ANALYSIS OF VARIANCE IN FACTORIAL DESIGN

AGE LEVEL VERSUS TREATMENT

	EXPERIMENTAL	CONTROL	
H.S.	N = 7 M = 3.52	N = 5 M = 2.99	M_{HS} = 3.30
COLLEGE AND ADULT	N = 9 M = 3.33	N = 12 M = 2.67	M_{CA} = 2.90
	M_X = 3.41	M_C = 2.71	M_t = 3.08

the high school student mean is 3.30 versus the adult student mean of 2.90.

2) Regardless of age level no significant difference would be observed in performance as a result of treatment. Shown in Table 5 is the experimental group mean of 3.41 versus the control group mean of 2.71.

3) The organ performance would not reflect an interaction between treatment and age level. (In other words, high school students in the experimental group would not score lower than college-adult students, while high school students in the control group were scoring higher than those of college-adult age, or vice versa.) Shown in Table 5 are mean scores: experimental high school students, 3.52; experimental college-adult students, 3.33; control group high school students, 2.99; and control group college-adult students, 2.67.

The F values at the bottom of Table 6 indicate that null hypotheses 1) and 3) must be accepted. There is indeed no significant difference in organ performance between the students of high school and college-adult age level, regardless of treatment, nor is there a significant interaction of the age level and treatment on organ performance scores.

The results of the analysis of variance test are consistent with the t test in measuring the significance of difference between the experimental and control group

TABLE 6

ANOVA FOR AGE LEVEL (ROW) VERSUS TREATMENT (COLUMN)

USING ORGAN PERFORMANCE SCORES AS THE DEPENDENT VARIABLE

SOURCE OF VARIANCE	SUM OF SQUARES	DEGREE OF FREEDOM	MEAN SQUARE
BETWEEN ROWS	0.9297	1	0.9297
BETWEEN COLUMNS	3.4458	1	3.4458
INTERACTION	- 0.4188	1	0.4188
WITHIN SETS	14.8321	29	0.5114
TOTAL	18.7888	32	

F FOR INTERACTION = MS FOR INTERACTION/MS FOR WITHIN SETS = 0.8189

F FOR AGE LEVEL = MS FOR BETWEEN ROWS/MS FOR INTERACTION = 2.2199

F FOR TREATMENT = MS FOR BETWEEN COLUMNS/MS FOR WITHIN SETS = 6.7329*

* MAIN EFFECT FOR TREATMENT SIGNIFICANT AT .05.

in organ performance. The experimental group mean score is significantly higher at the .05 level.

Summary

In summary, the answers received from the experimental student questionnaire resulted in fifteen of the sixteen students responding that they would recommend the instructional materials to a friend. A majority of the experimental teachers indicated on their questionnaire that the necessary beginning organ techniques were included in the method and that the instructional materials prepared the student for playing simple hymns.

To determine the effectiveness of the organ method a simple posttest-only, control group design was employed. The composite score for each performer of the five factors: 1) musical interpretation, 2) rhythmic accuracy, 3) note accuracy, 4) fluency of technique 5) overall effect, rated by the two juries resulted in the experimental group receiving higher ratings than the control group.

Application of the t test for the significance of difference between the experimental and control group performances resulted in significance at the .05 level, for the results from each jury separately and from the combined juries.

In testing for significance of difference between

the groups in each of the five factors of organ performance rated, the null hypothesis was accepted for the musical interpretation factor. Although the interpretation mean score for the experimental group was higher than for the control group the difference was not significant. The experimental group students' performance was significantly better than that of the control group students in each of the other four performance factors: rhythmic accuracy, note accuracy, fluency of technique and over-all effect.

A two-way analysis of variance, with organ performance ratings as the dependent variable and treatment and student age level the independent variables, was applied to the data. Results were consistent with those from the *t* test in showing a significant difference (at the .05 level) between groups for treatment. There was no significant difference, however, according to age level, nor was there a significant interaction between age level and treatment. In other words, the organ method contributed to superior performance regardless of age level of the students.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this project was to develop a technical course of study for the beginning organ student with a good piano background. A series of twelve lessons was designed to develop basic skills for hymn playing and other service music. Twenty-nine hymn tunes, with fingerings indicated, were utilized in teaching the proper techniques necessary for hymn-tune playing. Also included in this study were examples of organ repertoire commensurate with these basic skills.

It is necessary for the beginning organist to acquire a new concept of technique as opposed to those used by the pianist. The instructional materials included exercises for attack and release of a note, repeated notes, glissando, and substitution. Separate exercises, all written by the author, were included for the manual and pedal.

Nineteen teachers agreed to cooperate in teaching students in this project. Of the nineteen, ten teachers were randomly selected to teach the organ method developed in this study. This group of teachers with

their sixteen students were known as the experimental group. The other nine teachers taught according to organ methods of their own selection; their beginning organ students numbered seventeen. This group constituted the control group.

At the conclusion of the twelve lessons, a magnetic tape recording was received from each student of the thirty-three from both groups. Each student performed one hymn and one other composition of his or her teacher's choice. The thirty-three performances were randomly assigned to a master tape, which was evaluated by a panel of judges. In actuality there were two juries of auditors.

A "Performance Rating Sheet" was developed by the researcher for the evaluation of each student's performance. A graduated scale encompassing ratings from excellent (5) to poor (1) was utilized by the ten adjudicators. They were instructed to listen for five factors in each performance: 1) musical interpretation; 2) rhythmic accuracy; 3) note accuracy; 4) fluency of technique; 5) over-all effect. The investigator took each rating sheet and transposed the assigned grades to a score for each factor, and then one composite score comprising all five factors.

An instrument of evaluation was developed to obtain information from the student concerning the method. Fifteen out of sixteen experimental students stated that

they would recommend this course of study to a friend. Provided with both positive and negative descriptive words concerning the method, students answered in the affirmative with a majority response.

The researcher was interested in receiving an evaluation by the experimental teachers of the organ study; therefore, an instrument for teacher evaluation was developed providing several possible answers for each question. A majority of the experimental teachers responded that the method included the necessary beginning organ techniques and that it followed a consistent structural design for developing basic organ technique. The teachers further stated that the repertoire was interesting and advantageous for the student and that the materials could be adjusted for the individual student. A summation of the effectiveness of this study is substantiated by the great margin of approval by the teachers responding that this method of instruction does prepare the student to play simple hymns.

Statistical analysis of the data collected from the organ method experiment determined that:

a) Experimental group organ students, who used the method developed as a part of their study, performed significantly better at the end of twelve weeks of lessons than those students in the control group who had studied from a variety of other methods.

b) Age level had no significant effect on the organ performance of beginning students after twelve lessons, regardless of the method used.

c) There was no interaction of age level and organ method studied on organ performance after twelve weeks of lessons.

Based on the results of statistical treatment of the data, which show that the instructional materials are effective for high school through adult age levels, it is suggested that this organ method could be utilized as curricular material in some high schools, particularly where modular scheduling could allow for the addition of this type of study. It is further suggested that the study could be employed as an offering in the curriculum for adult education by secondary schools, and for freshmen college students who are beginning their organ study and who have the recommended piano background.

As a result of the experimental group teachers' favorable response that the basic purpose of the instructional materials, teaching the student to play hymns with the proper techniques, was accomplished, this method may be considered as an appropriate course of study for the beginning church organist.

BIBLIOGRAPHY

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APPENDIX A

THE DEVELOPMENT OF A BASIC FOUNDATION

IN CHURCH ORGAN TECHNIQUE

Pauline Peck Riddle

THE UNIVERSITY OF OKLAHOMA
SCHOOL OF MUSIC

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PREFACE

These twelve lessons are designed to develop a comprehensive beginning course of study for the beginning church organist. These lessons will be projected to develop basic skills for hymn playing and other service music. This study will also include examples of organ repertoire commensurate with those basic skills.

The pupil commencing the study of the organ should have previously acquired a sound and well-developed piano technique. This should include proficiency in all major and minor scales and arpeggios and competency with such literature as the Bach Two-Part Inventions and easier sonatas of Haydn, Mozart, and Beethoven.

Beginning organ study should establish a foundation that could prepare the student to become a professional organist if he should so desire.

Beginners are capable of learning new techniques which are basic to organ playing. Today there are a large number of churches that have organs with no one qualified to play them. In many situations high school students who play the piano are given the task of playing the organ. These organists need a practical course of study using the proper techniques and this course of study is designed for the beginning organ student who wants to learn the proper techniques, and have a basic foundation in church service playing.

Seventy-Nine Chorales for the organ by Marcel Dupré, H. W. Gray Co., should be used in conjunction with these lessons.

FUNDAMENTALS

Divisions of the Organ

The organ console may consist of one keyboard (manual) or as many as five or six keyboards. The average organ has two keyboards, or manuals, and a pedal keyboard. The standard organ manual has five octaves, or 61 notes, which is shorter than the piano keyboard. The pedal board has 32 notes, or two and one-half octaves, extending from C to g^1. The usual arrangement of the manuals from the upper to the lower is as follows:

Two - manual Organ
Swell
Great

Three - manual Organ
Swell
Great
Choir

Four - manual Organ
Solo
Swell
Great
Choir

STOPS

The range of the organ is much greater than that of the piano. Stops sounding as much as three octaves above and two octaves below the normal or piano pitch are possible. A stop of normal pitch is indicated by the symbol 8' (eight-foot).

For each 8' stop on the organ there is one set, or rank, of pipes. A rank consists of one pipe per note of the keyboard, or 61 pipes.

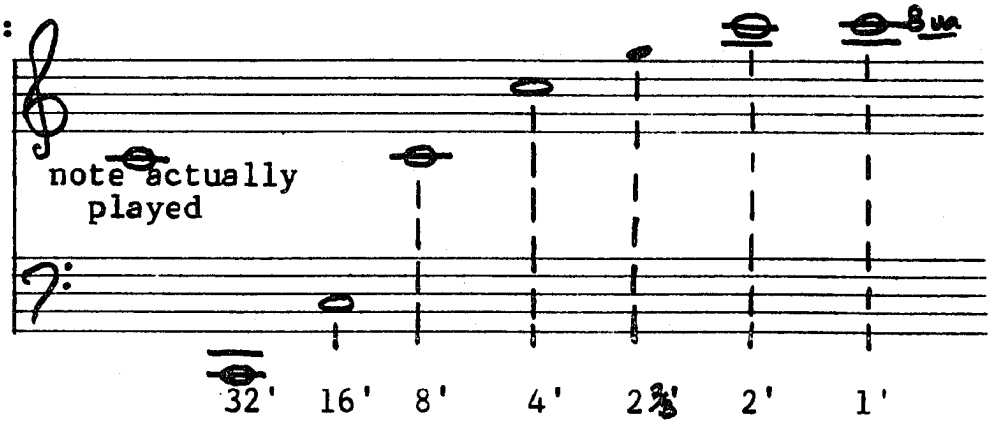
16' indicates that the stop will sound an octave below normal pitch, and a 32' stop will sound two octaves below normal pitch.

A 4' stop will sound one octave above, the 2' stop sounds two octaves above, and the 1' stop will sound three octaves above the 8' stop. Therefore, the organ extends over nine complete octaves.

The pitch of a mutation stop sounds another note

which is not the unison or octave above it. A mutation stop 2 2/3' will sound g' if the key of c is depressed. These mutation stops are designed to be used with a unison stop of greater force.

The chart below indicates the pitch of various registers:



There are mixture, or compound stops, which combine a selection of unison and mutation ranks. These are also used with a strong unison stop.

Couplers And Pistons

Each keyboard controls a separate division with five or six stops each, depending on the number of ranks in the organ. Each division is really an organ in itself, and each manual along with the pedal board controls a separate division of the instrument. Couplers make the various divisions available on other keyboards than their own.

The coupler marked Swell-to-Great makes the Swell Organ available on the manual for the Great Organ. This enables you, for instance, to use a stop on the Swell Organ along with stops on the Great Organ. Great-to-Pedal will sound a stop from the Great Organ on the pedal keyboard. In addition to these unison couplers, there are also sub-octave (16') and super-octave (4') couplers.

A registration is a group of stops you choose to use for a particular piece. On many organs you will find some buttons under the manuals which are called

pistons. There are also toe pistons which are placed above the pedal board. Pistons make it possible to change the combination of stops rapidly to another registration. It would take too long to change each individual stop for another entirely different registration, while playing the piece.

Expression Pedals

Above the pedal board you will find one or more expression pedals. They are usually marked to show which manual or division of the organ is under expression. By pushing the crescendo pedal, the organist can add or retire stops progressively which are under expression. The swell box, or expression chamber, is a large room built around one or more divisions of the organ. The front of the box has a series of shutters similar to a Venetian blind, and the player can open or close the shutters by means of a Swell pedal.

Pipes

The pipes of the organ are divided into two classes - Flue (labial) and Reed (lingual). In a flue pipe, the tone is produced by a vibrating column of air within the pipe similar to a tin whistle. The length of the pipe determines its pitch. The reed pipe has a vibrating curved tongue which rolls down the flattened surface of a brass tube called a shallot. The pipe itself acts as a resonator. The reed pipes are tuned in two ways since both the length of the tongue and the length of the pipe affect the pitch of the tone produced.

Tone Color

The tone color of the organ is divided into four main classes - Principal, Flute, String, and Reed. The first three classes are flue pipes, and the last is a reed pipe.

1. Principals, or Diapasons, are the foundation of organ tone. They do not imitate another instrument. Examples are 8' Geigen Principal, 4' Octave or Prestant, 2' Fifteenth or Super Octave, Mixture, and Tierce.

2. Flutes consist of several types:

a) Stopped Flutes are only half the length of open pipes of the same pitch, and the top of each pipe is closed by a stopper. Only the odd-numbered partials are present in the tone. Examples include Subbass, Bourdon, Pommers, Quintadena, Stopped Diapason.

b) Open Flutes may be wood or metal:
   1) Wood (Hohlflote, Melodia, Concert Flute, Clarabella)
   2) Metal (Nachthorn, Flute Ouverte, Sifflote)

c) Harmonic Flutes are double the normal length and are over-blown to speak their octave.

d) Hybrid Flutes are partially stopped or have tapered pipes or caps (Rohrflote, Koppelflote, Spitzflote, Erzahler)

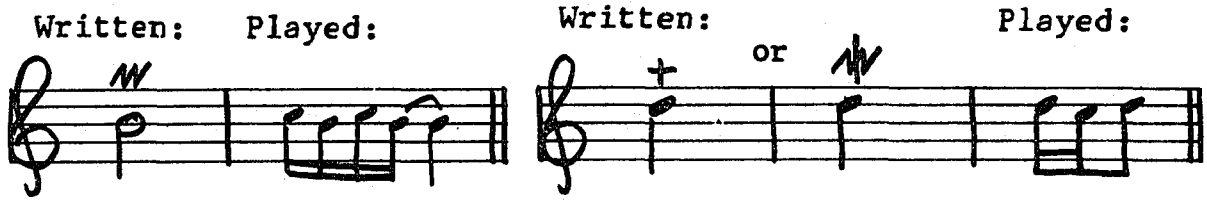
3. String pipes are called Violine, Gamba, Violoncello, Viole de Gambe, Viola, Salicional, Voix Celeste, Aeoline. A Celeste rank is tuned sharp and produces a vibrato when played with its matching rank. Do not use this rank in full combinations.

4. Reeds produce tones which are imitative of orchestral instruments and others which are non-imitative.

a) Chorus reeds are used both for ensemble and solo purposes (Bombarde, Posaune, Trumpet, Cornopean, Oboe, Clarion).

b) Solo or Orchestral Reeds are used mostly for solo purposes (Bassoon, Clarinet, English Horn, French Horn).

The ornaments below are used in this study:



The Seventy-Nine Chorales, Opus 28, by Marcel Dupré, H. W. Gray Co., should be studied in the following manner:

Lesson 4,	X.	Christ the Lamb of God
Lesson 5,	I.	Abide with us, O Lord Jesus Christ
	IV.	Glory be to God on high
Lesson 6,	LII.	Beloved Jesus, here we stand
	XIII.	Christ our Lord to Jordan came
Lesson 7,	XL.	In Thee is joy
	XII.	Christ lay in the bonds of death
Lesson 8,	XXI.	Through Adam's fall is the world defiled
	LXXI.	Before Thy Throne I will appear
Lesson 9,	LXXII.	Awake! Hear the call of watchmen
	XXVI.	Salvation has been brought unto us
Lesson 10,	XLIII.	Jesus Christ, our Saviour
	XV.	Christ Jesus who maketh us glad
Lesson 11,	IX.	O Christ who art the Light of the World
	II.	O Lord my God
Lesson 12,	XLII.	Jesus my joy
	LXXVII.	We all believe in one God

LESSON I

LESSON ONE

Manual Exercises

The organist should seat himself exactly in the middle of the organ keyboard and stay there without sliding around. The bench must be the right height, which is at least twenty inches from the top of middle D on the pedal board to the top of the organ seat. When an adjustable organ bench is not available, you may make adjustments by using wooden boards under both ends of the organ bench.

Sit on the organ bench so that with the feet you can comfortably play both the white and black keys of the pedal board. Keep the elbows close to the body; sit erect and avoid unnecessary motions.

The organist needs a special pair of shoes to be used only for playing the organ. The shoes should be as narrow as possible for comfort, and made so that the soles do not extend beyond the shoe. Tap shoes for men and women make ideal organ shoes.

ATTACK AND RELEASE OF KEYS

Keep the hands on the keys with the fingers curved. A good hand position is similar to that of holding a baseball. A key should be pressed down firmly and quickly, and released with the same precise movement.

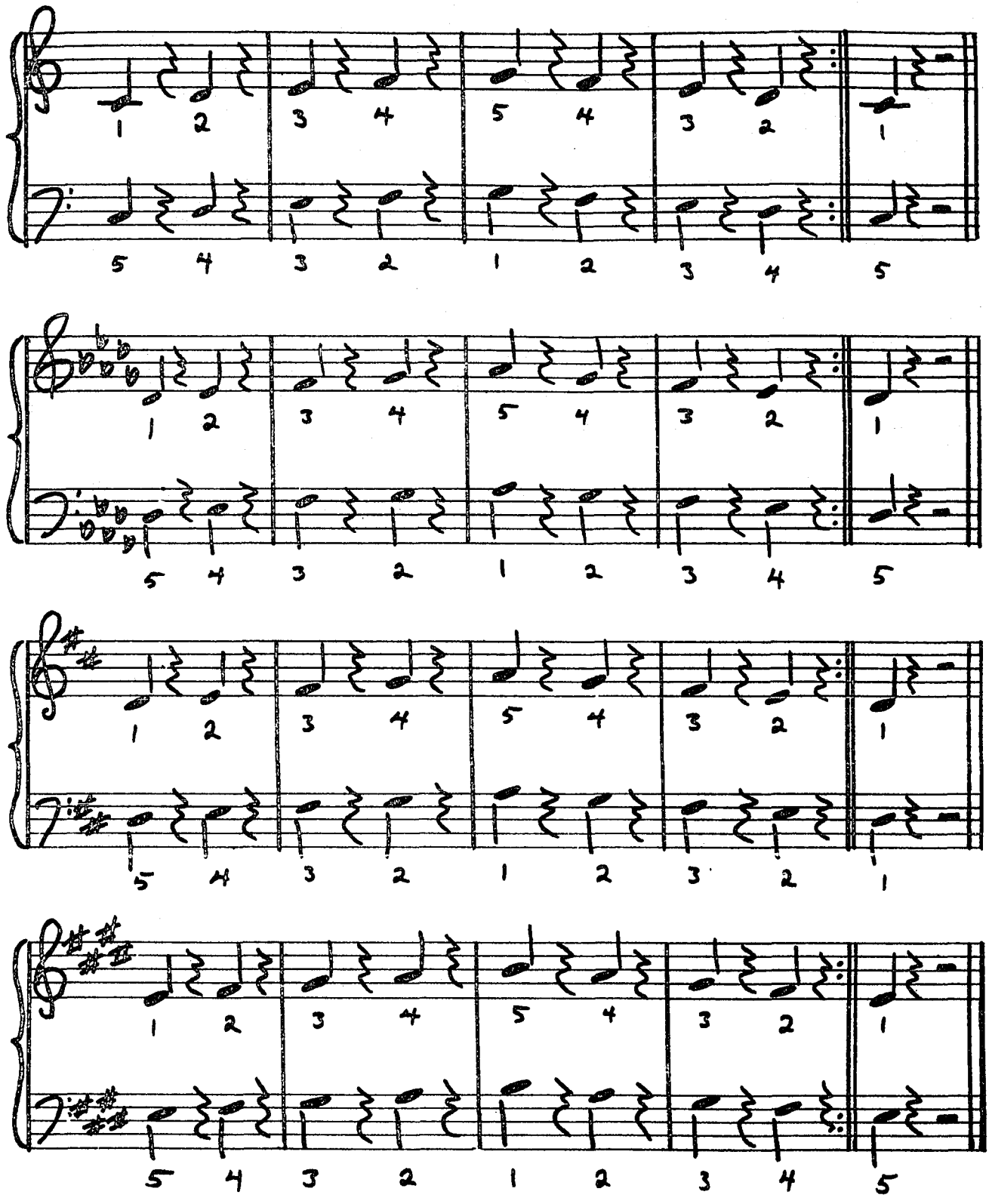
Organ touch differs from piano touch and therefore,

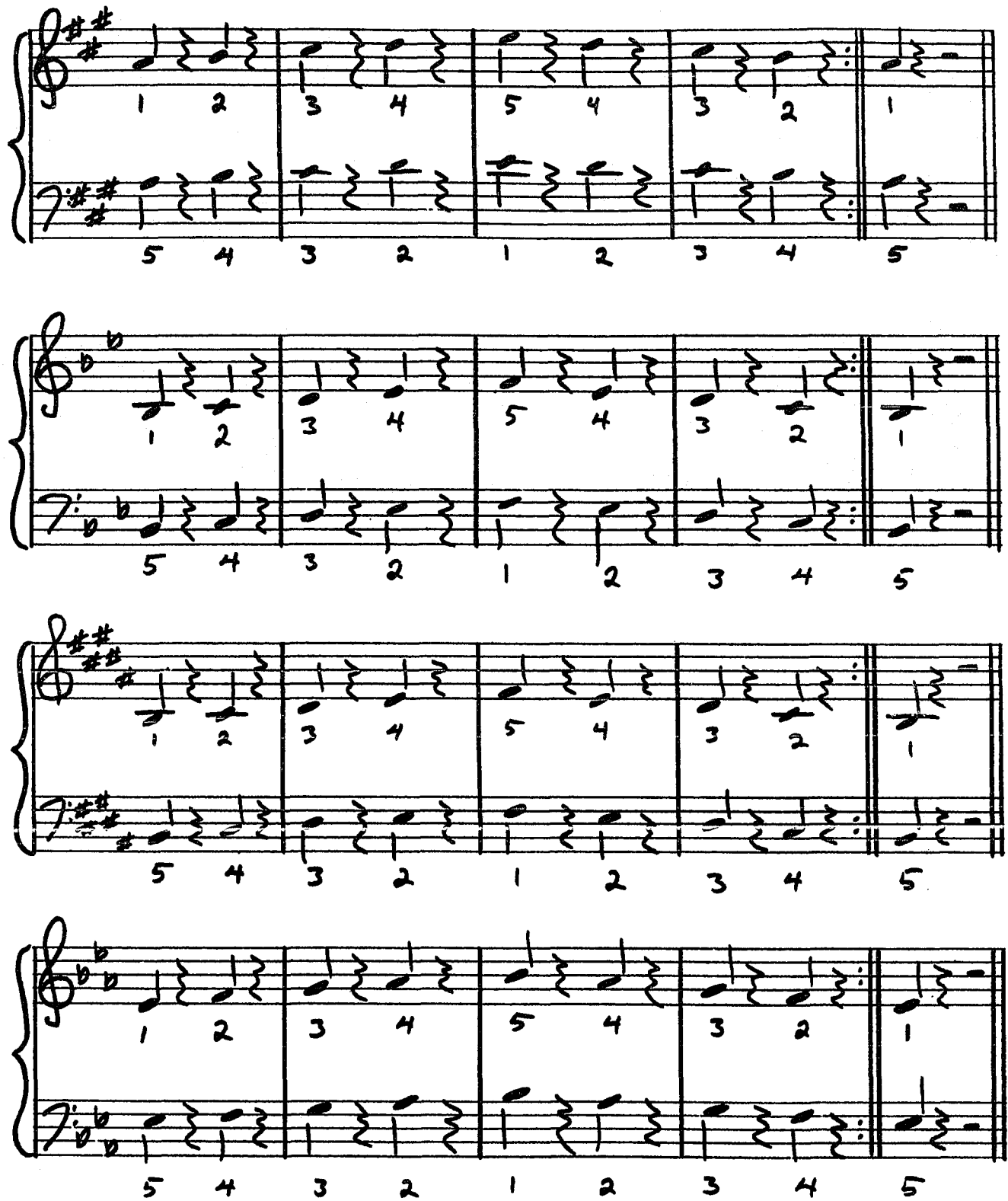
new techniques must be learned. A perfect legato is one of the most essential requirements of good organ playing. When playing legato, the fingers should always press the keys evenly rather than striking them. There should be no space or gap between the notes. Not the slightest break or overlapping is allowed.

The tone on the organ continues at the same intensity until the key is released. Therefore, great precision is needed in attacking and releasing the key.

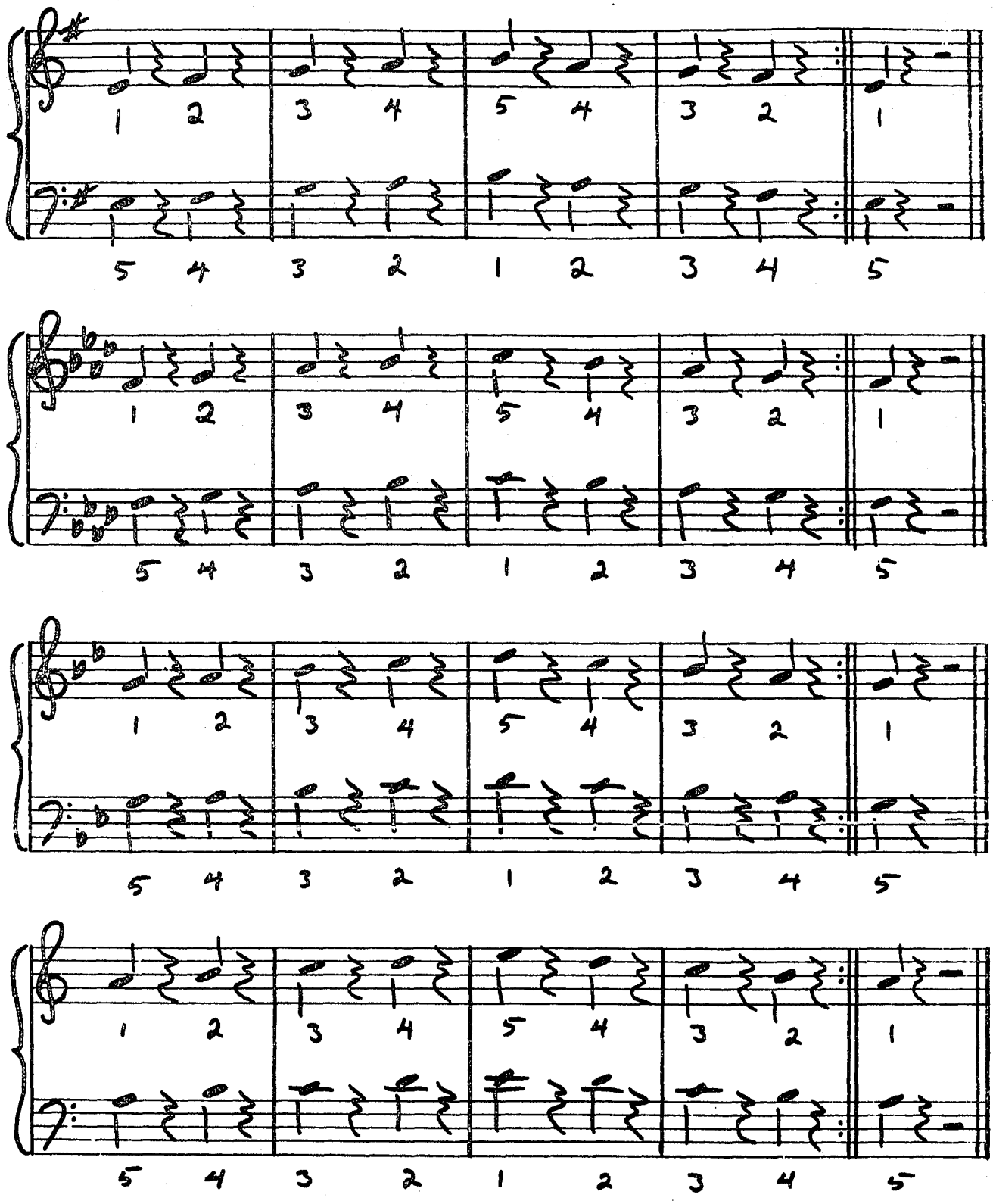
Attack and release the notes exactly together.
Count aloud as you play, and use the proper fingers.

5 Tone Major Scale

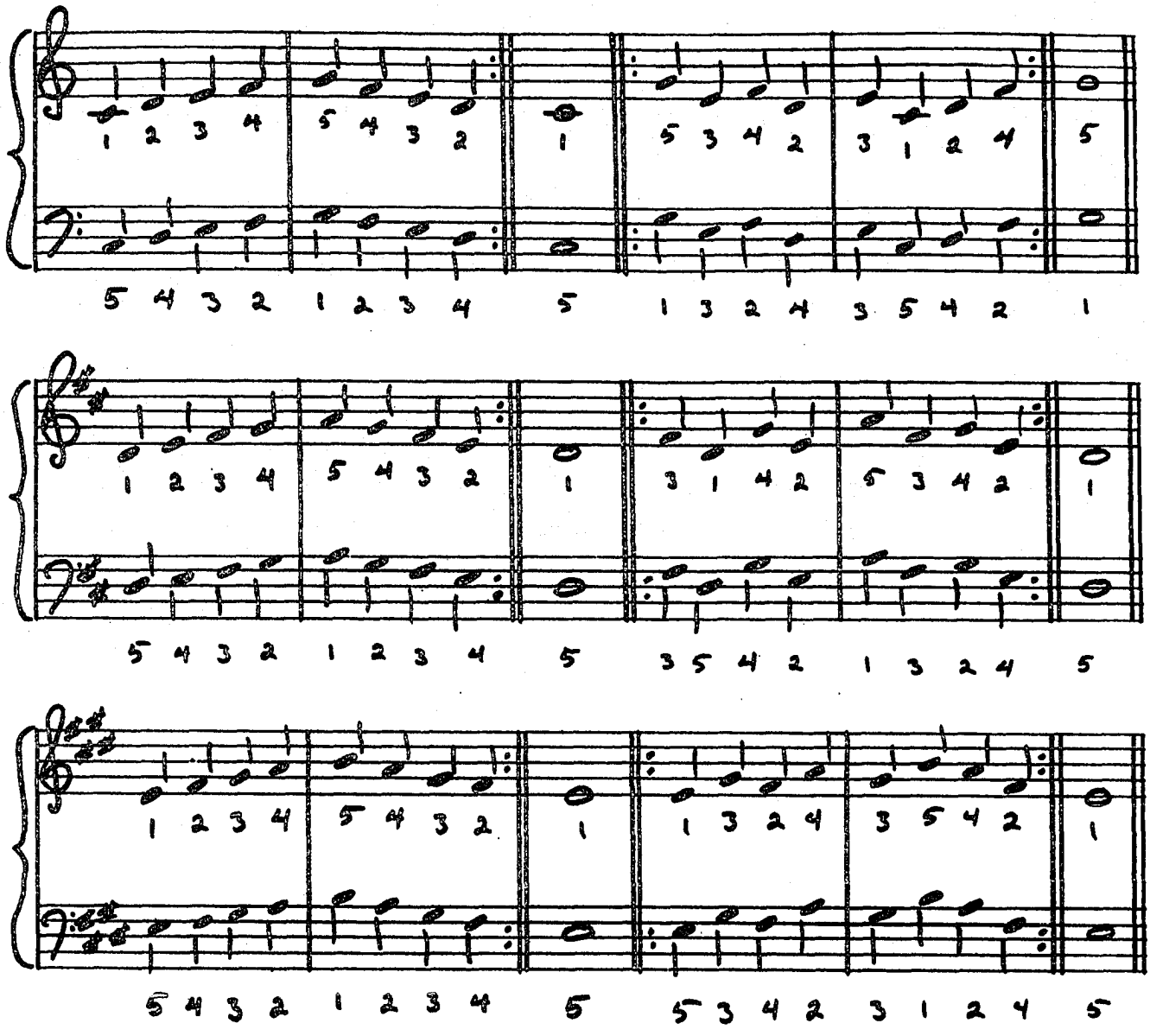




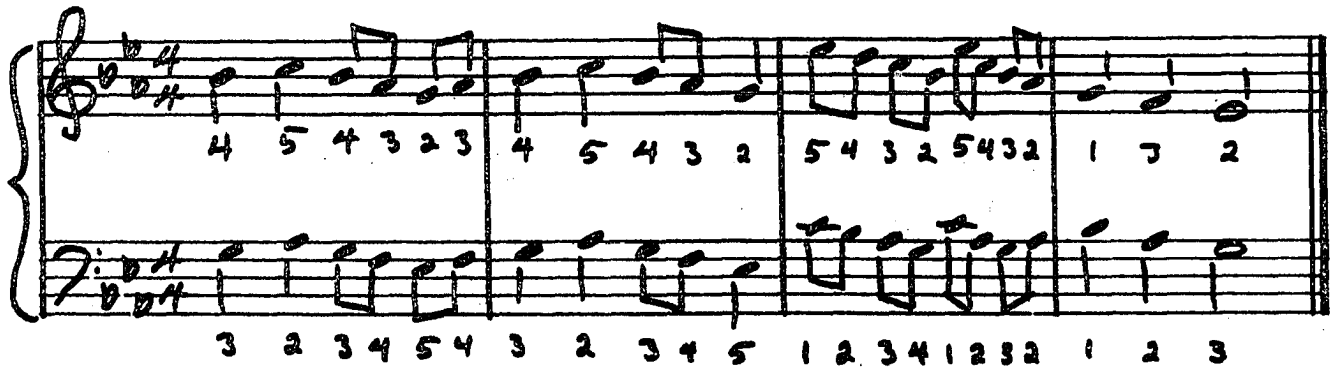
5 Tone Minor Scale



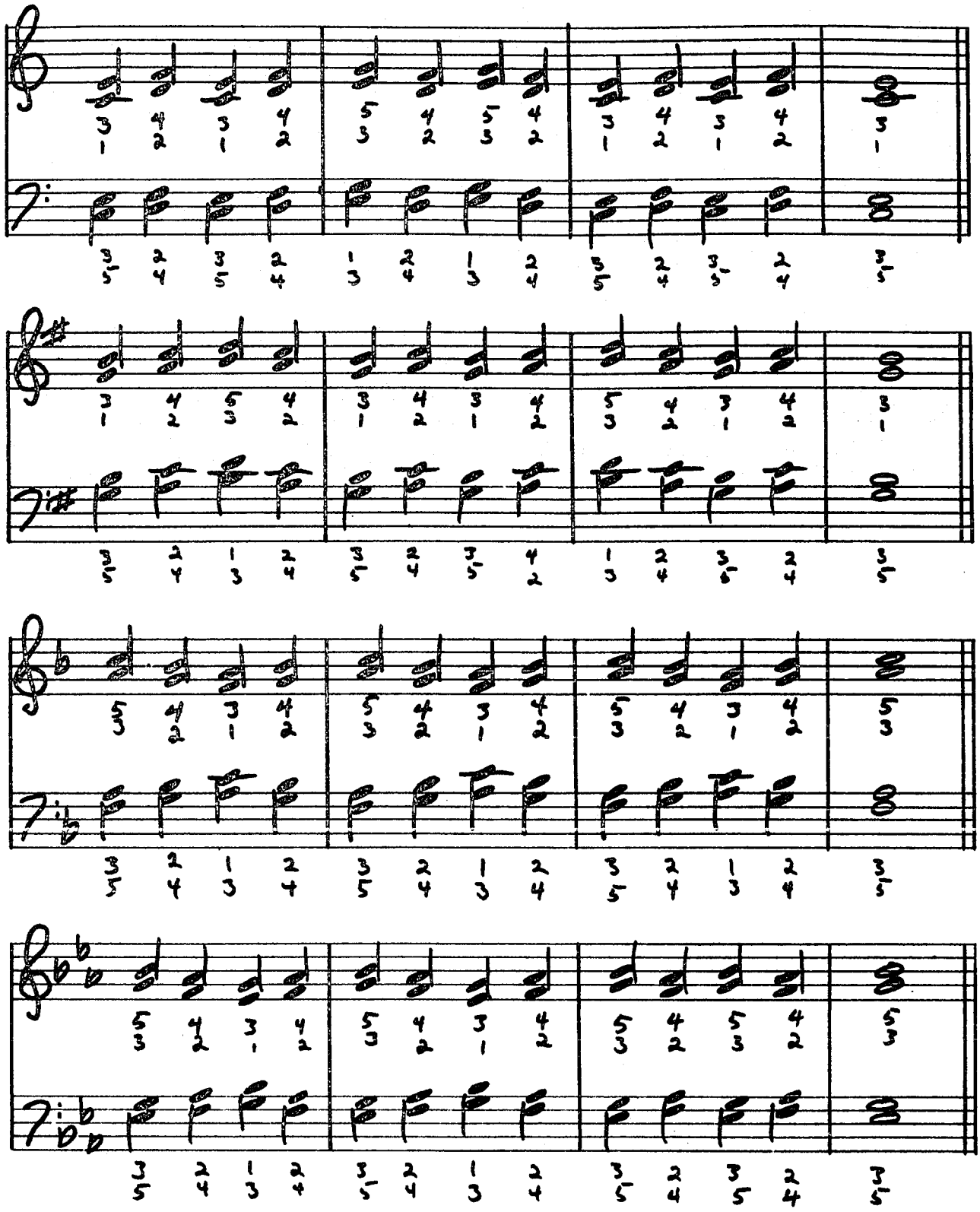
A legato touch is basic to the technique of an organist. One note must follow another with no separation or overlapping. This produces a smooth line.



Sicilian Mariners' Hymn (excerpt)

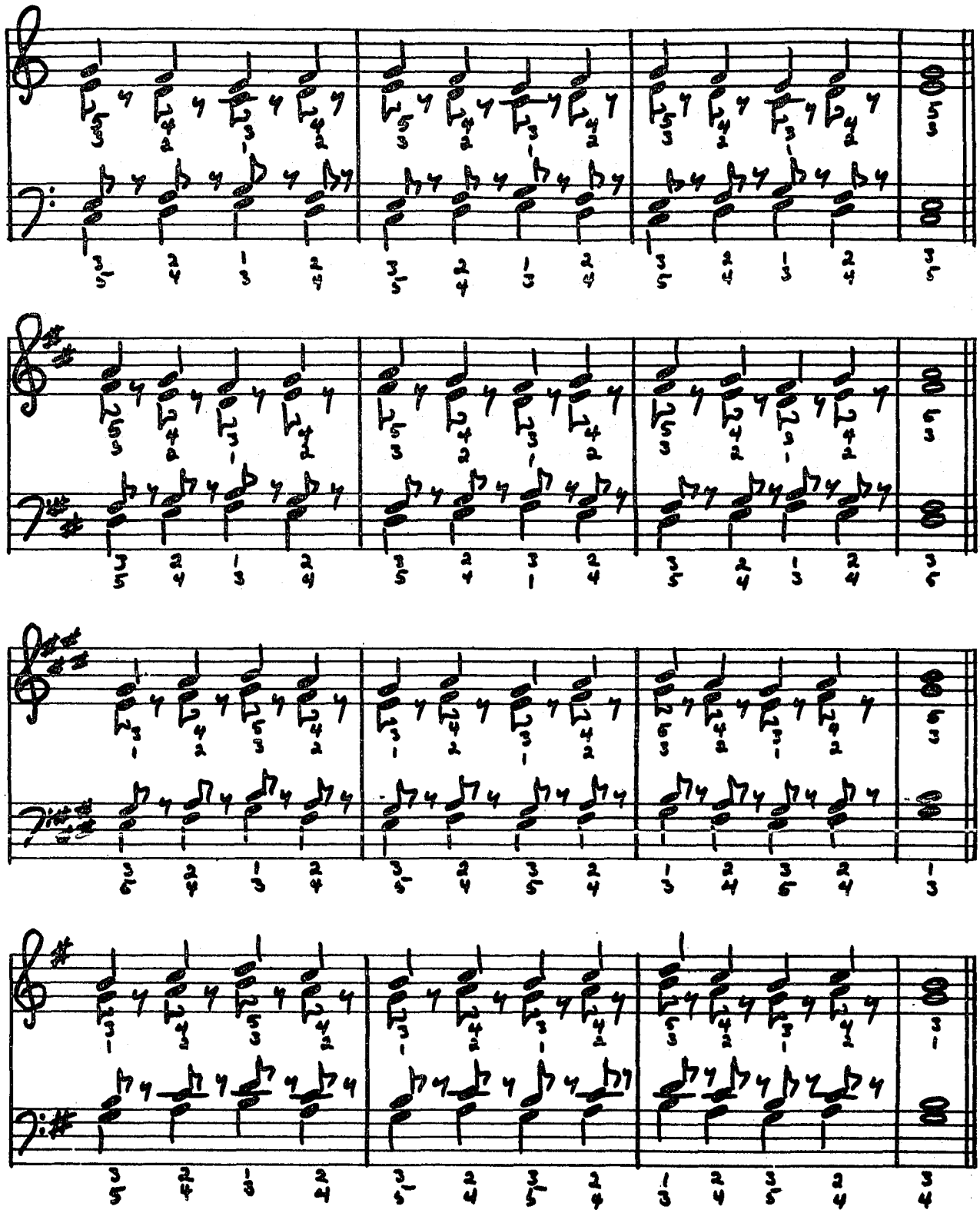


Each hand plays the interval of a 3rd in a legato manner. Practice hands separately. Play slowly, and count as you play. Be sure and use the correct fingers. Now play with hands together.



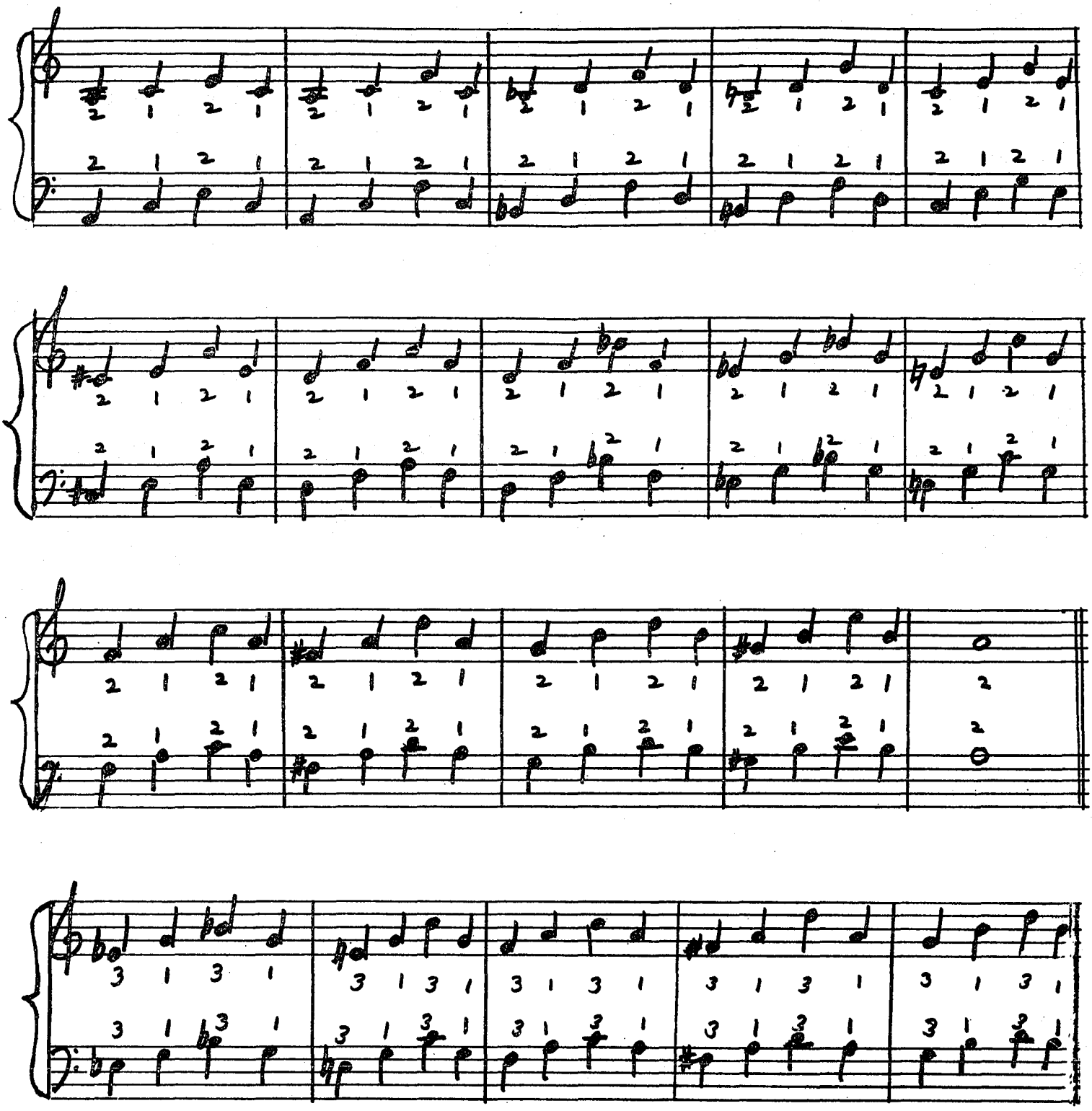
Combining Legato and Detached Notes

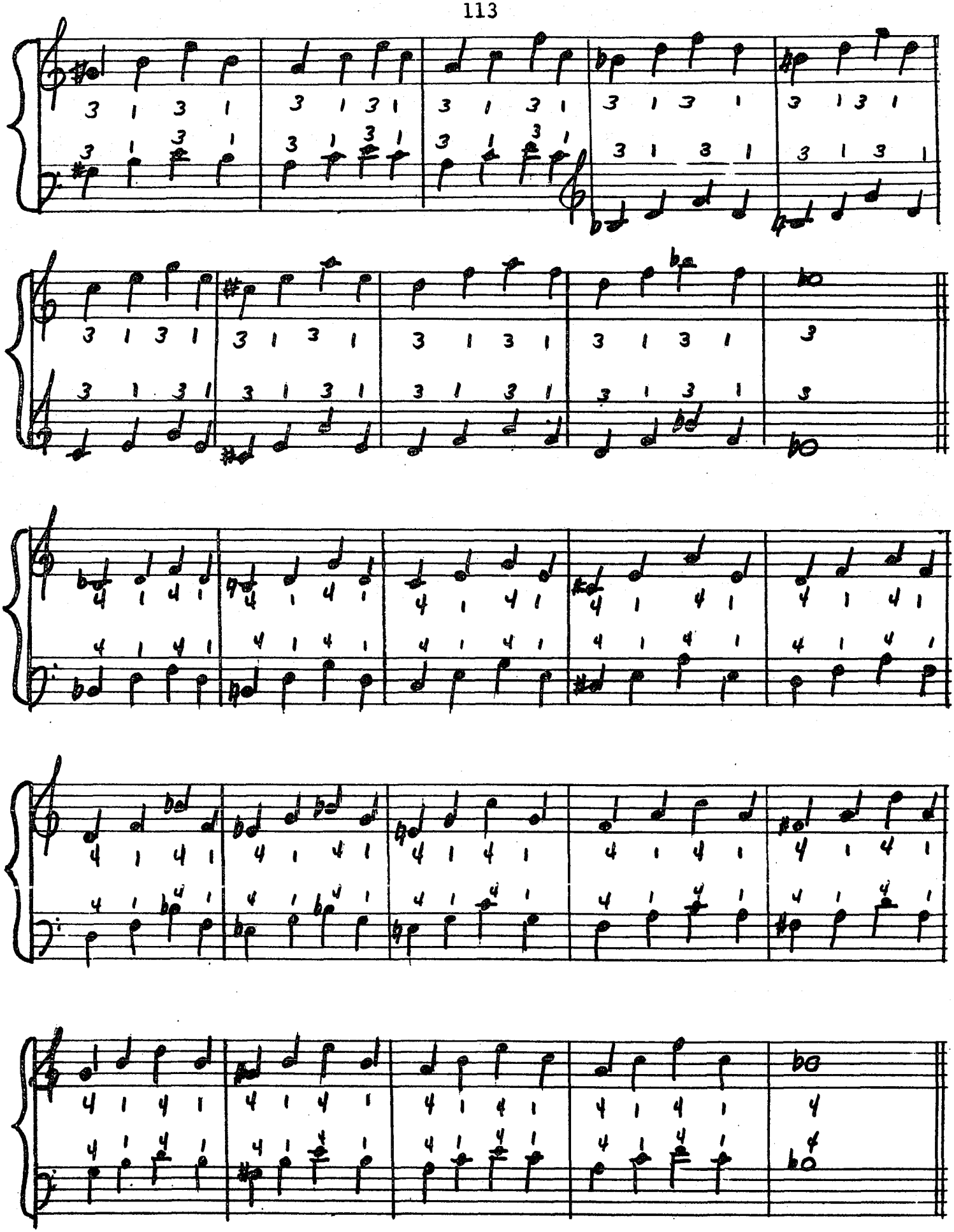
The soprano and bass lines are played smoothly, while the alto and tenor parts are detached. Play each hand slowly remembering to connect the legato line. Count one-and-two-and-three-and-four-and, as you play. Practice with hands together.



Crossing of Fingers over Thumb

Play in a legato manner while passing the thumb under. Keep the back of the hand as level as possible. Practice hands together slowly.

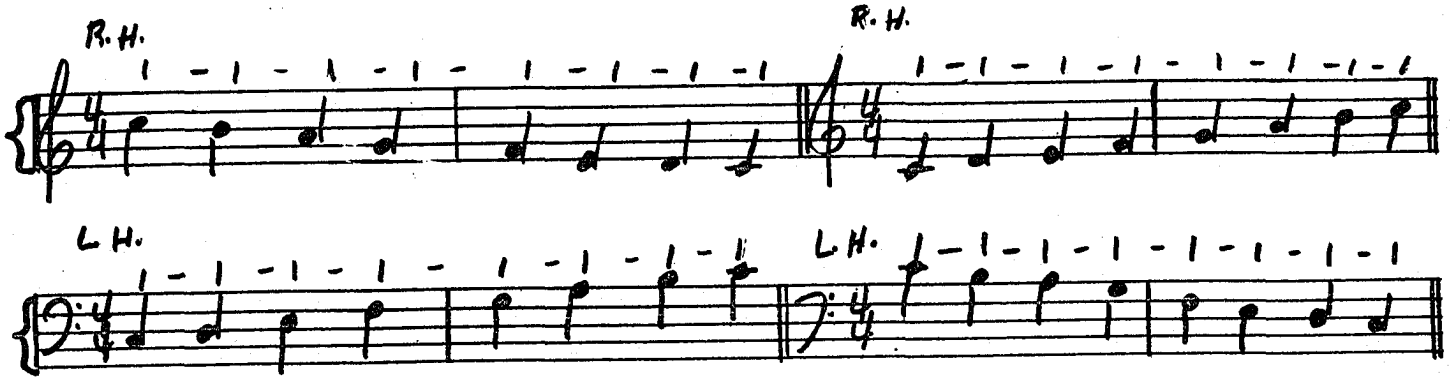




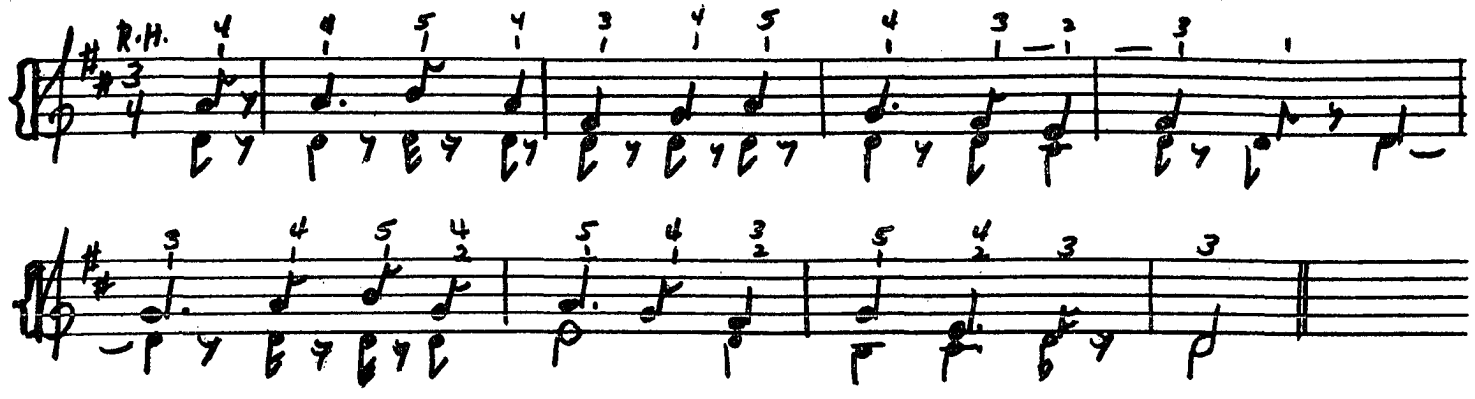
Thumb glissando consists of sliding the thumb from one key to another. In descending passages of thumb glissando played with the right hand, each note is first played with the tip of the thumb and then the tip is slid into position over the next key.

In ascending passages with the right hand the opposite motion is required. Begin with the base of the thumb, and slide to the tip of the thumb, playing the next note with the base of the thumb.

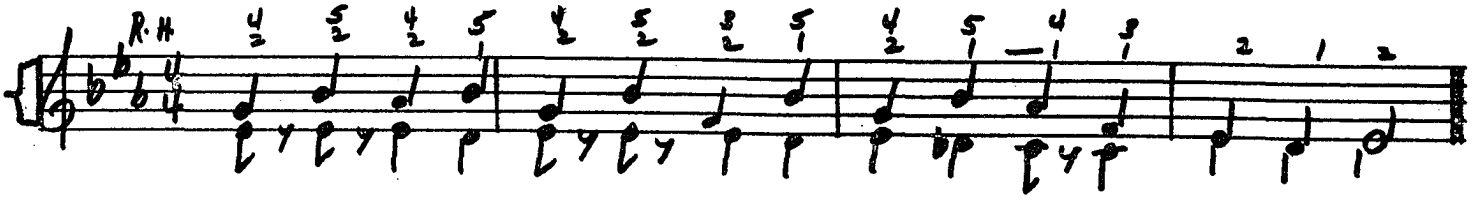
In L. H. ascending passages, begin with base of thumb and play next note with tip of thumb. L. H. descending is the reverse procedure.



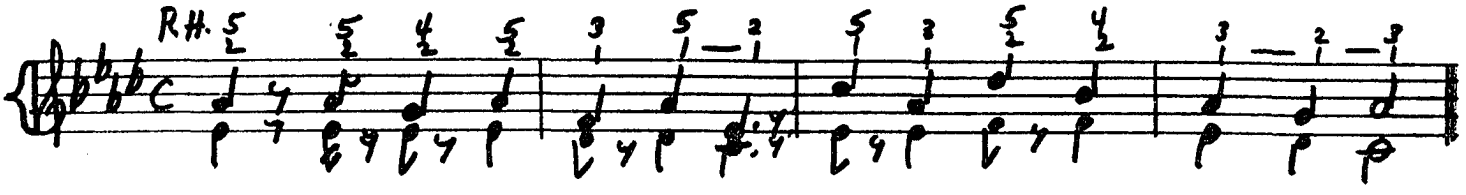
Kremser (excerpt)



Vesper Hymn (excerpt)

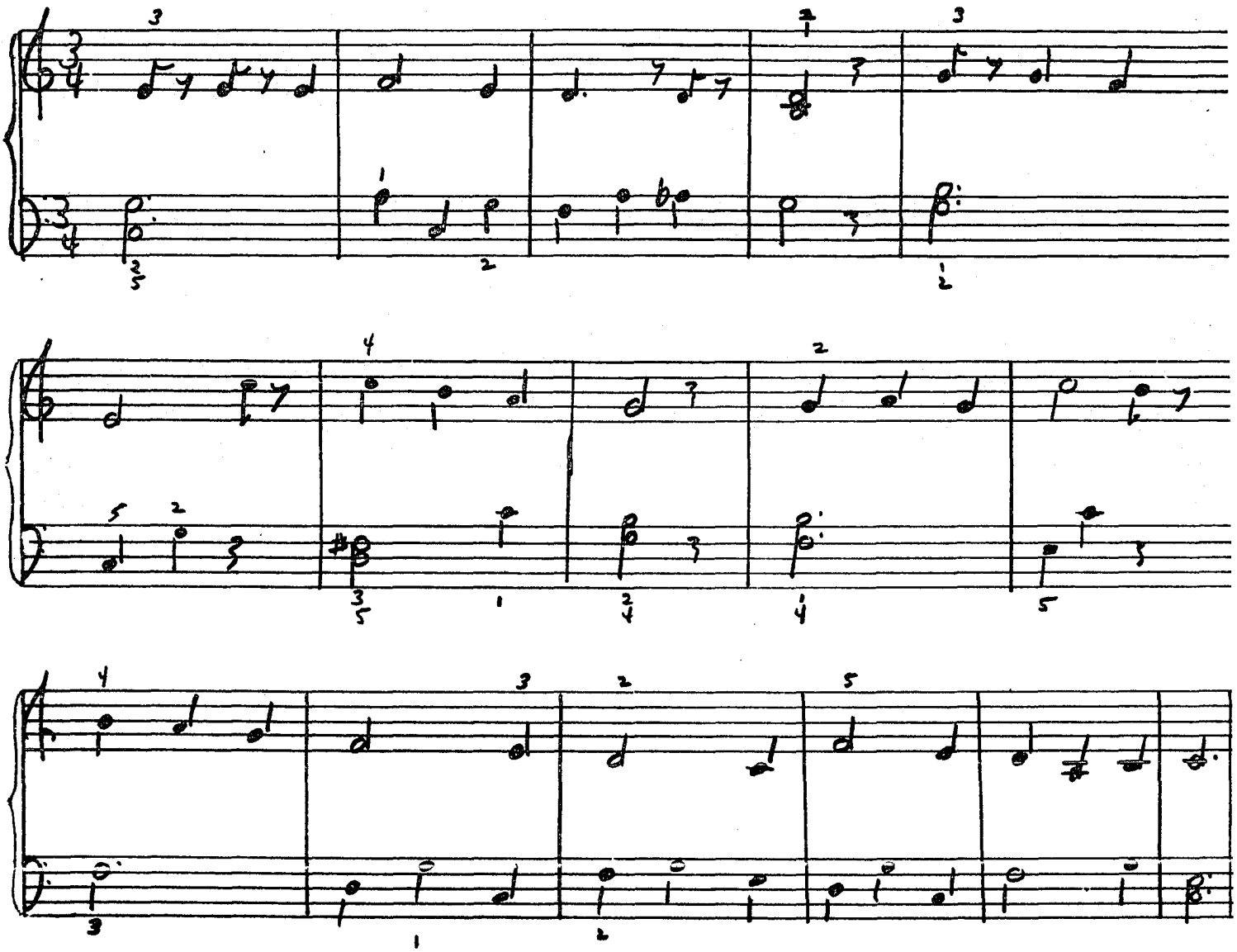


Spanish Hymn (excerpt)

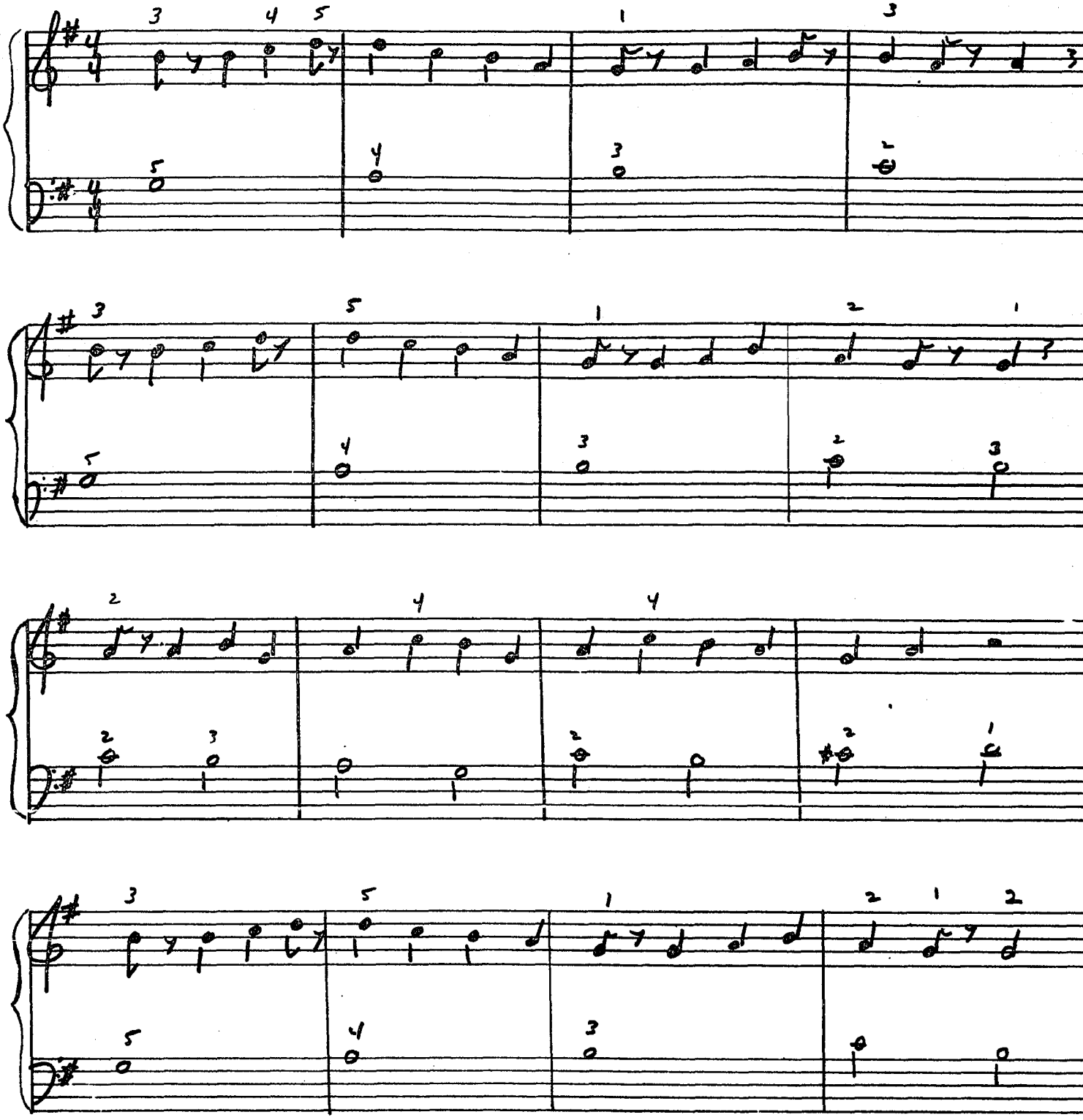


"O Master, Let Me Walk with Thee" Percy Smith

Maryton

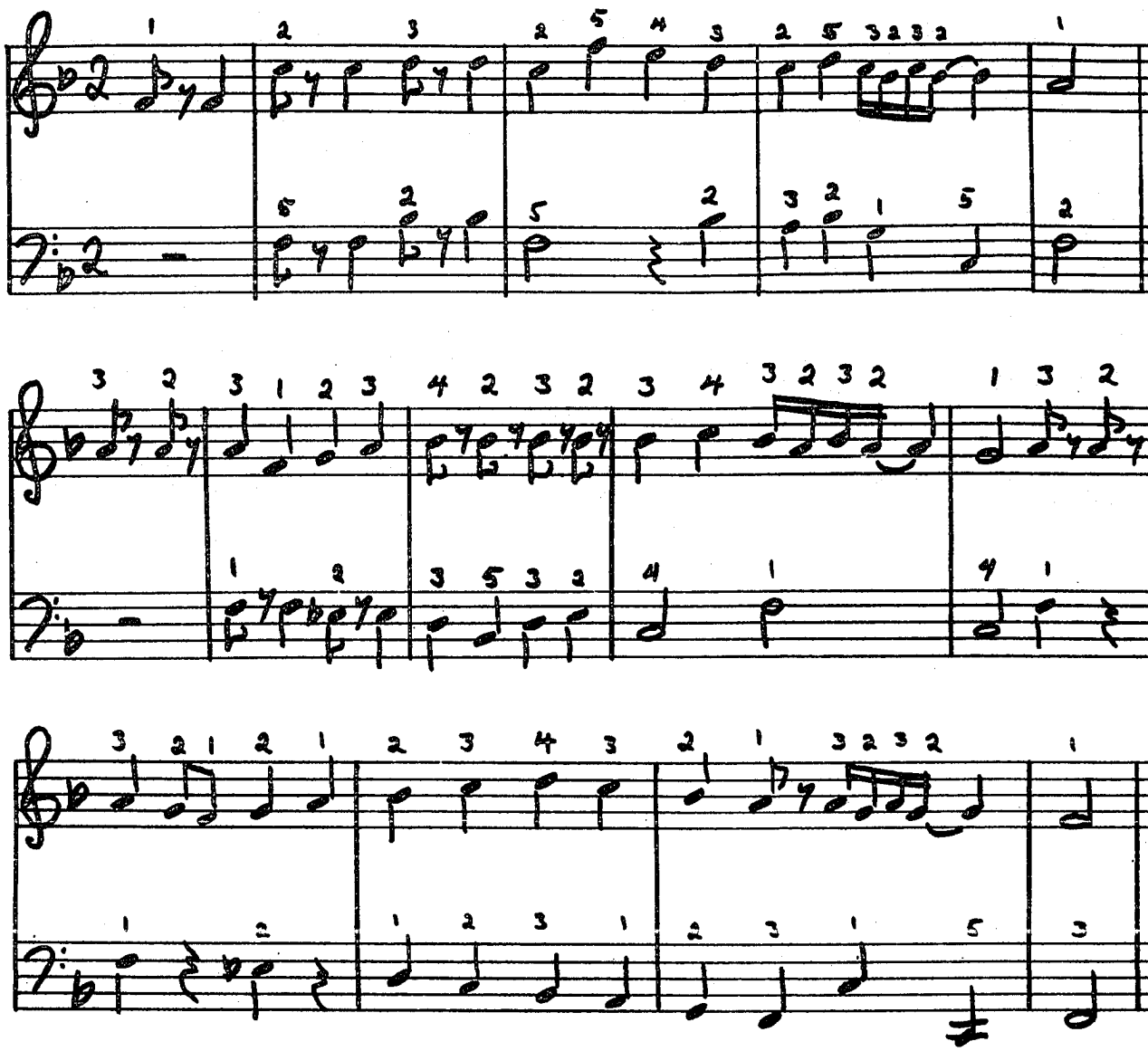


Hymn To Joy Beethoven



2 in the time signature indicates 2 beats in a measure with the ♩ getting 1 beat. While you are learning this piece, count one-and-two-and-three-and-four-and so that you will have exact precision in playing the notes and releasing them. Practice the hands separately, and then together.

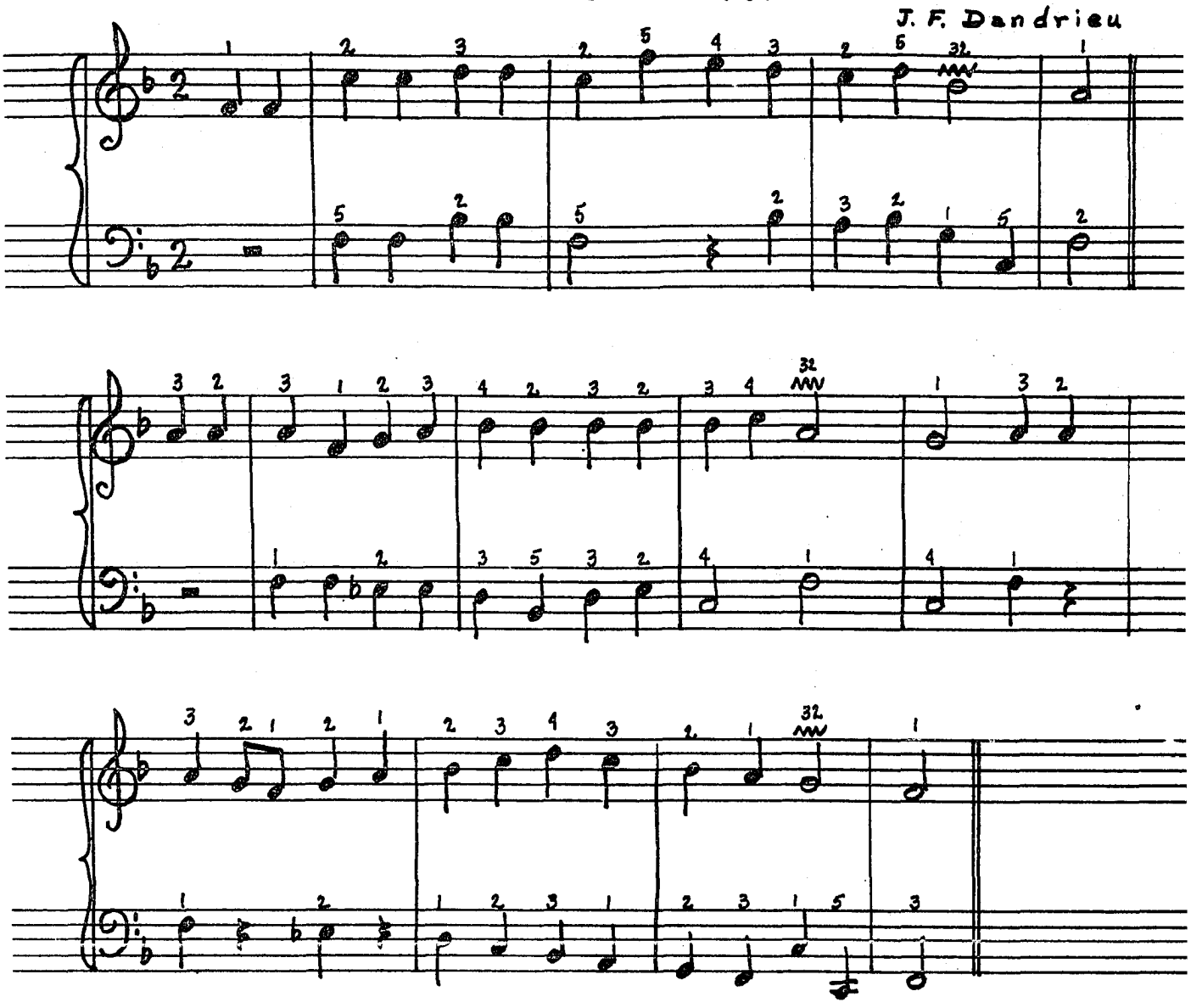
Savez vous mon cher voisin



Know this piece well before playing the next page.

Savez vous mon cher voisin

J. F. Dandrieu



LESSON II

LESSON TWO

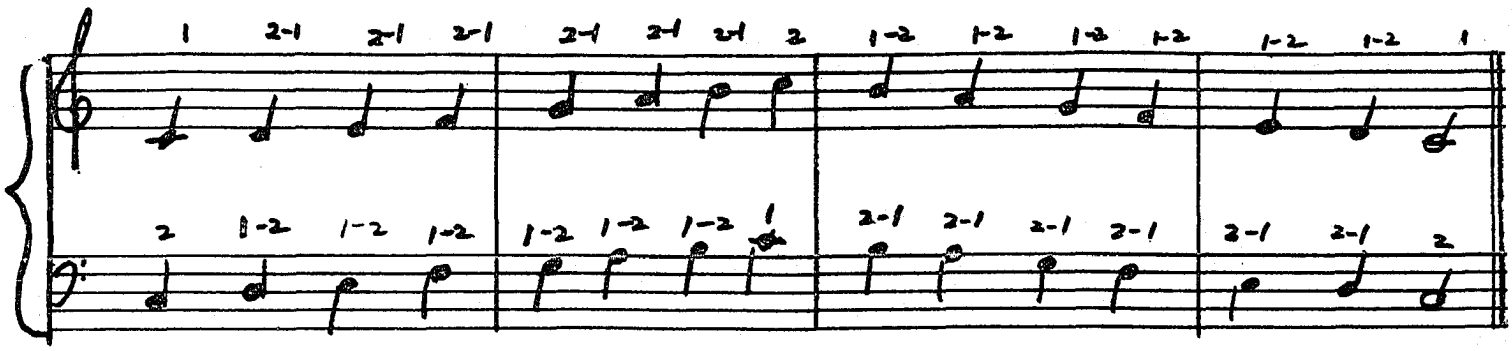
Substitution is another technique that is basic to organ playing.

These exercises are to be played in a legato style while the substituting of fingers is taking place.

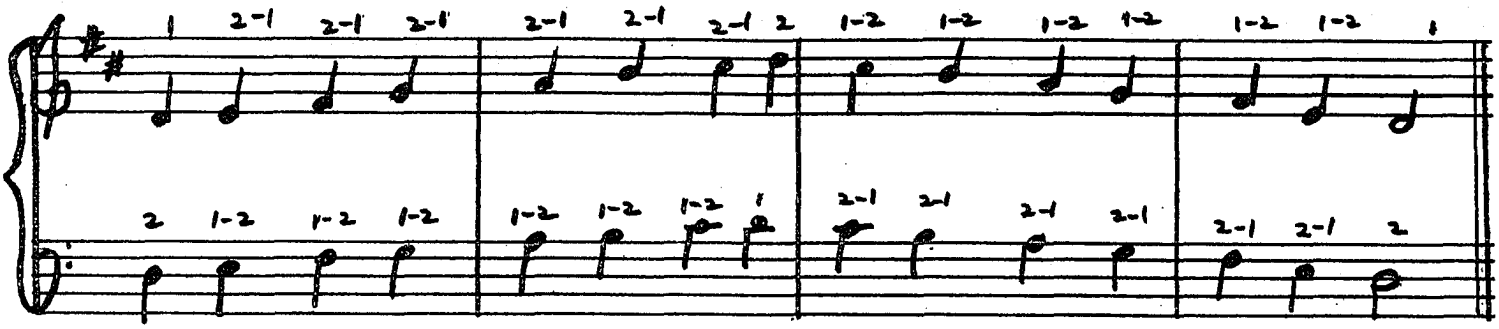
One note must follow another smoothly! Make the substitution quickly and with precision.

Practice hands separately, and then together.

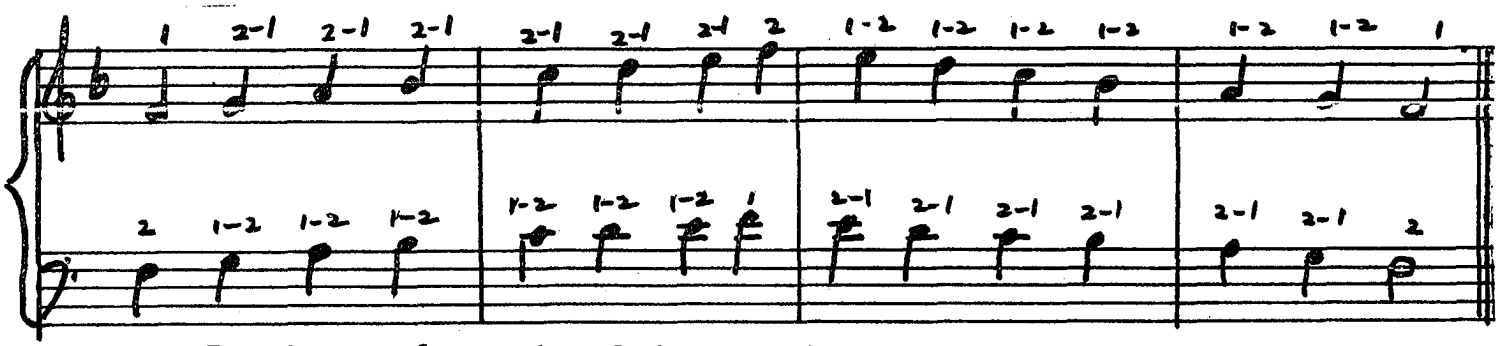
C Major scale, using 1st and 2nd fingers.



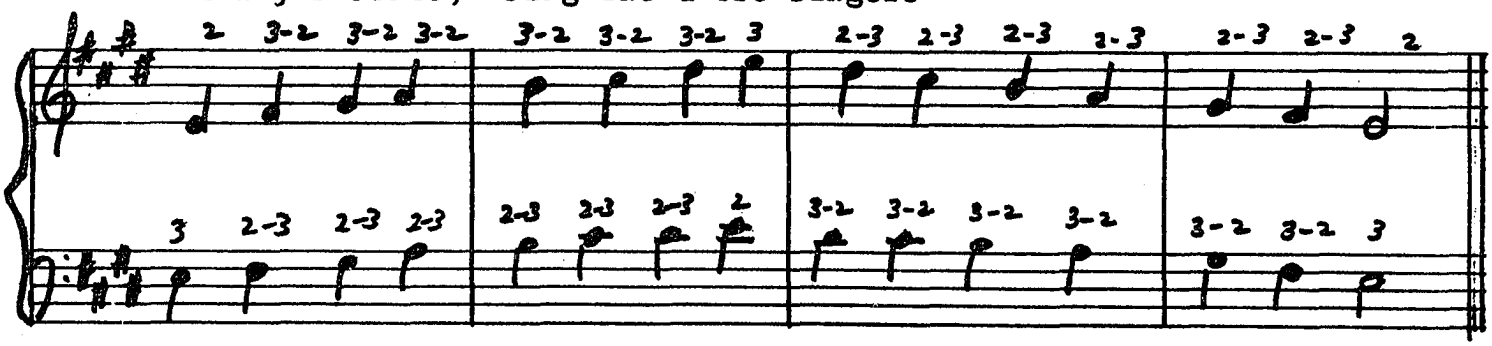
D Major scale, using 1st & 2nd fingers



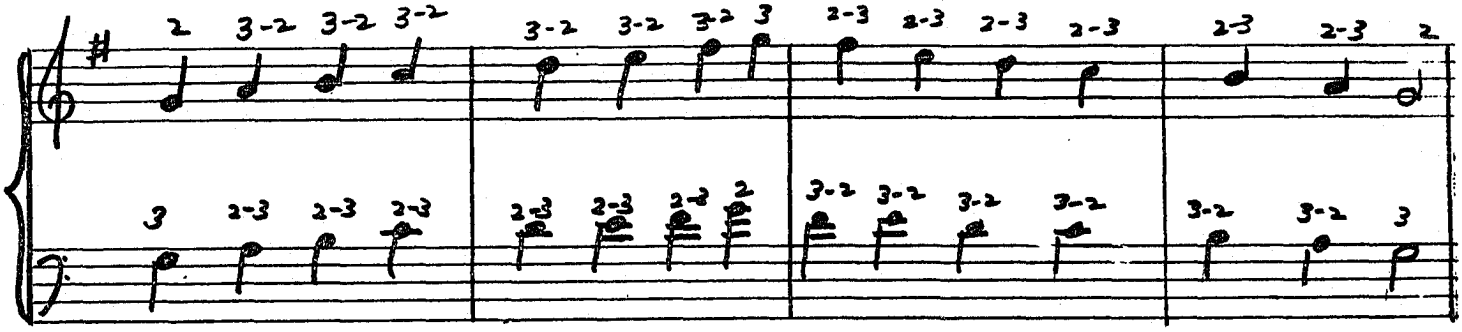
F Major scale, using 1st & 2nd fingers



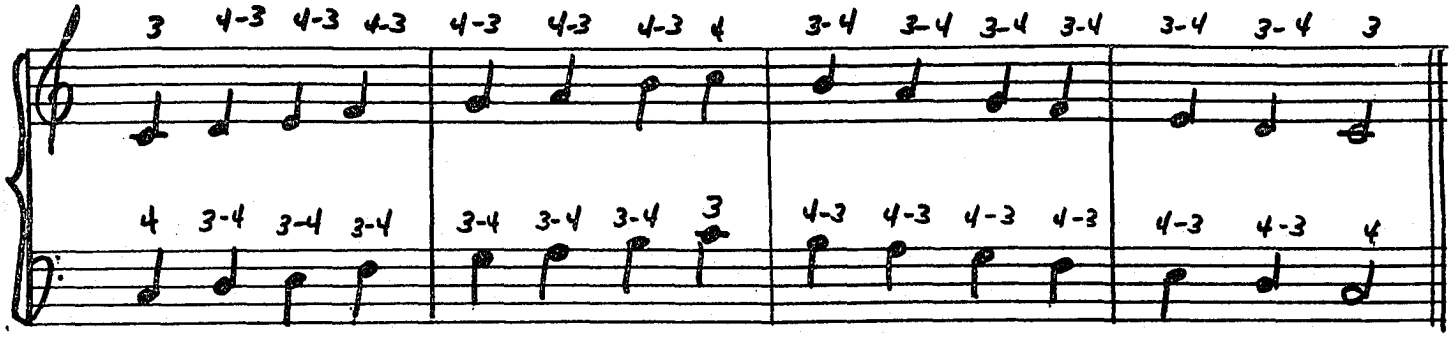
E Major scale, using 2nd & 3rd fingers



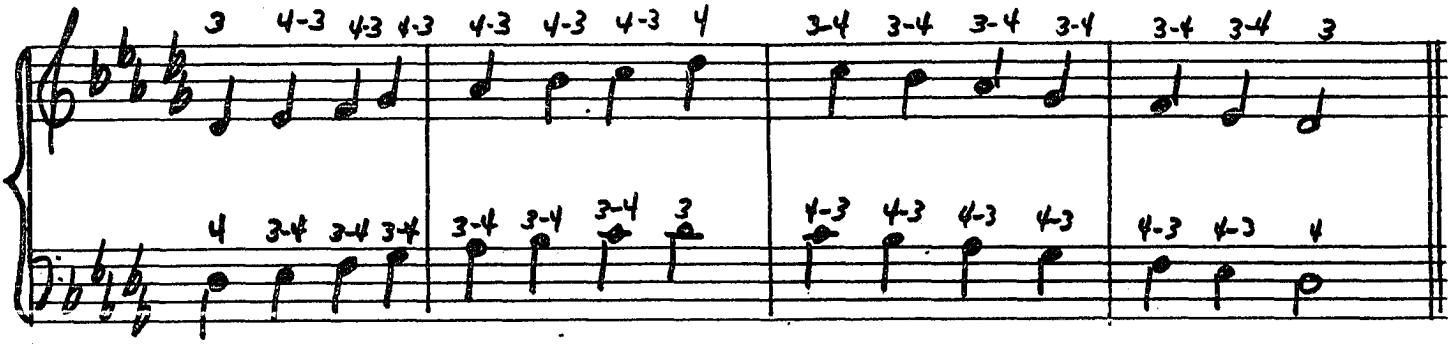
G Major scale, using 2nd & 3rd fingers



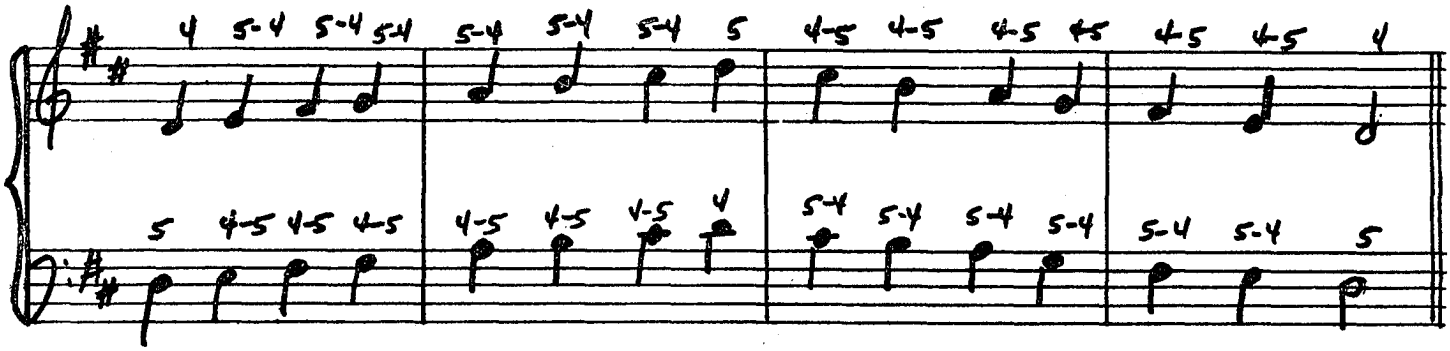
C Major scale, using 3rd & 4th fingers

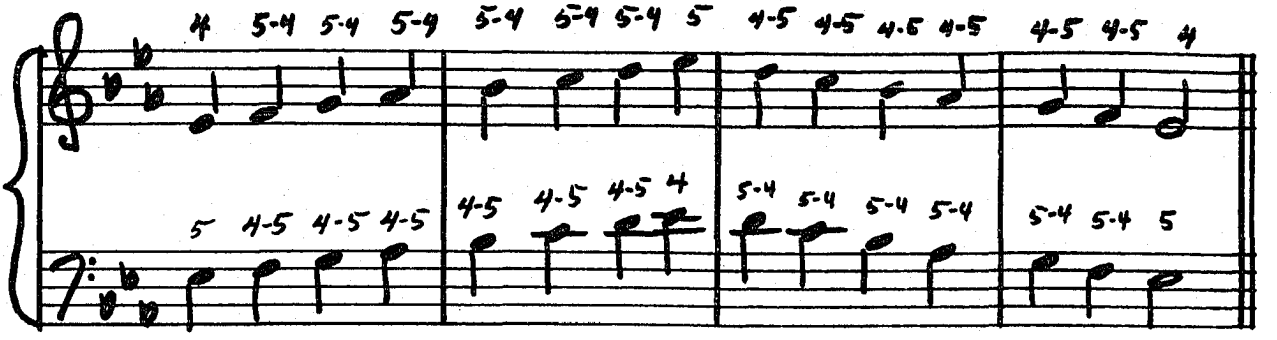


D♭ Major scale, using 3rd & 4th fingers



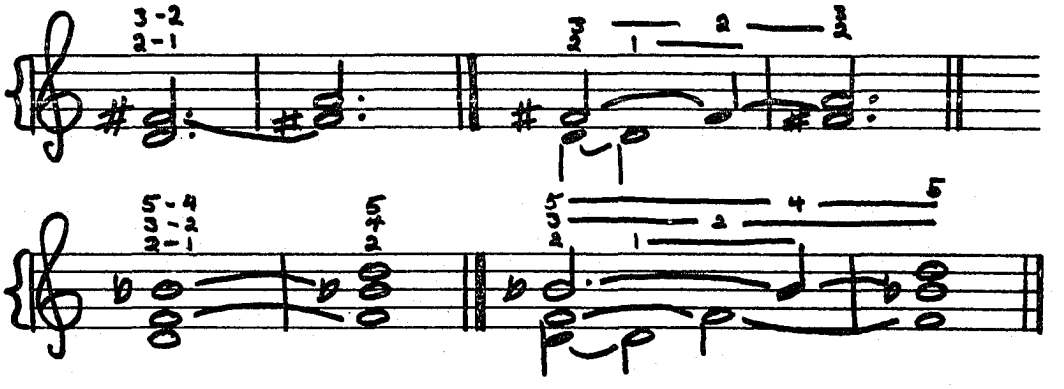
D Major scale, using 4th & 5th fingers





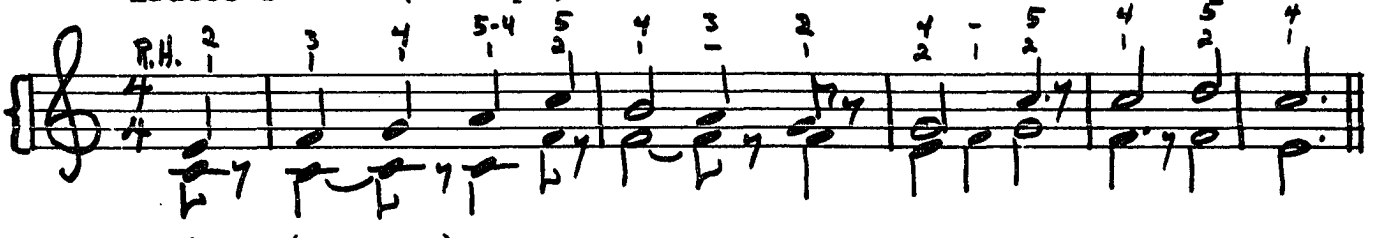
Substitution in a chord

Written: Played:

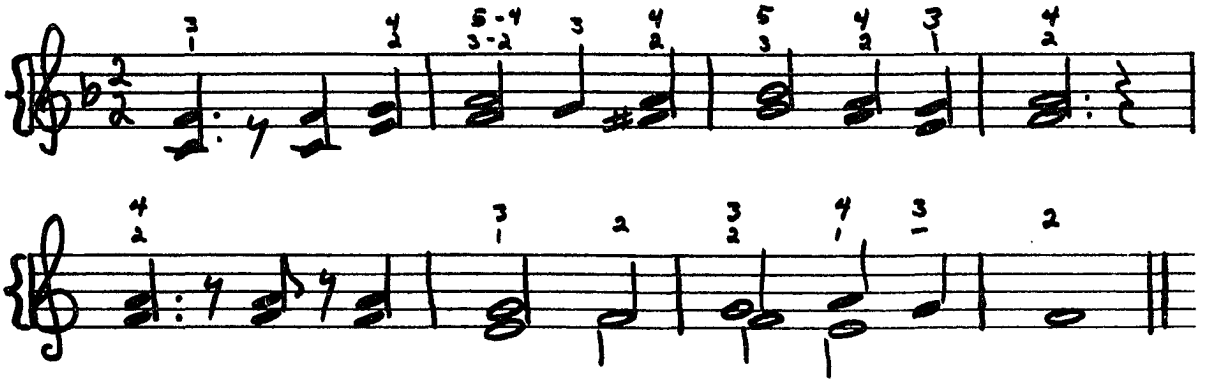


The dash placed after a number indicates that the finger must remain on the note over which the number is written.

Laudes Domini (excerpt)



Hamburg (excerpt)



Pedal Techniques

Keep the knees and heels touching as far as the interval of a fifth.

Press the key quickly and decisively for the attack of a note. The heel should remain in contact with the key when the key is depressed by the toe. The toe should remain in contact with the key when the key is depressed by the heel.

Play on the inside of the pedal key with the inside of the heel or toe.

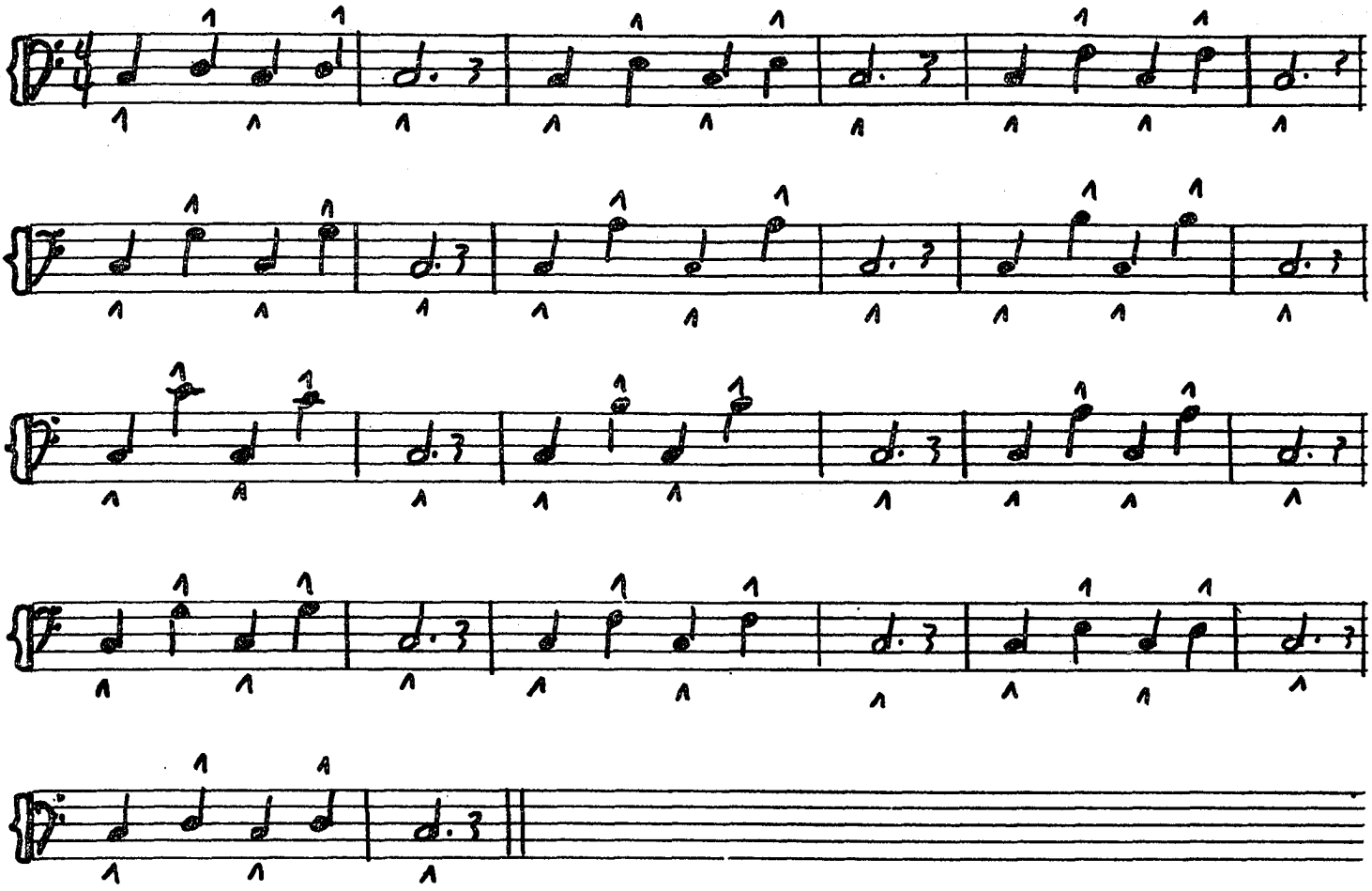
The sign ∧ indicates the toe.

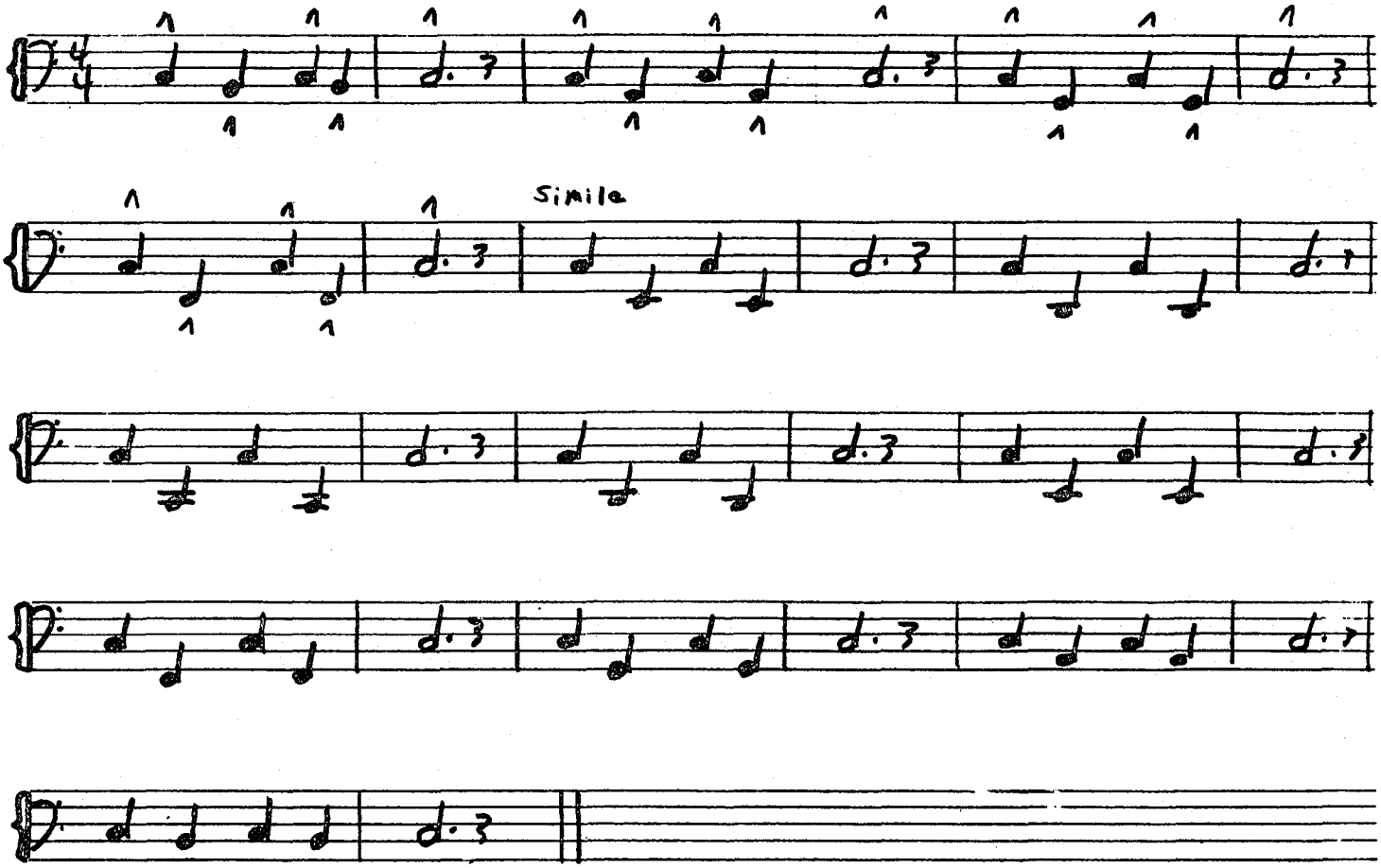
The sign ∪ indicates the heel.

The right foot is indicated when the sign is placed abo e the staff.

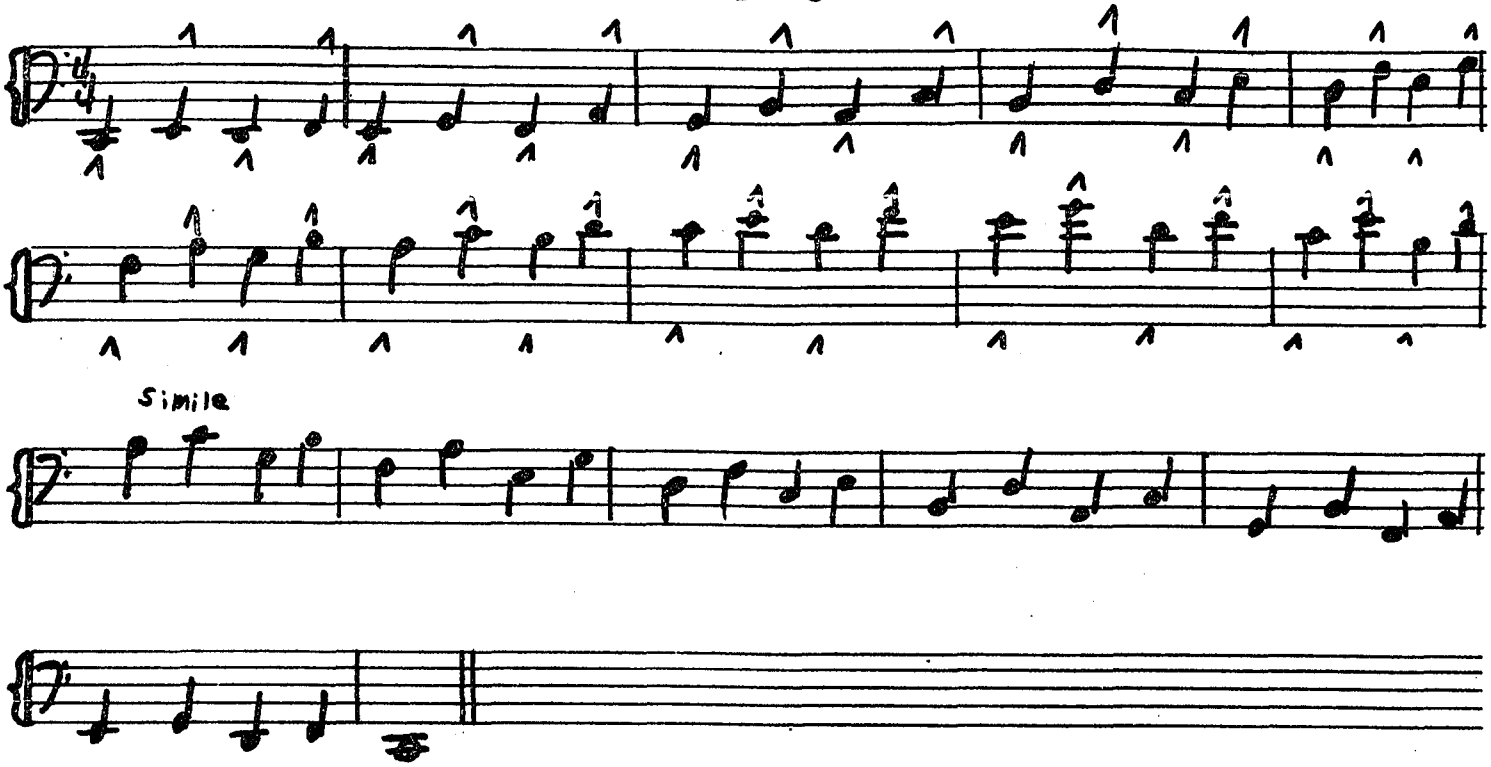
The left foot is indicated by placing the sign under the staff.

Legato -- Toes on white notes

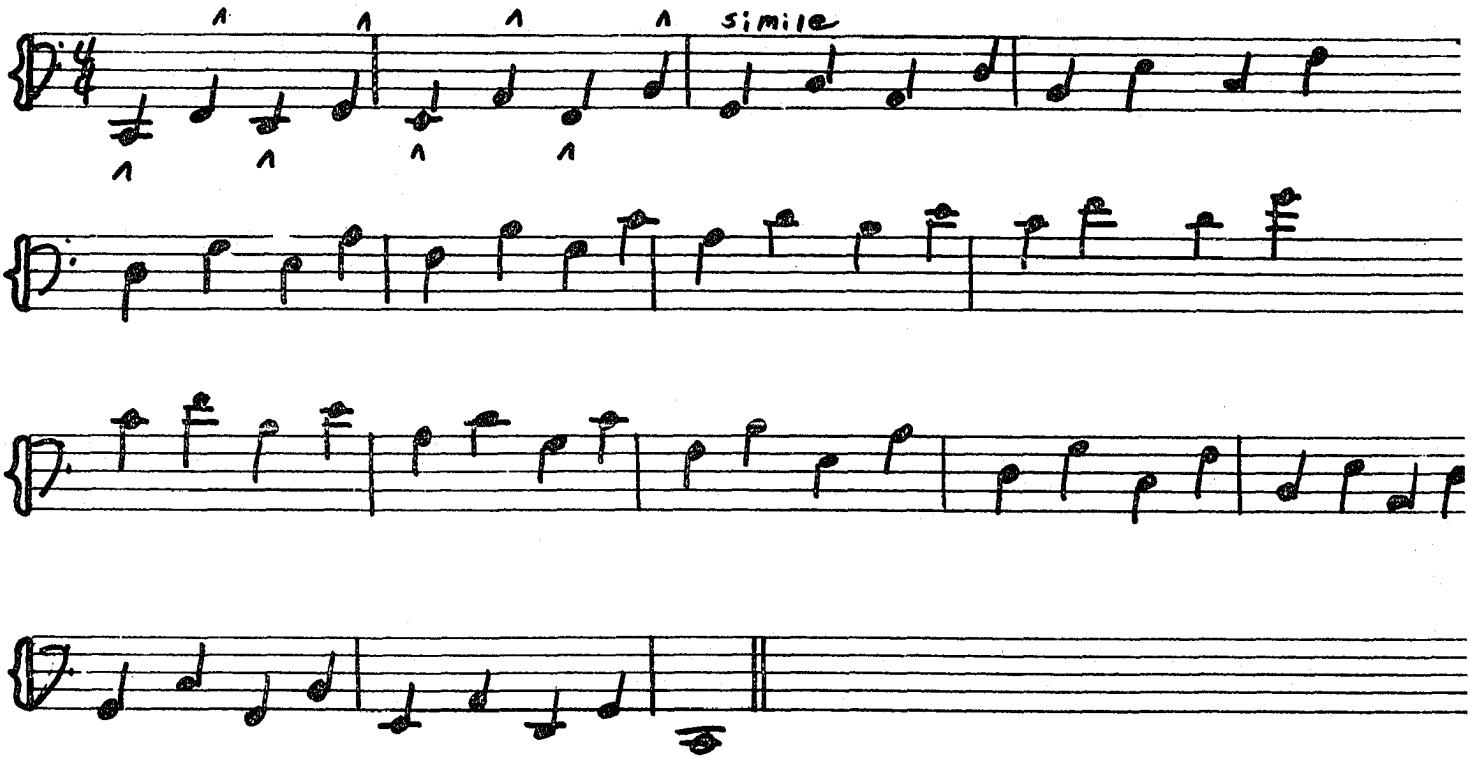




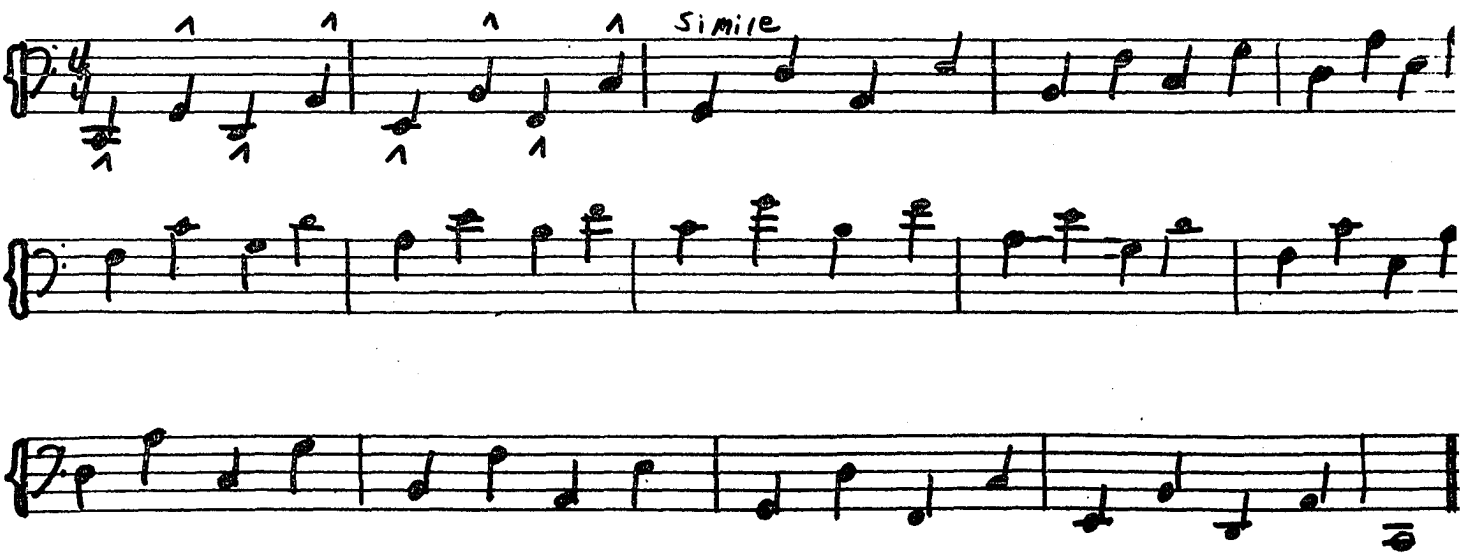
Legato -- playing from the bottom of the pedalboard to the top by 3rds, alternating right and left toe.



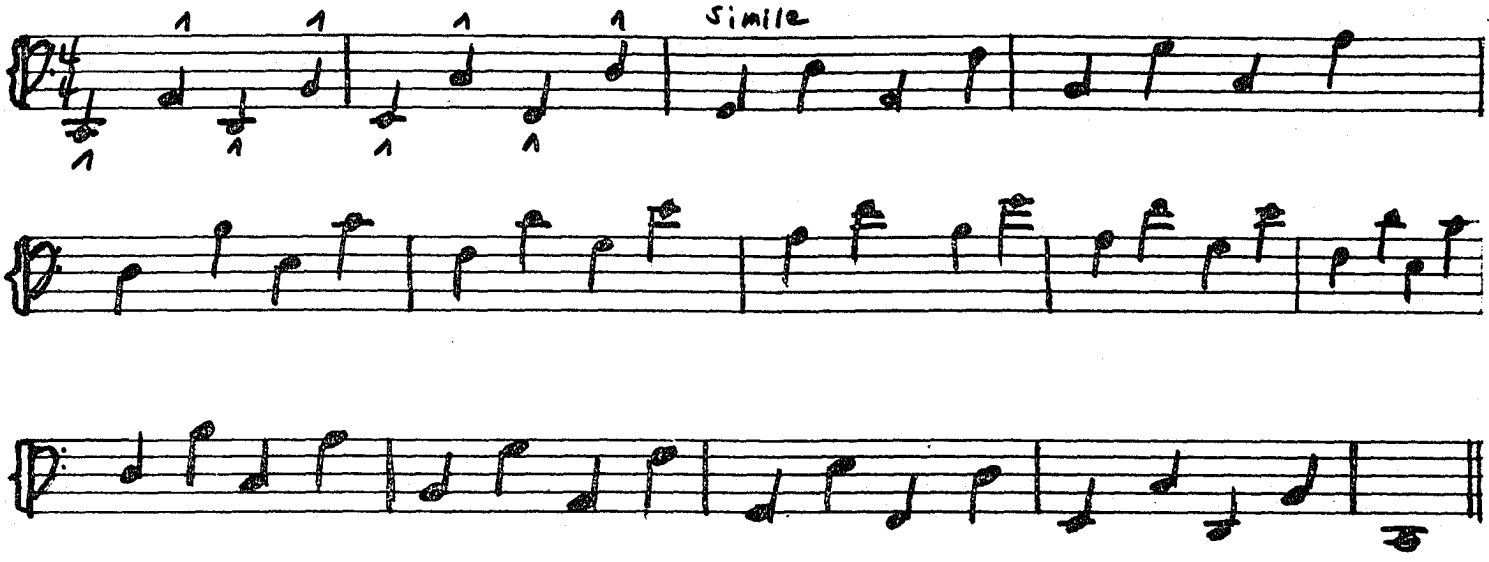
Interval of a 4th, alternating right and left toes.



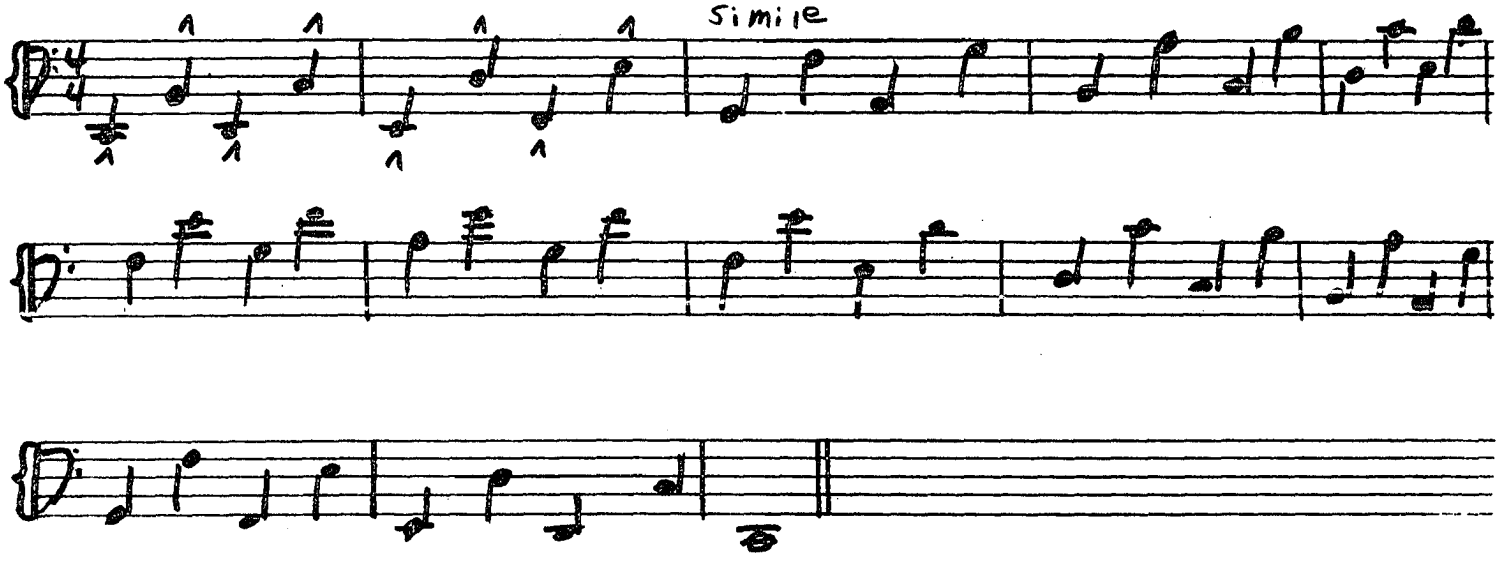
Interval of a 5th, alternating right and left toes.



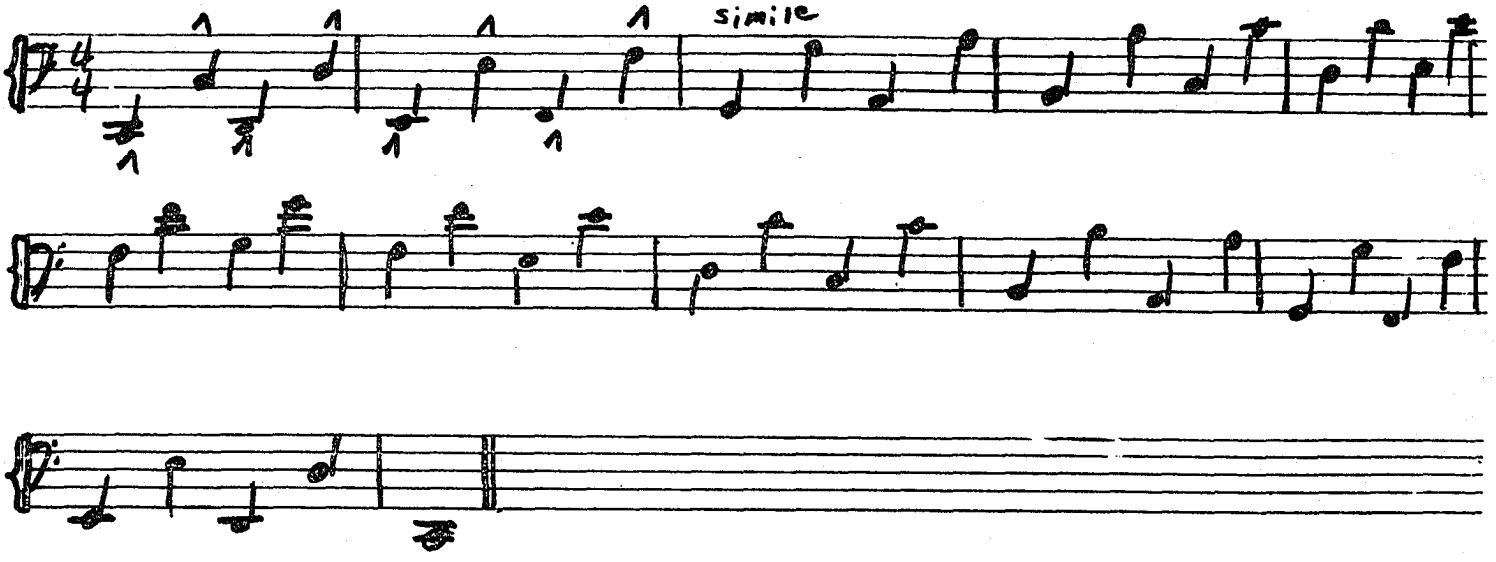
Interval of a 6th, alternating right and left toes.

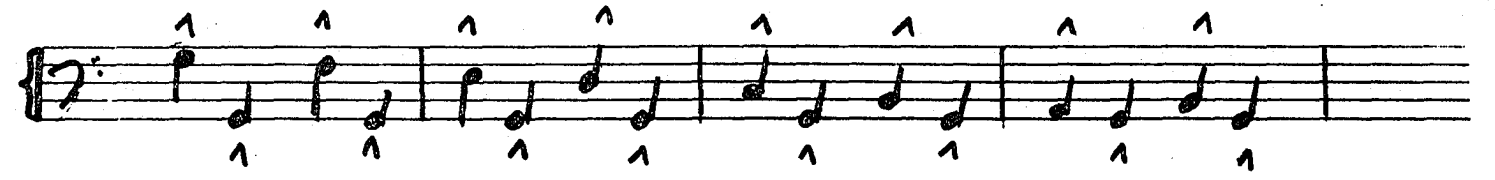


Interval of a 7th, alternating right and left toes.



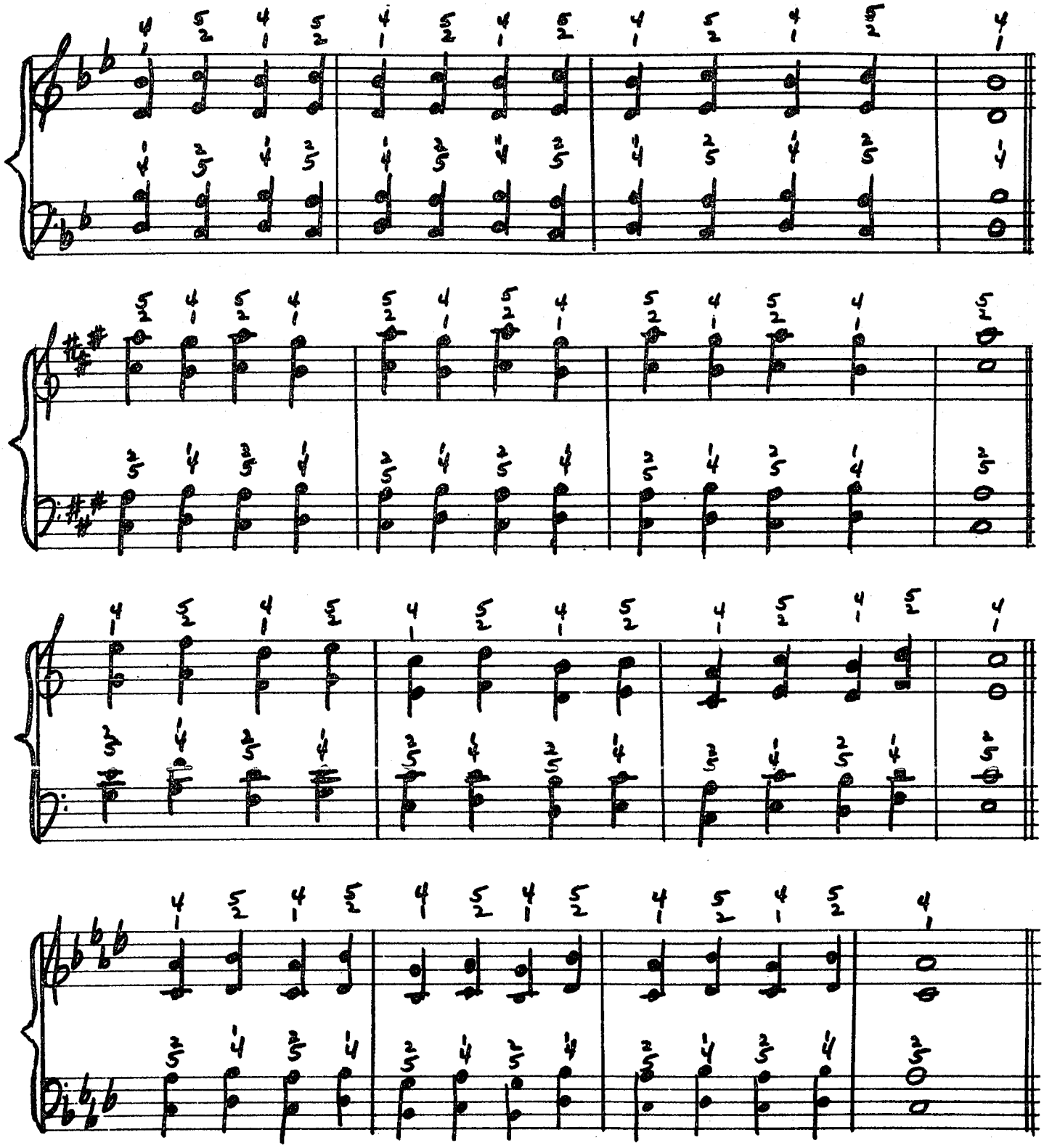
Interval of an octave, alternating right and left toes.



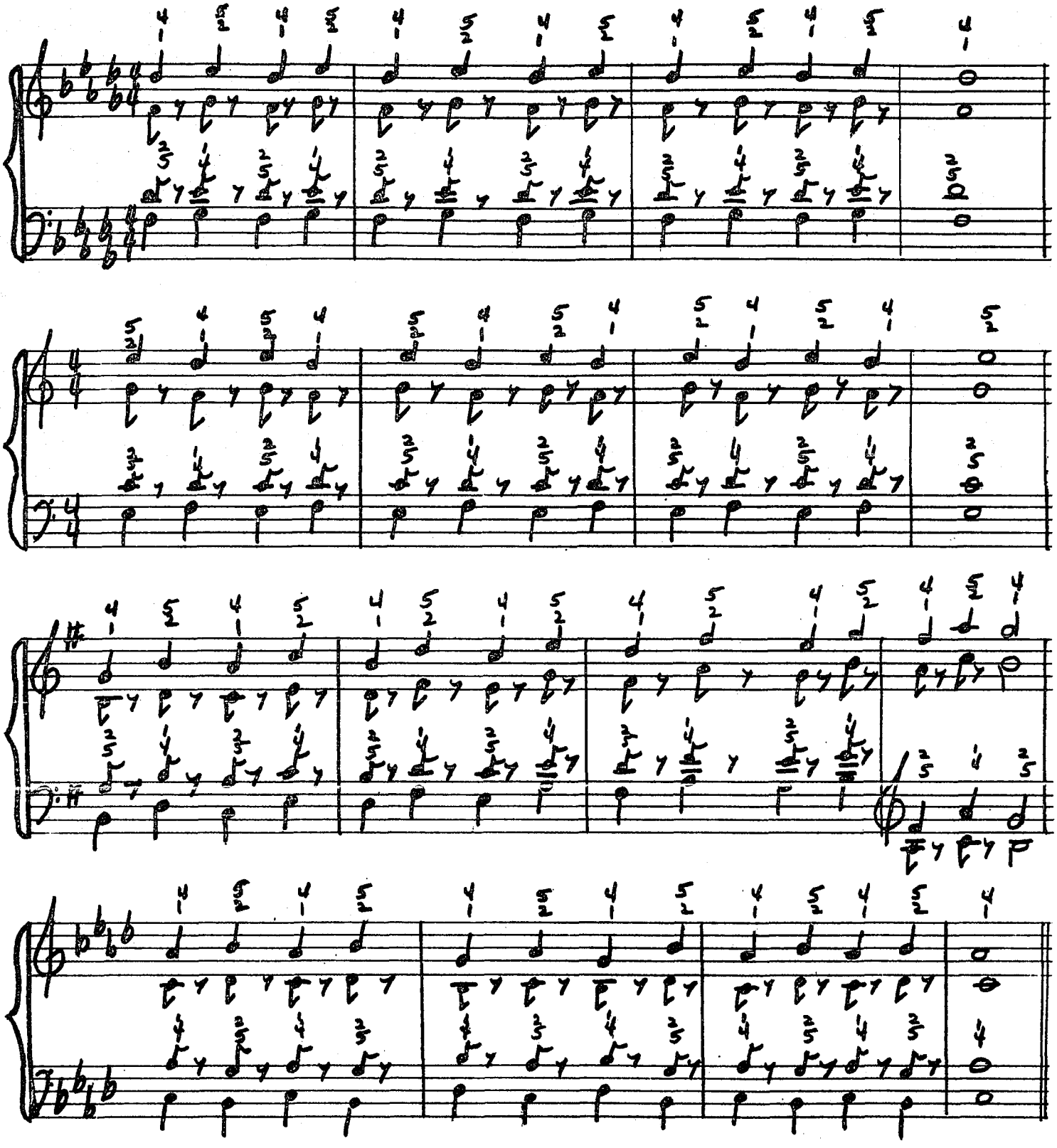


St. Anne (excerpt)

The interval of a 6th is to be played legato. Practice each hand separately using the correct fingers. Count as you play. After perfecting each hand alone, practice with hands together.



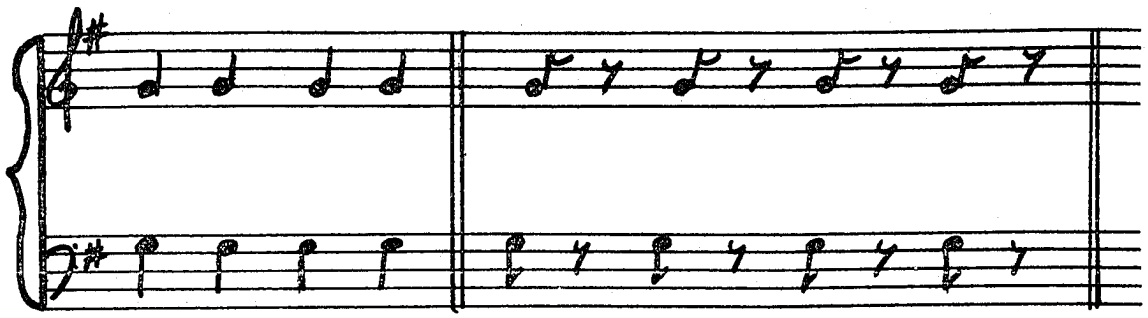
Play the soprano and bass lines legato, while detaching the alto and tenor lines. Count one-and-two-and-three-and-four-and. Be sure the alto and tenor lines are released on and. Use the proper fingers.



Playing a repeated note requires the learning of another basic organ technique. The attack and release of the organ key must be made in the proper rhythm.

The value of the 1st note will be less (followed by a rest) so that the 2nd note may be played as written.

Written like this: Played in this manner:



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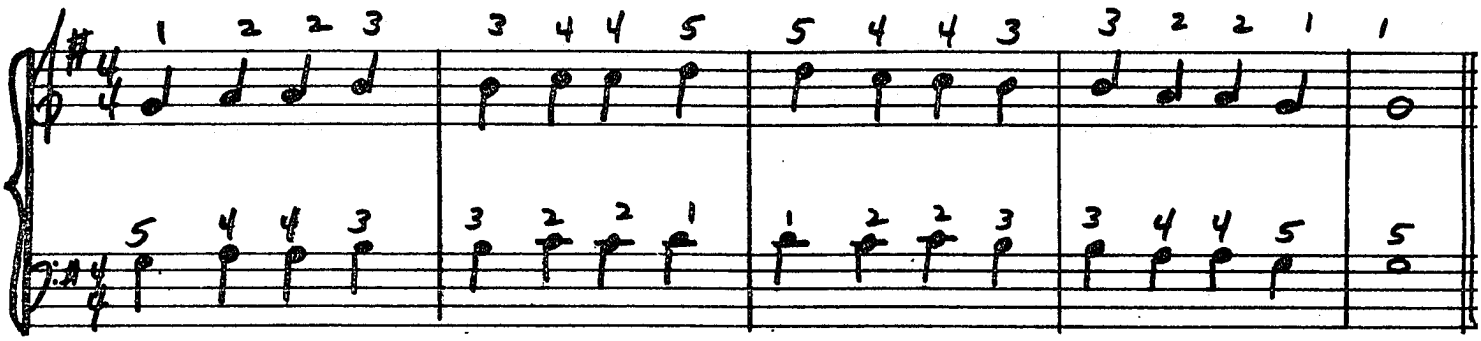
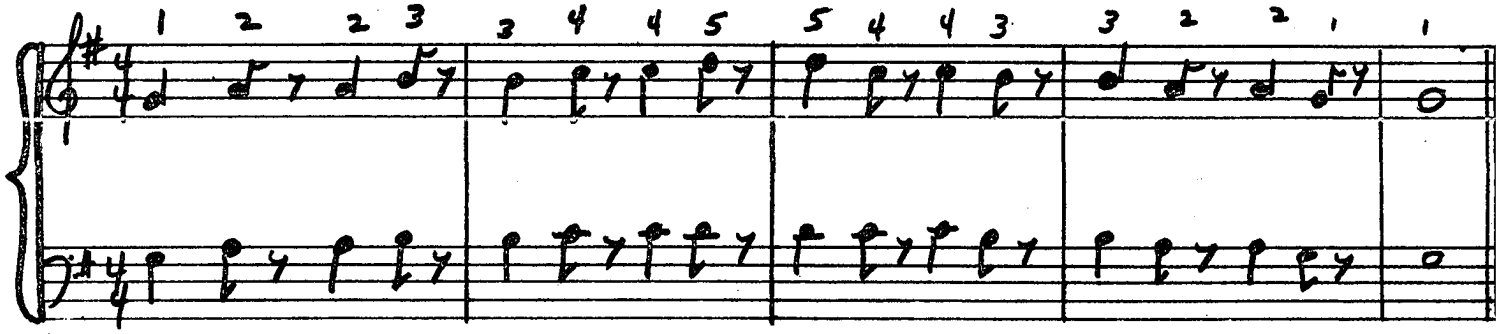
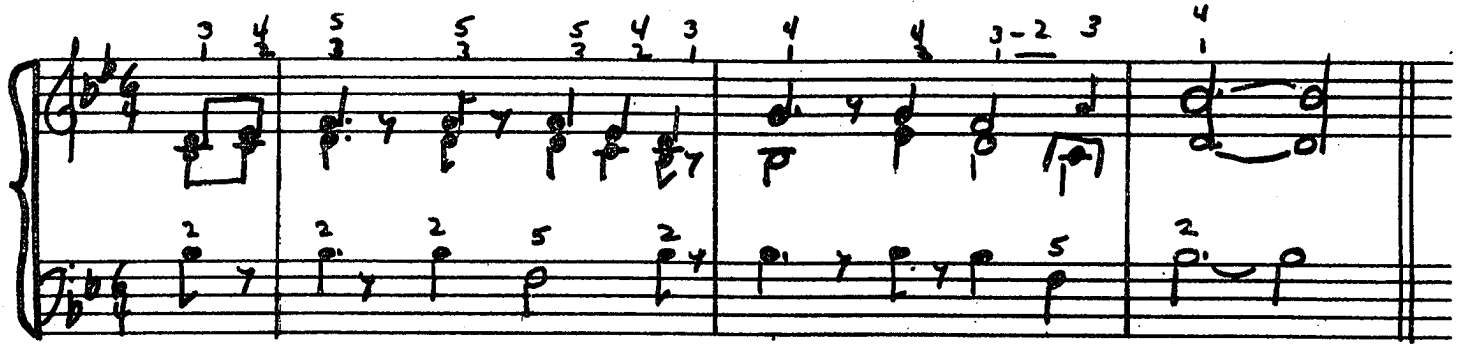


Played like this:



Retreat (excerpt)



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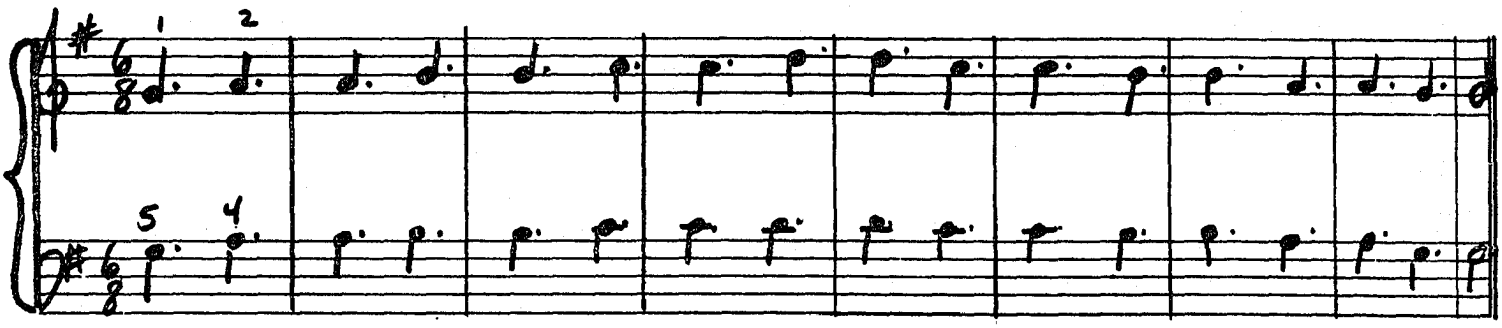

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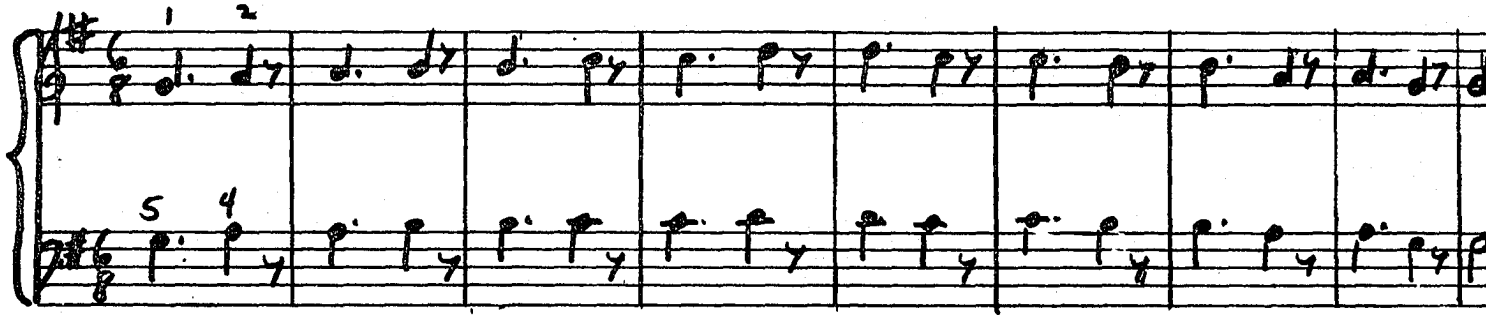
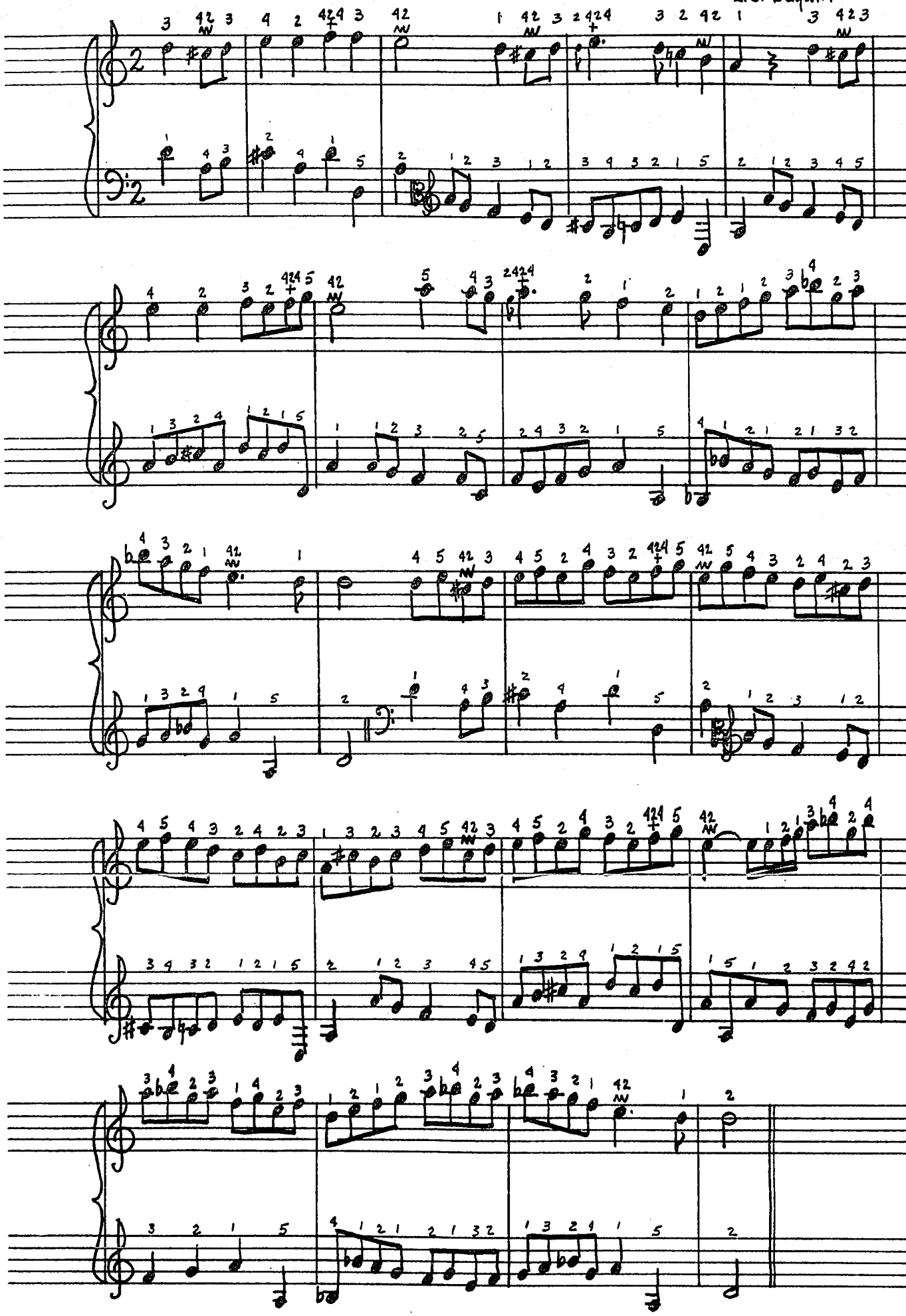


Love Divine

Noel

L.C. Daquin

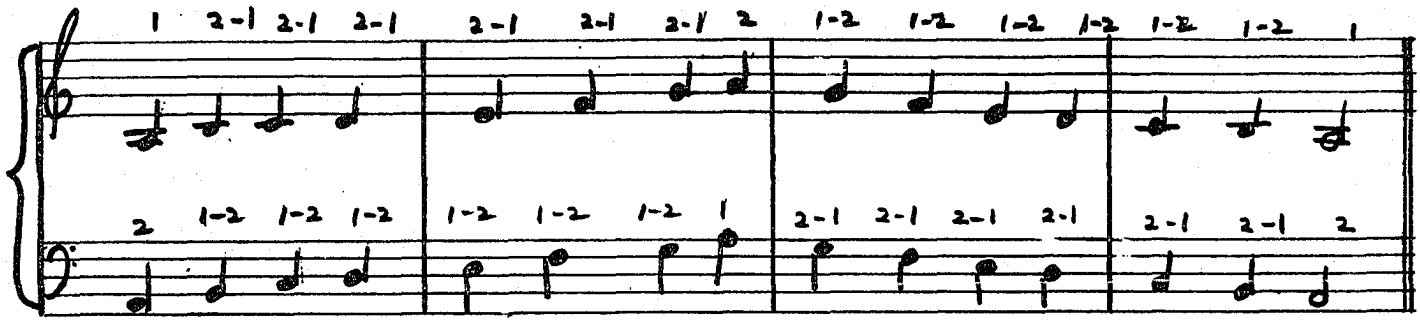


LESSON III

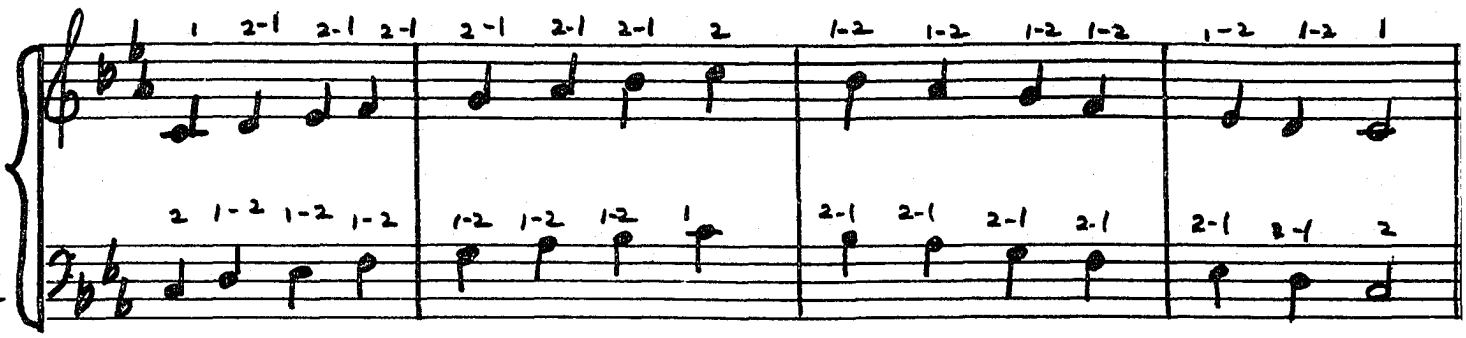
LESSON THREE

Play the following scales in a legato manner.

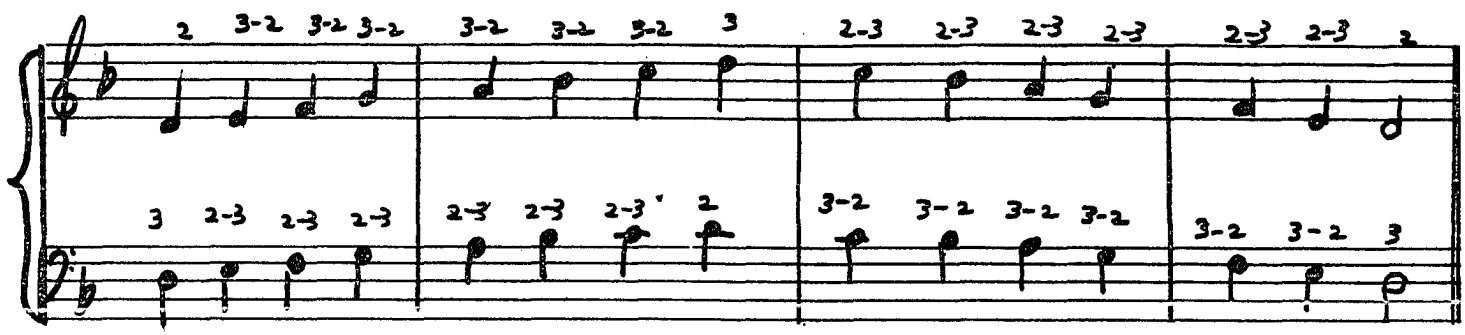
a minor scale, using 1st & 2nd fingers



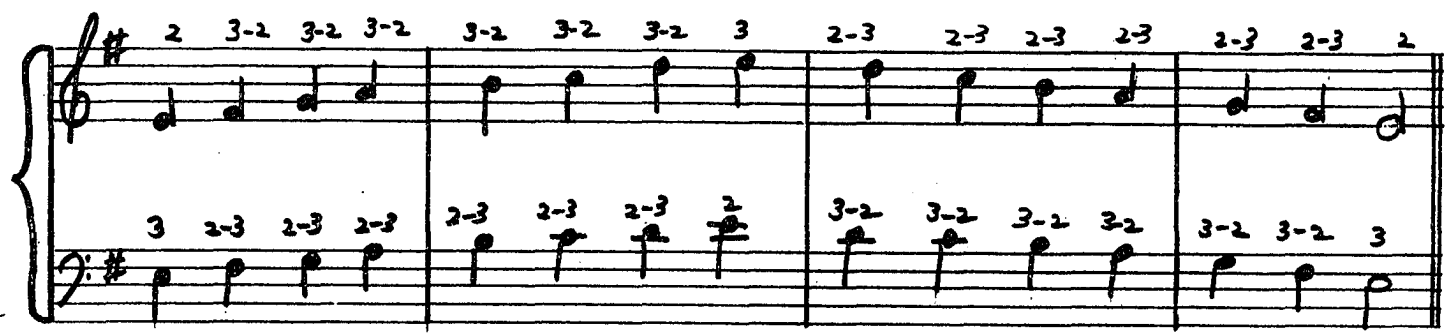
c minor scale, using 1st & 2nd fingers



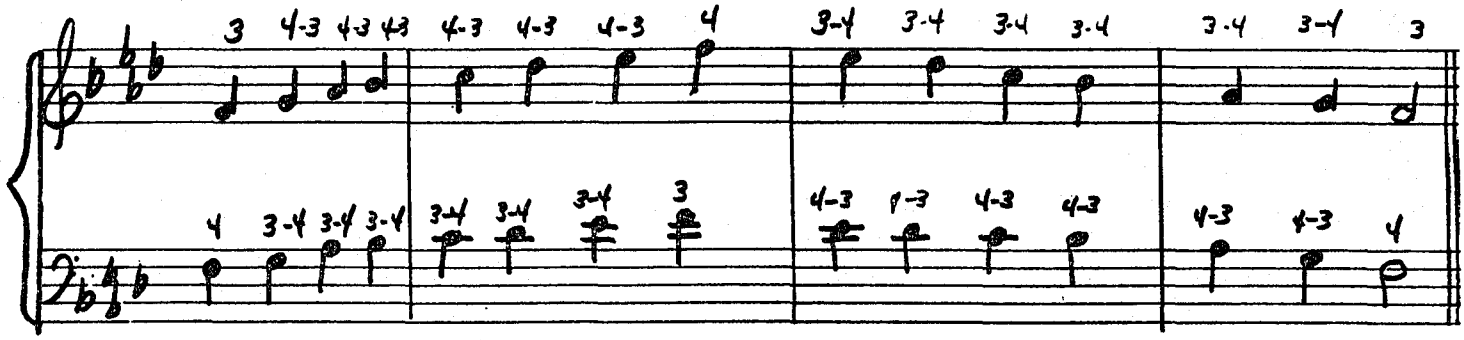
d minor scale, using 2nd & 3rd fingers



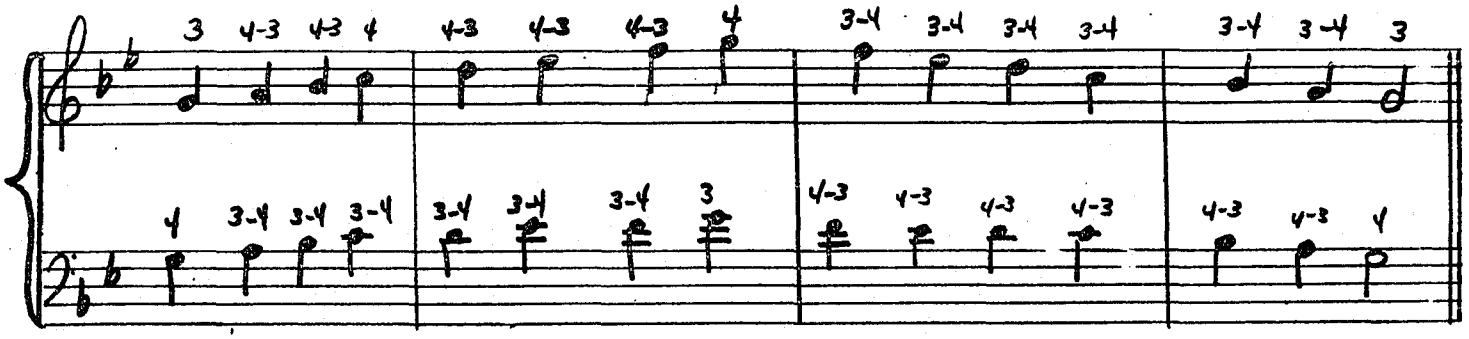
e minor scale, using 2nd & 3rd fingers



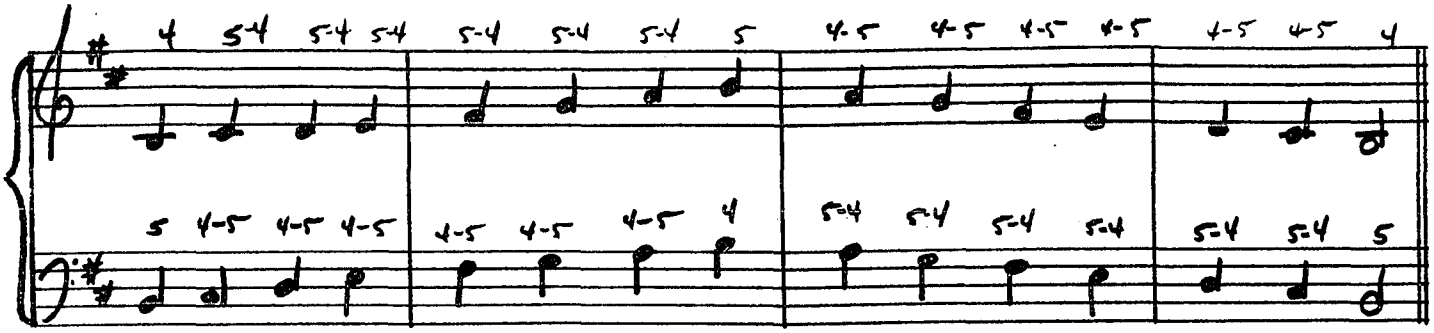
f minor scale, using 3rd & 4th fingers



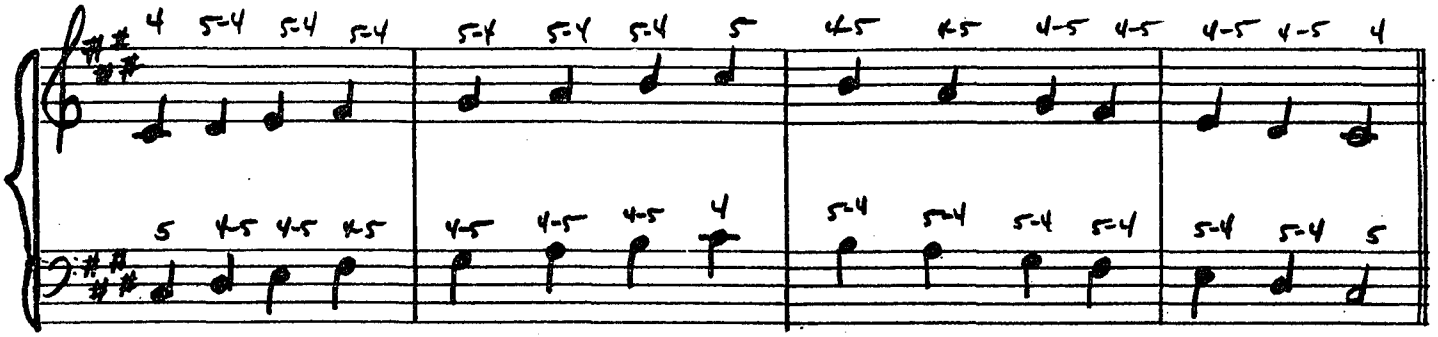
g minor scale, using 3rd & 4th fingers



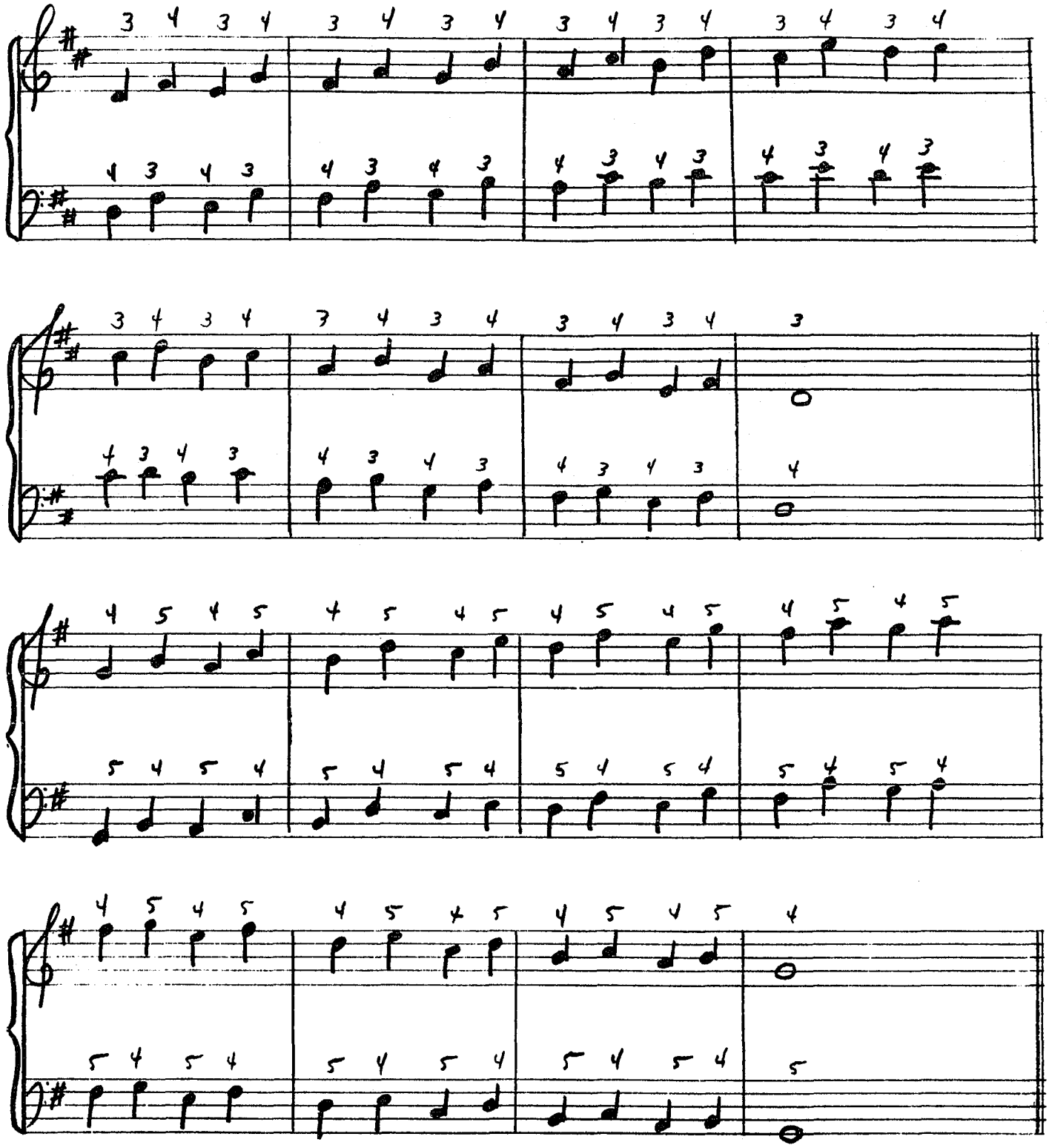
b minor scale, using 4th & 5th fingers

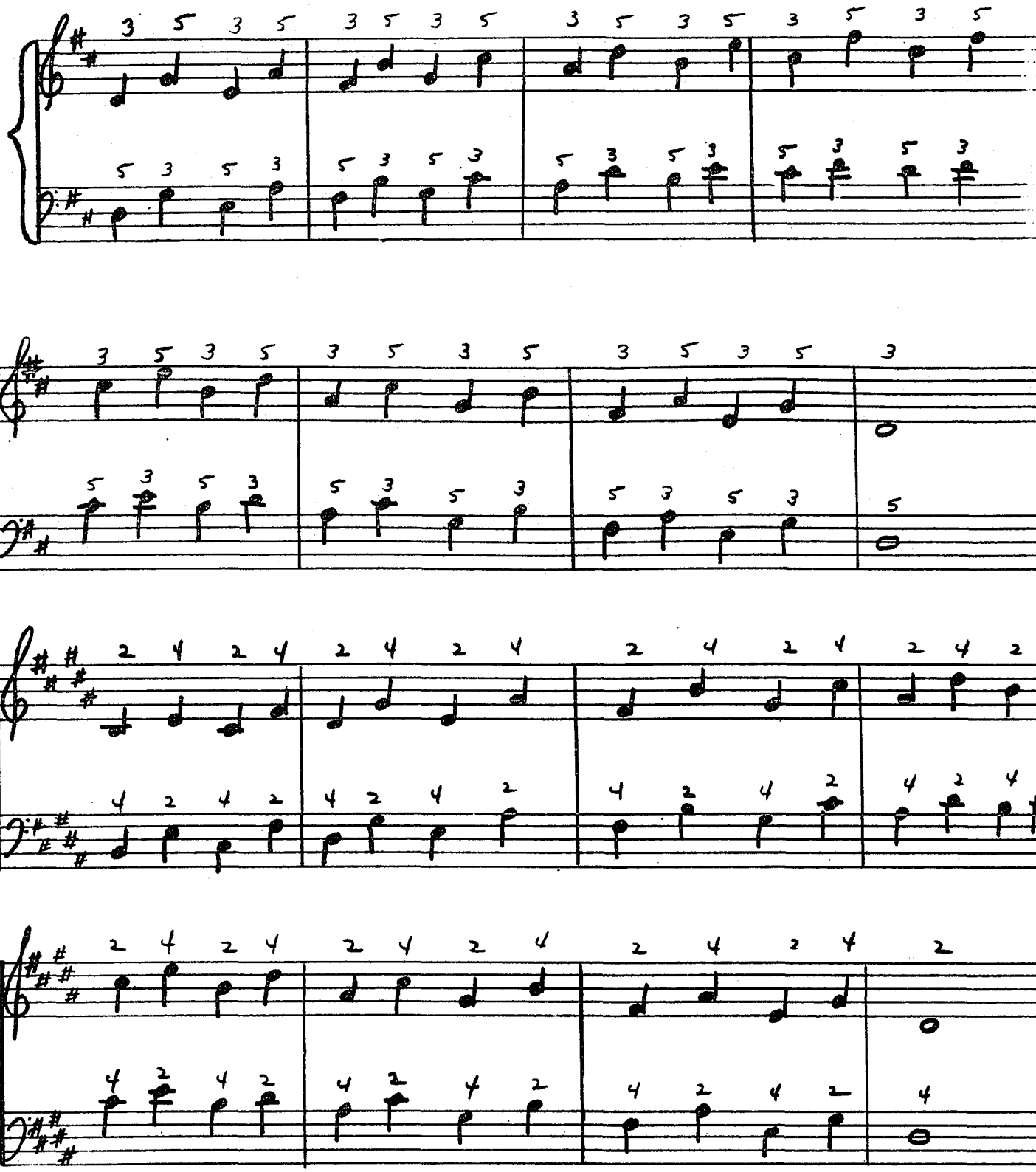


c# minor scale, using 4th & 5th fingers

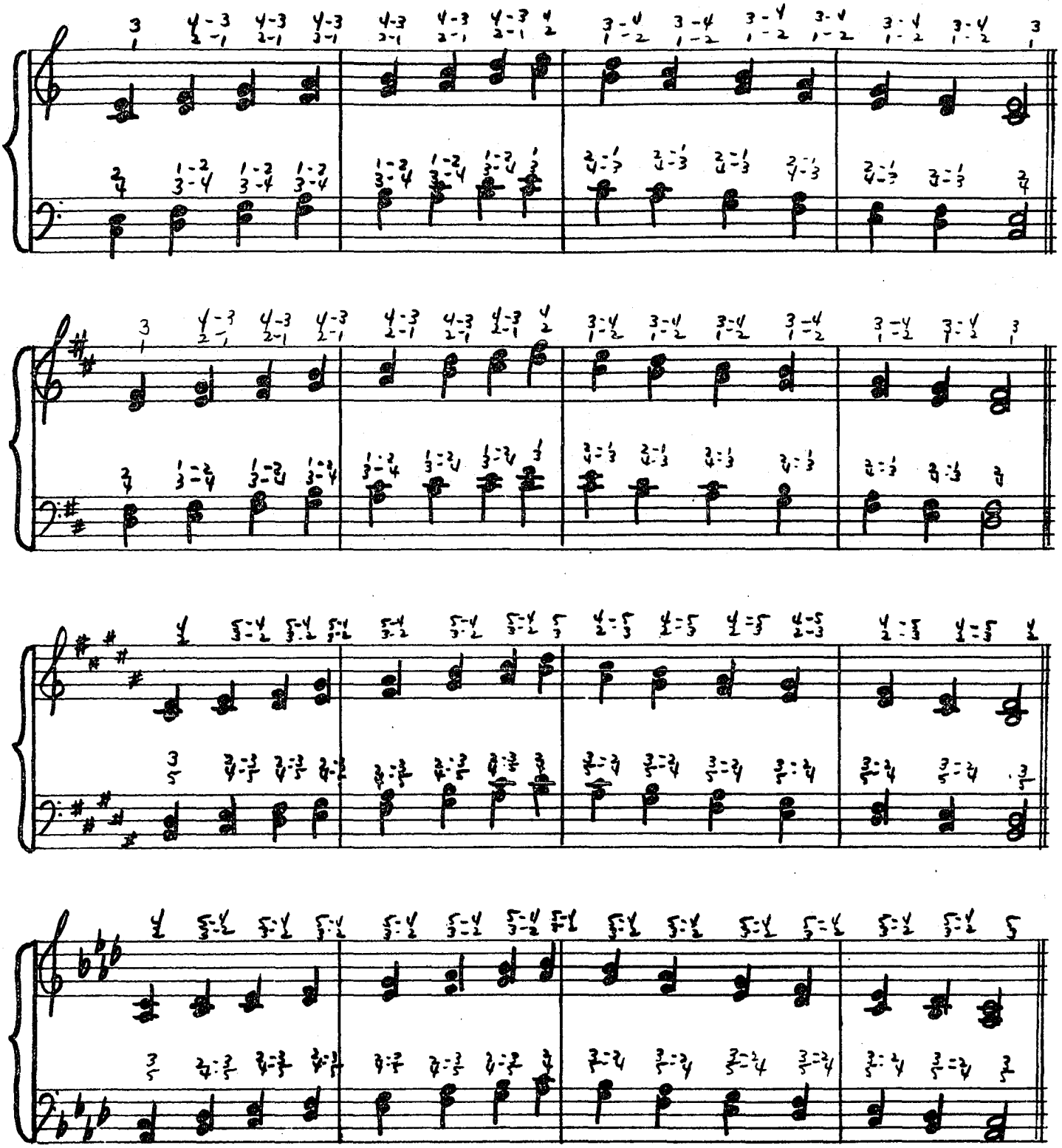


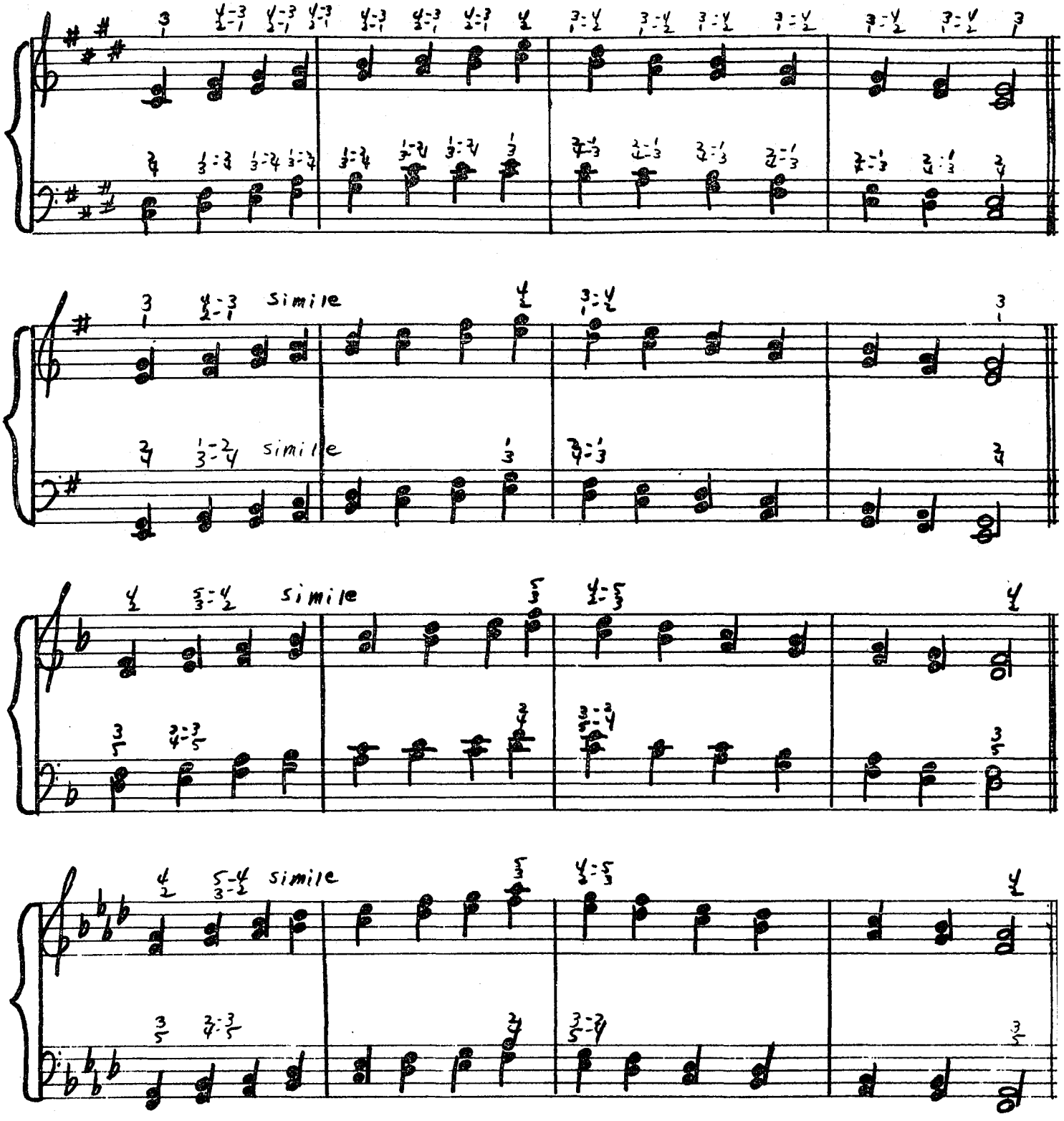
Practice this finger extension exercise very slowly.
Keep the back of the hand as level as possible.





Double Substitution in 3rds




simile
simile
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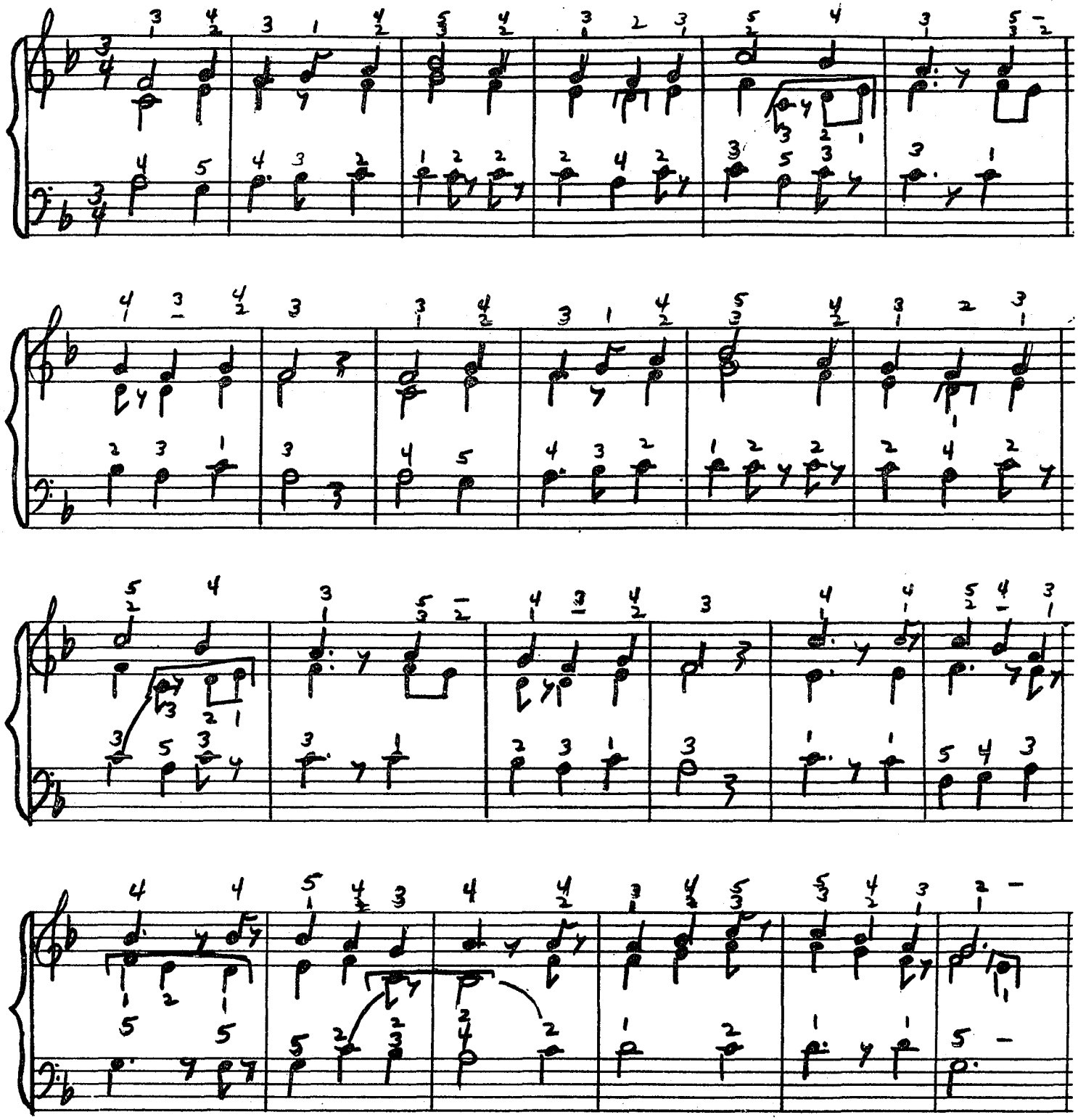
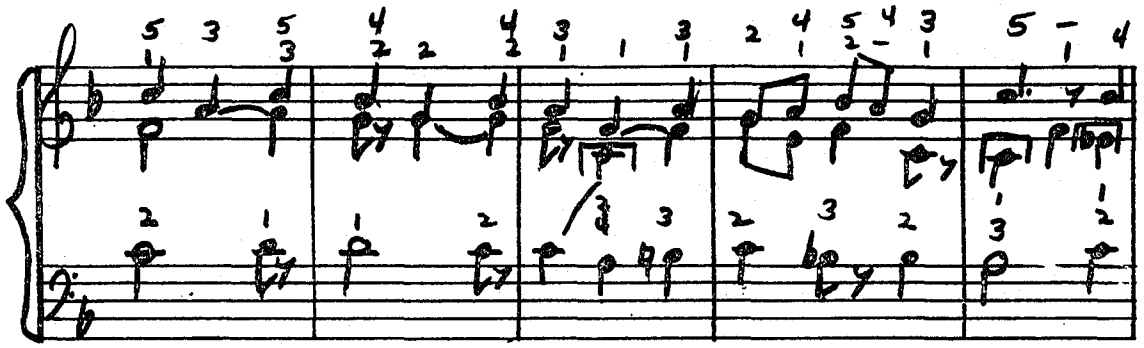
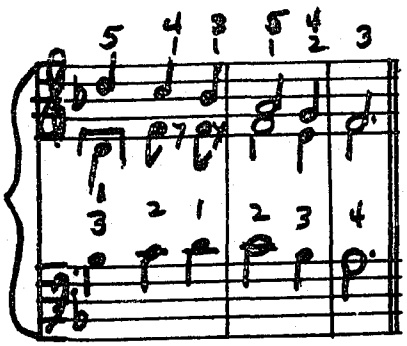
simile

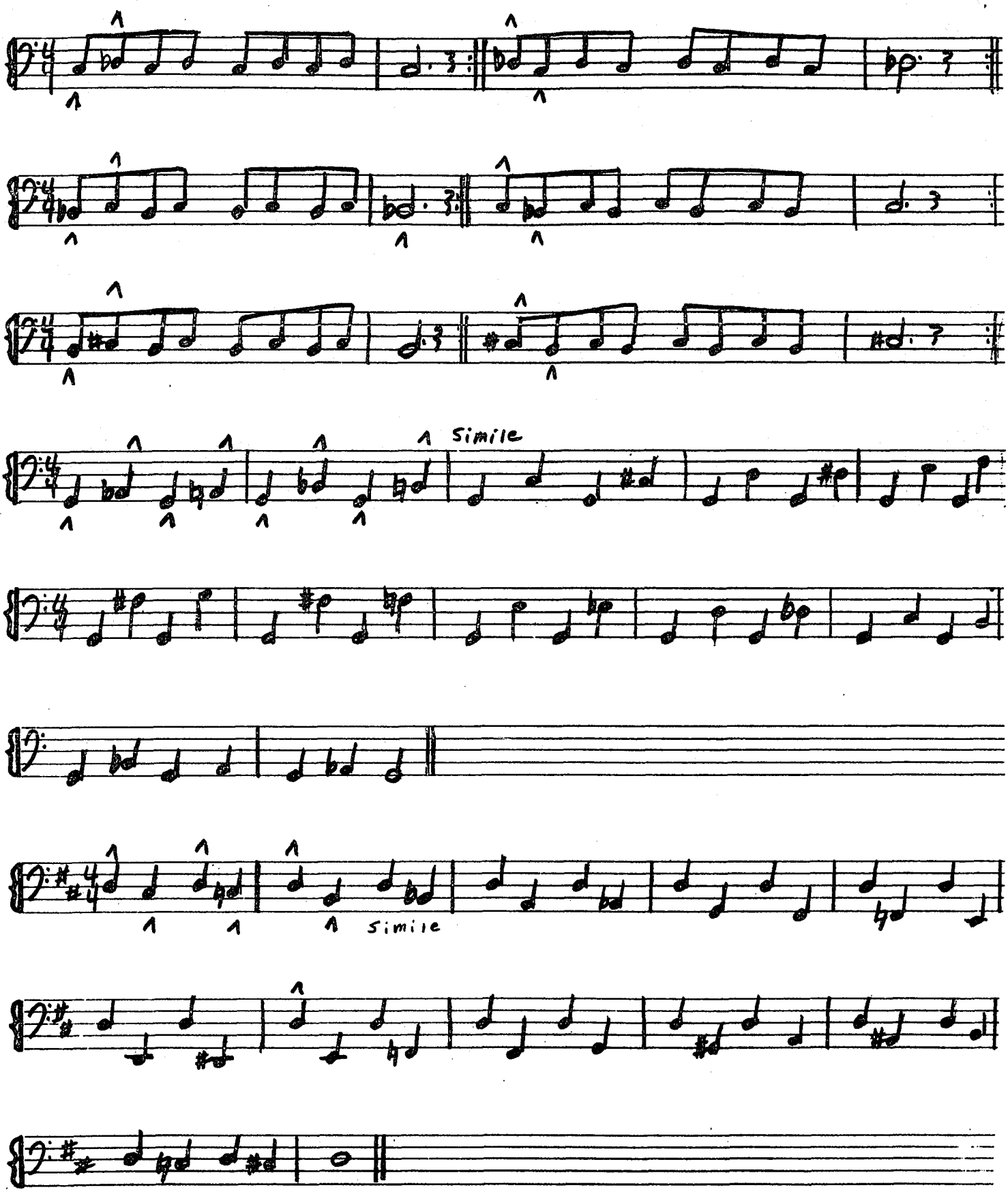
Hyfrydol — Roland H. Prichard

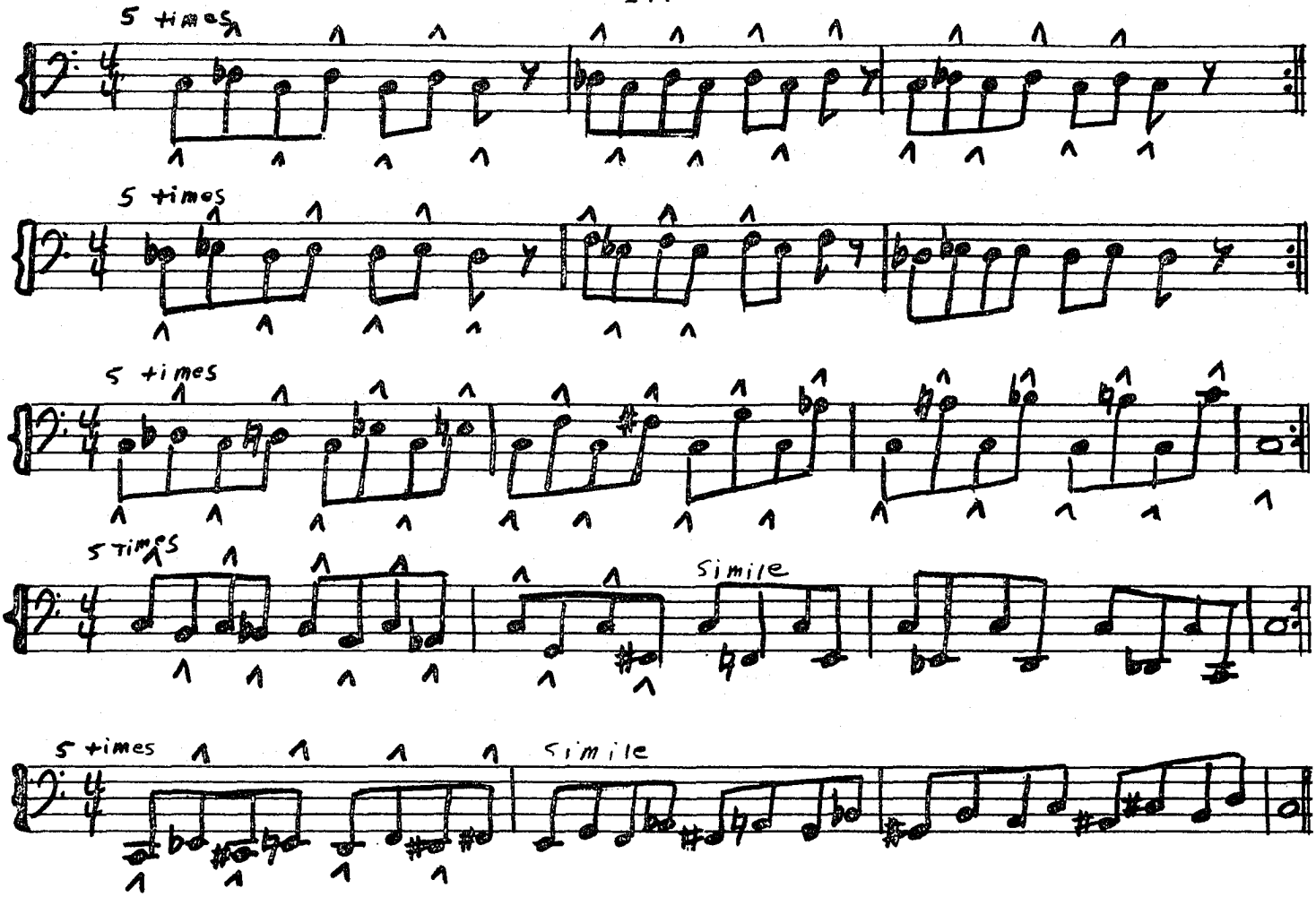






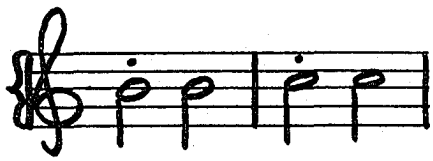
Alternating toes on White and Black notes.



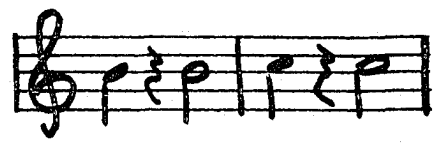

5 times
5 times
5 times
5 times
simile
5 times
simile

The dot placed over a note takes away exactly half its value:

Written:



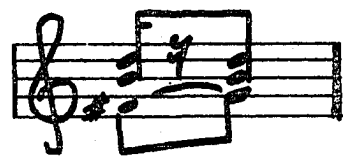
Played:



Several dots placed one above another refers to several voices on the same stave:

Written:

Played:



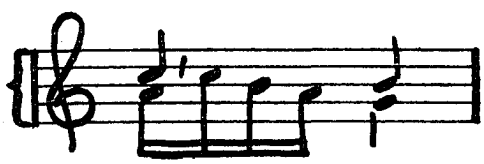
A comma is used in regard to a whole chord placed on the staff:

Written:

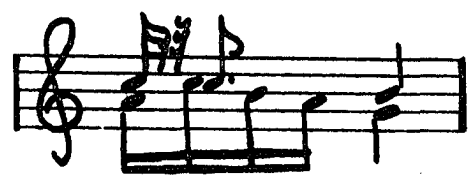
Played:

A vertical dash between 2 notes is used when a unison has to be repeated:

Written:



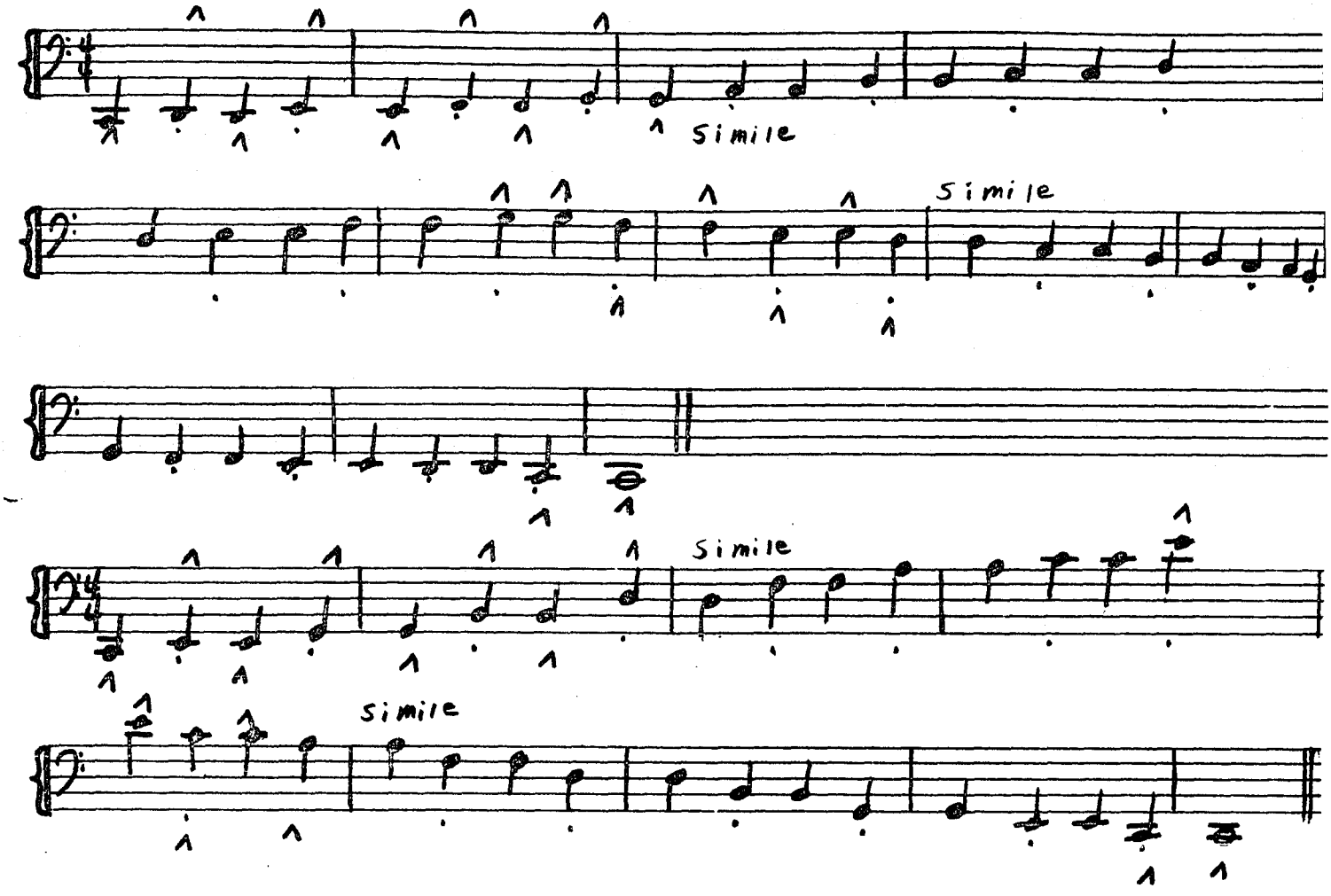
Played:



Pedal Exercises

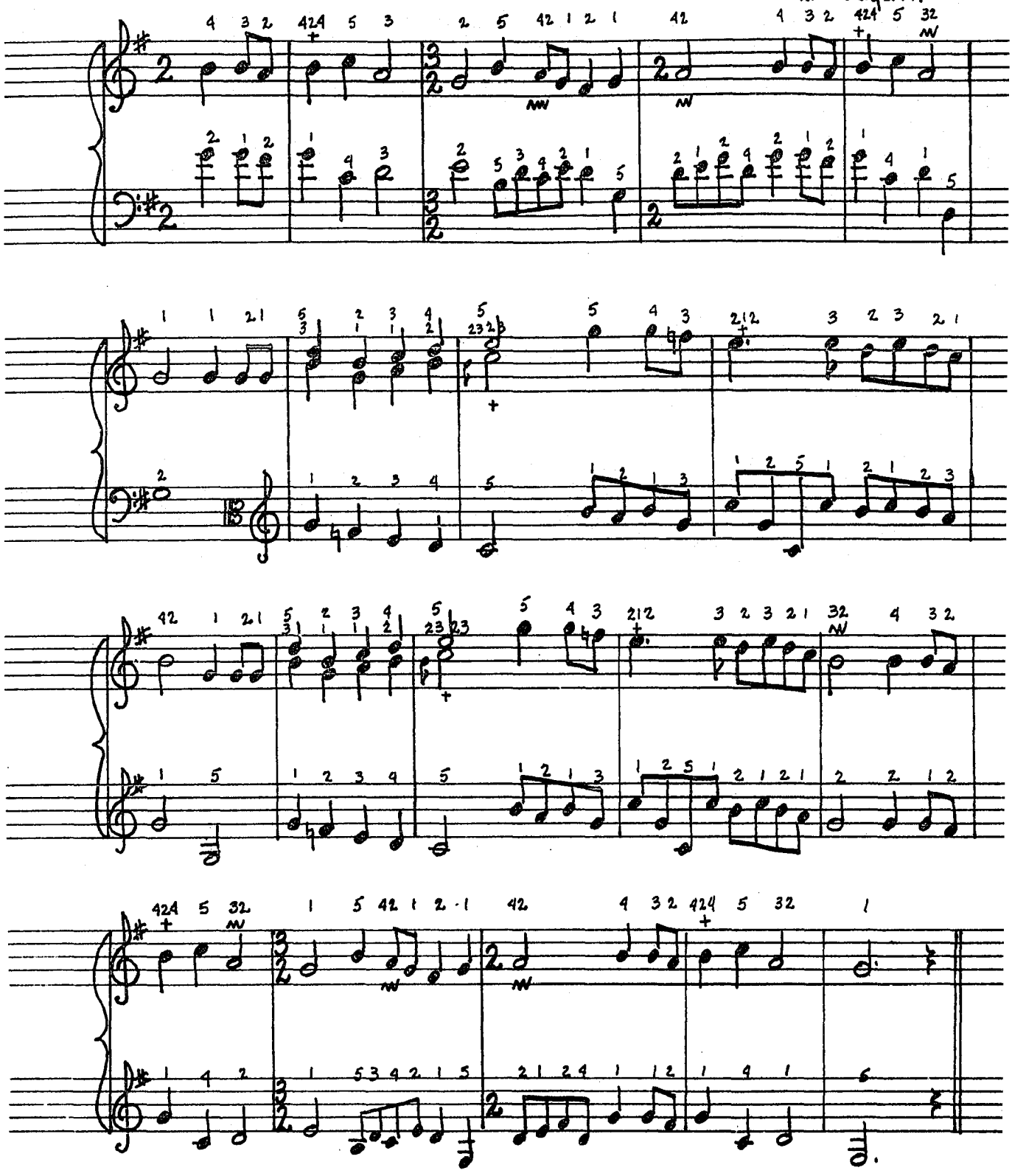
Repeated Notes

Play with precision giving the exact duration for each note and rest.



Noel

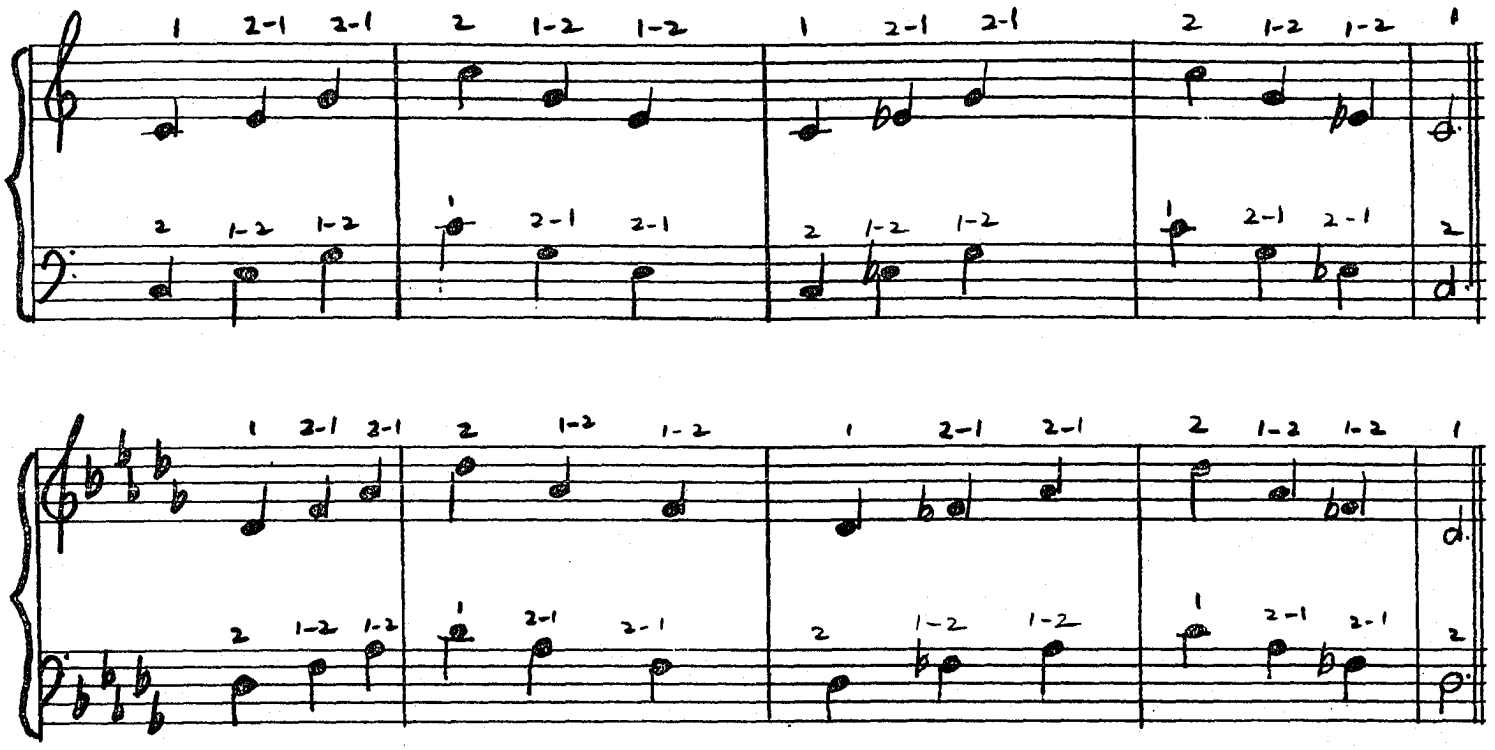
L. C. Daquin



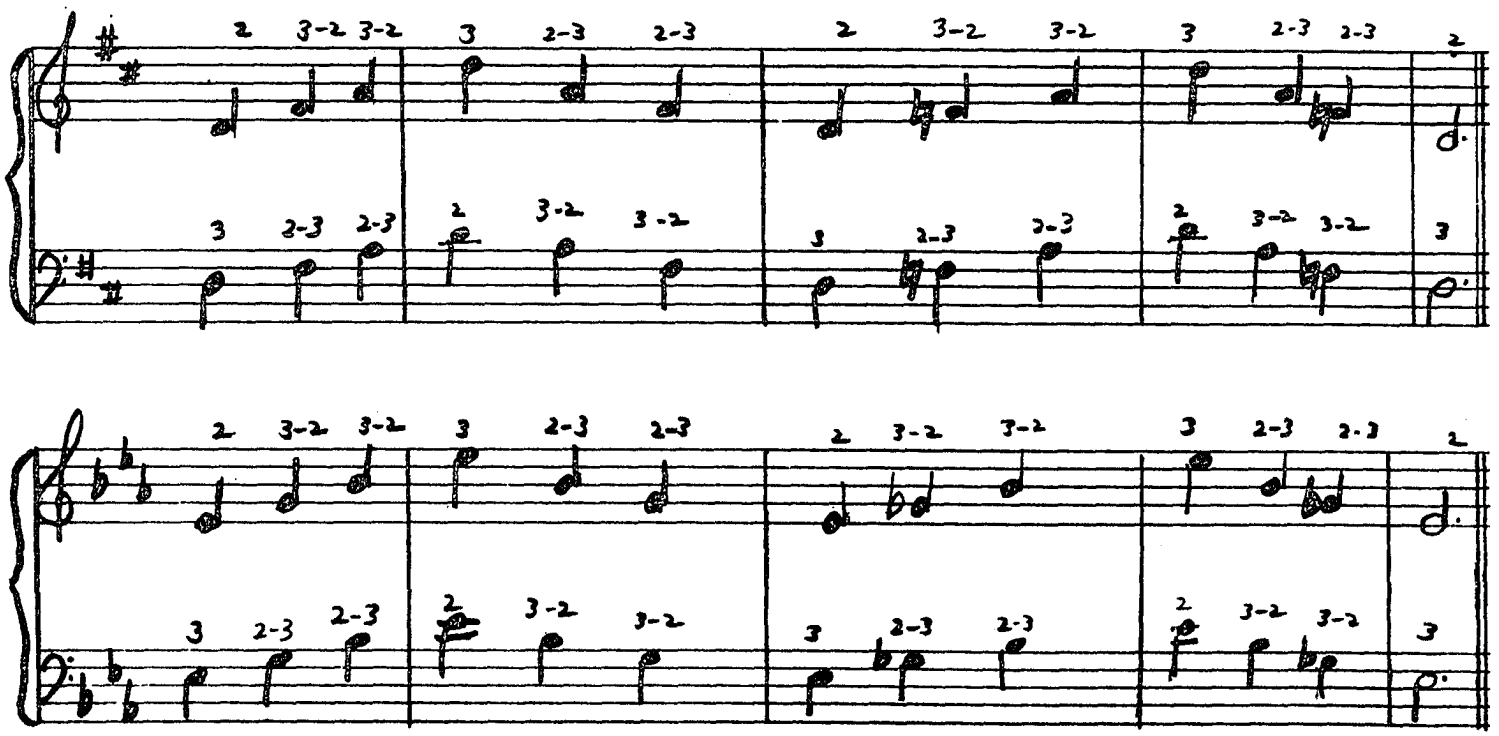
LESSON IV

Substitution for major and minor broken triads

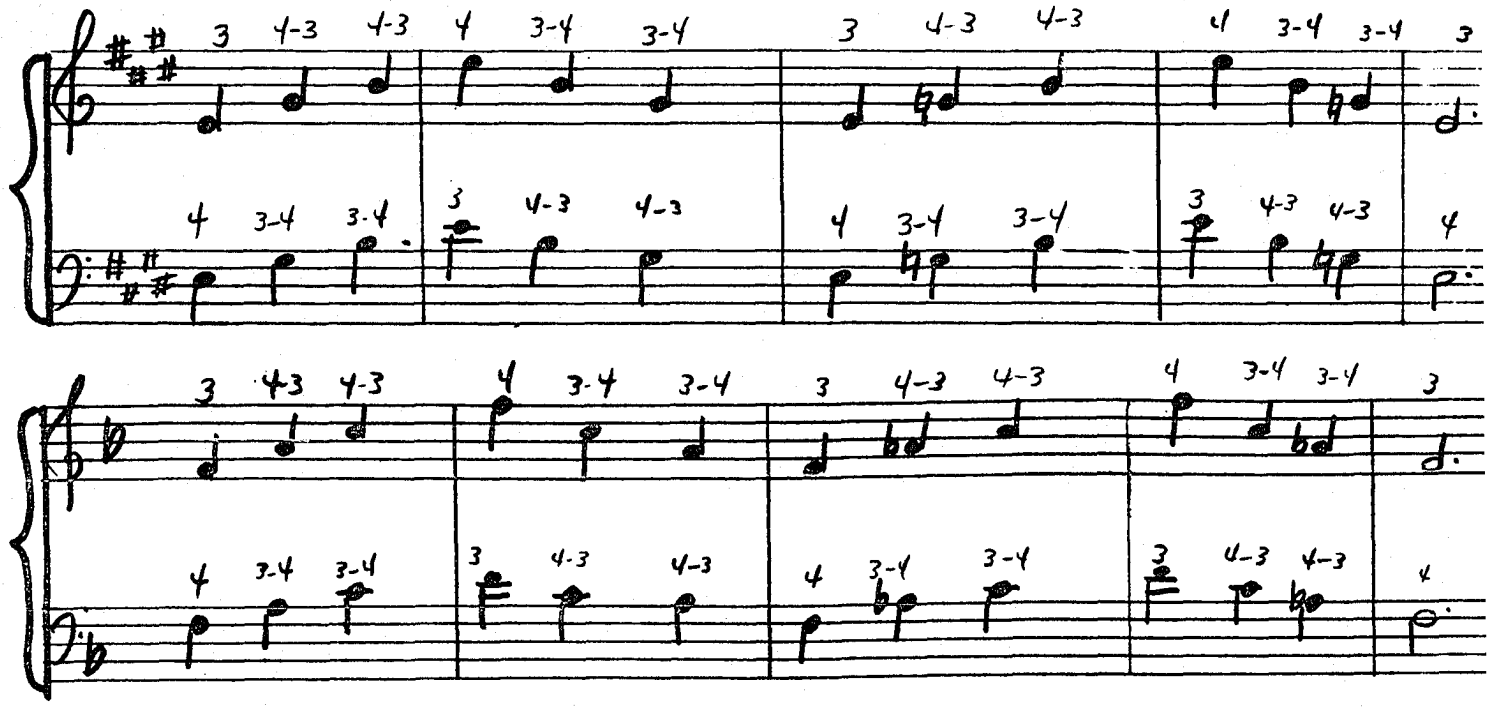
Using 1st and 2nd fingers



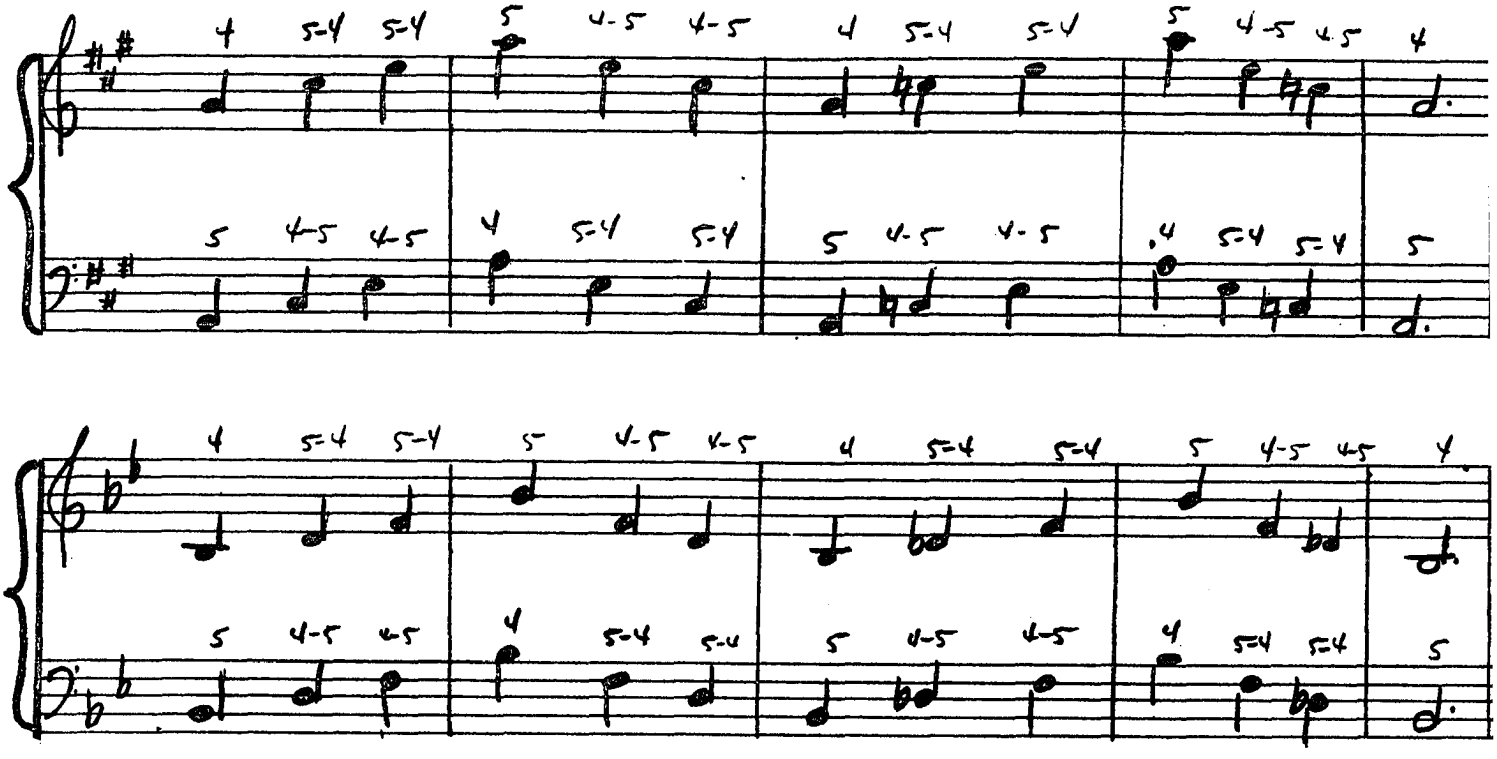
Using 2nd and 3rd fingers



Using 3rd and 4th fingers.



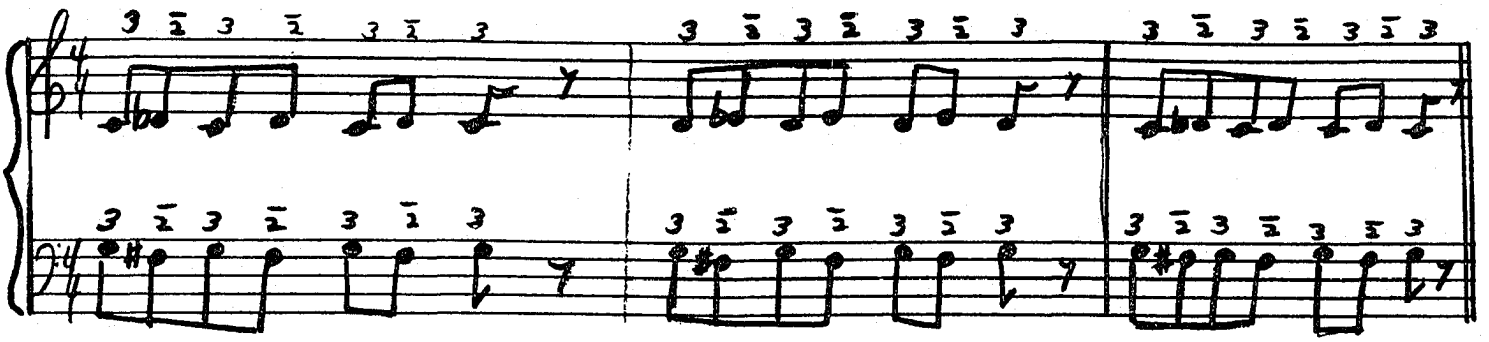
Using 4th and 5th fingers.



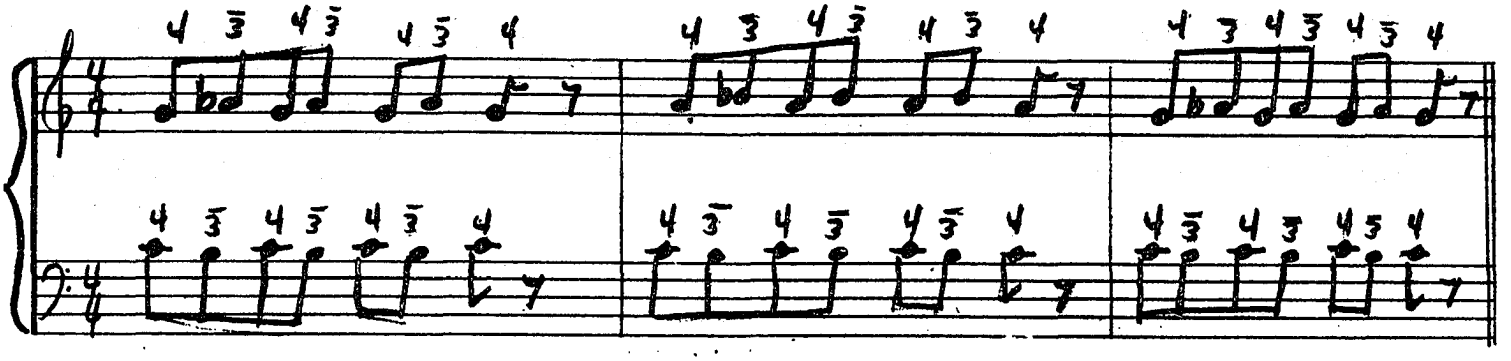
Pass one finger over another finger.

A line over the fingering ($\bar{2}$) denotes that one finger should pass over the other.

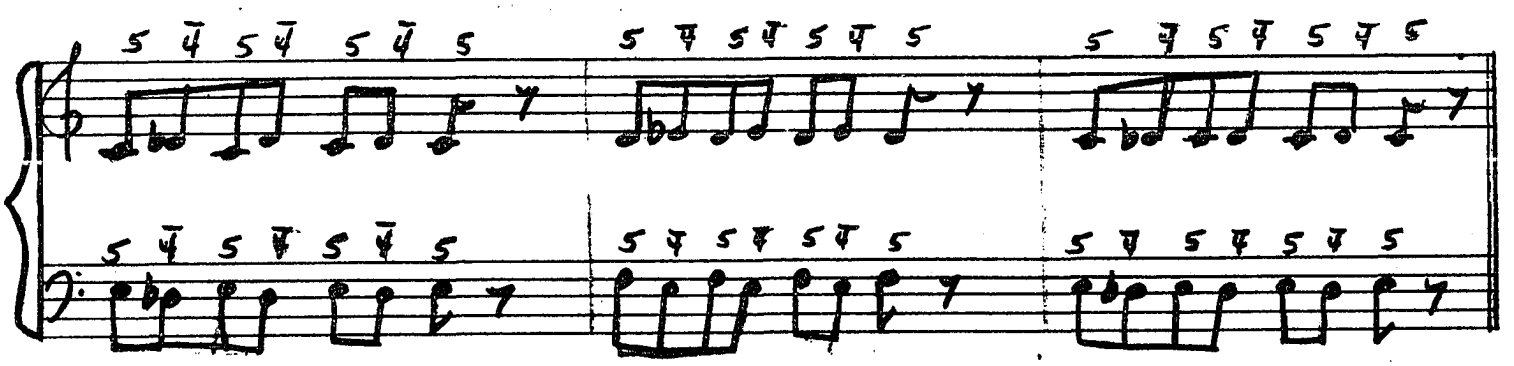
The 2nd finger passes over the 3rd finger.



The 3rd finger passes over the 4th finger.



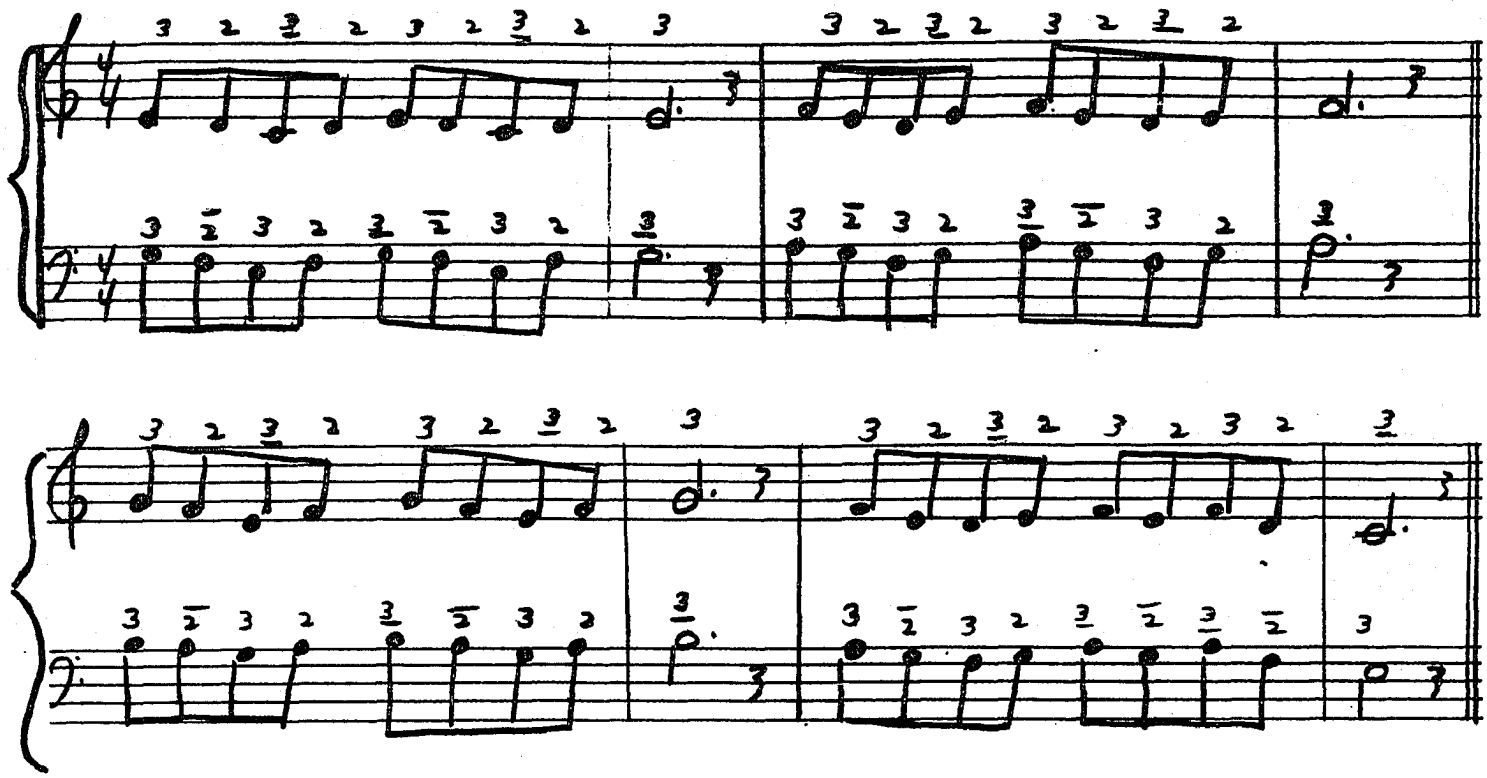
The 4th finger passes over the 5th finger.



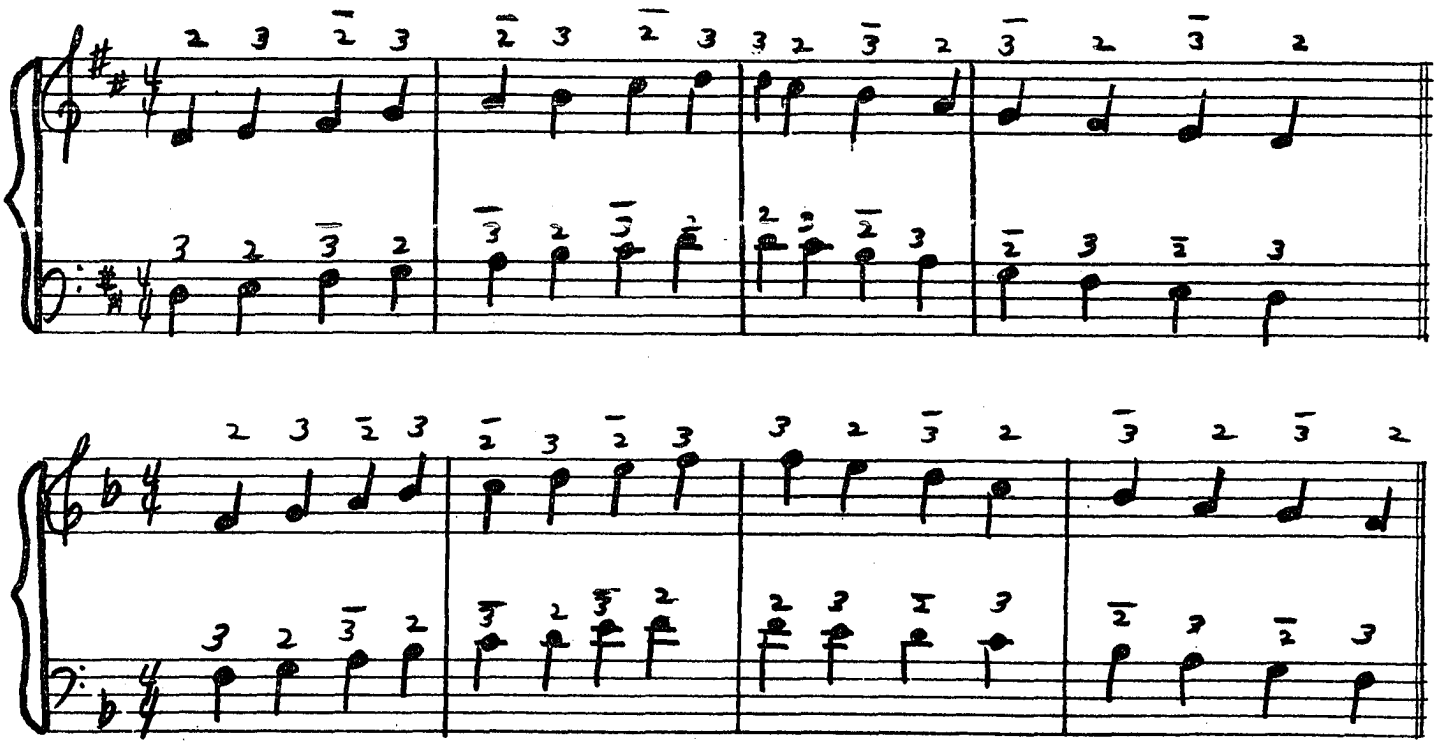
Pass one finger under another finger.

A line under the fingering (4) denotes that one finger should pass under the other.

The 3rd finger passes under the 2nd finger.

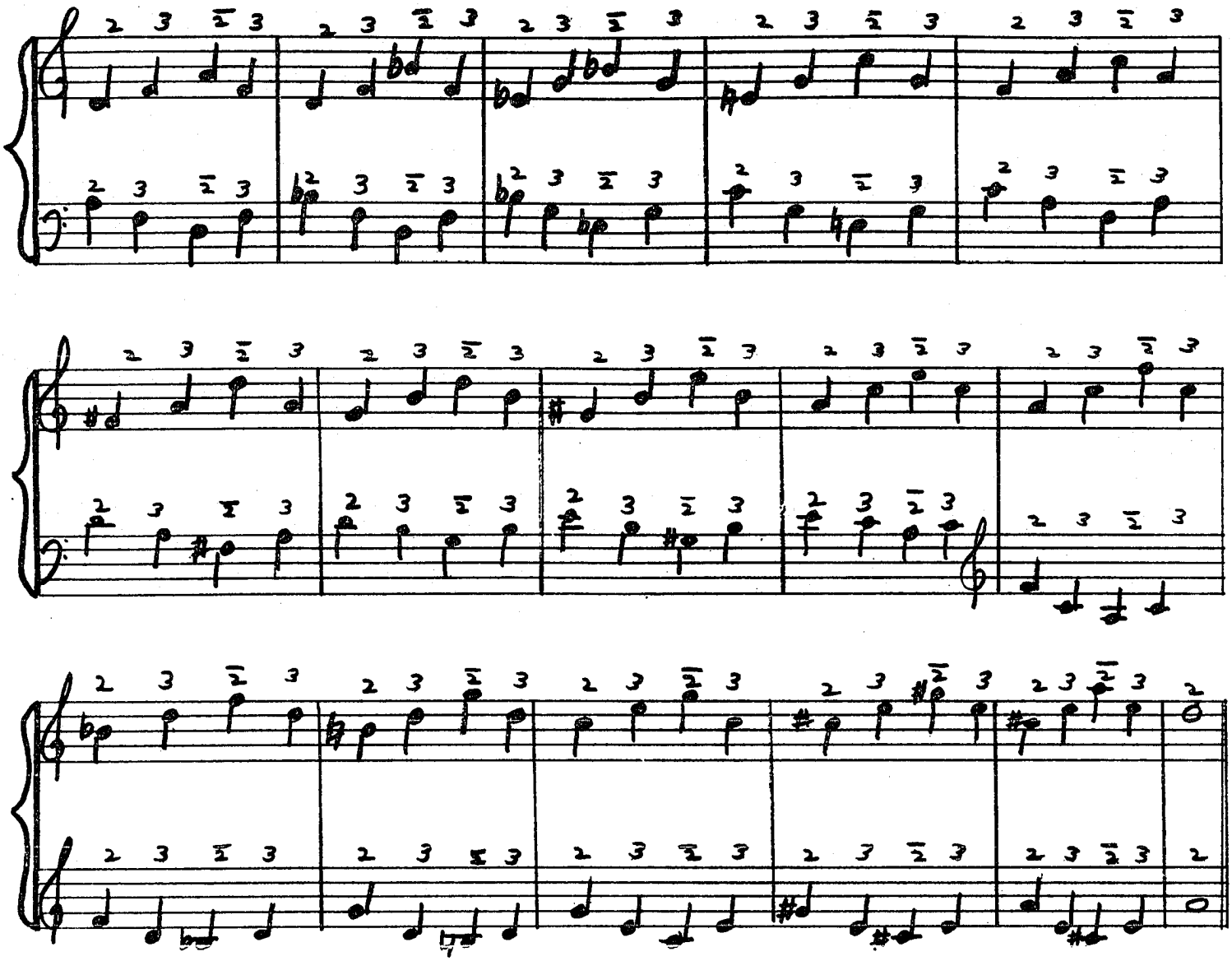


Be sure and pass the finger over in both hands.



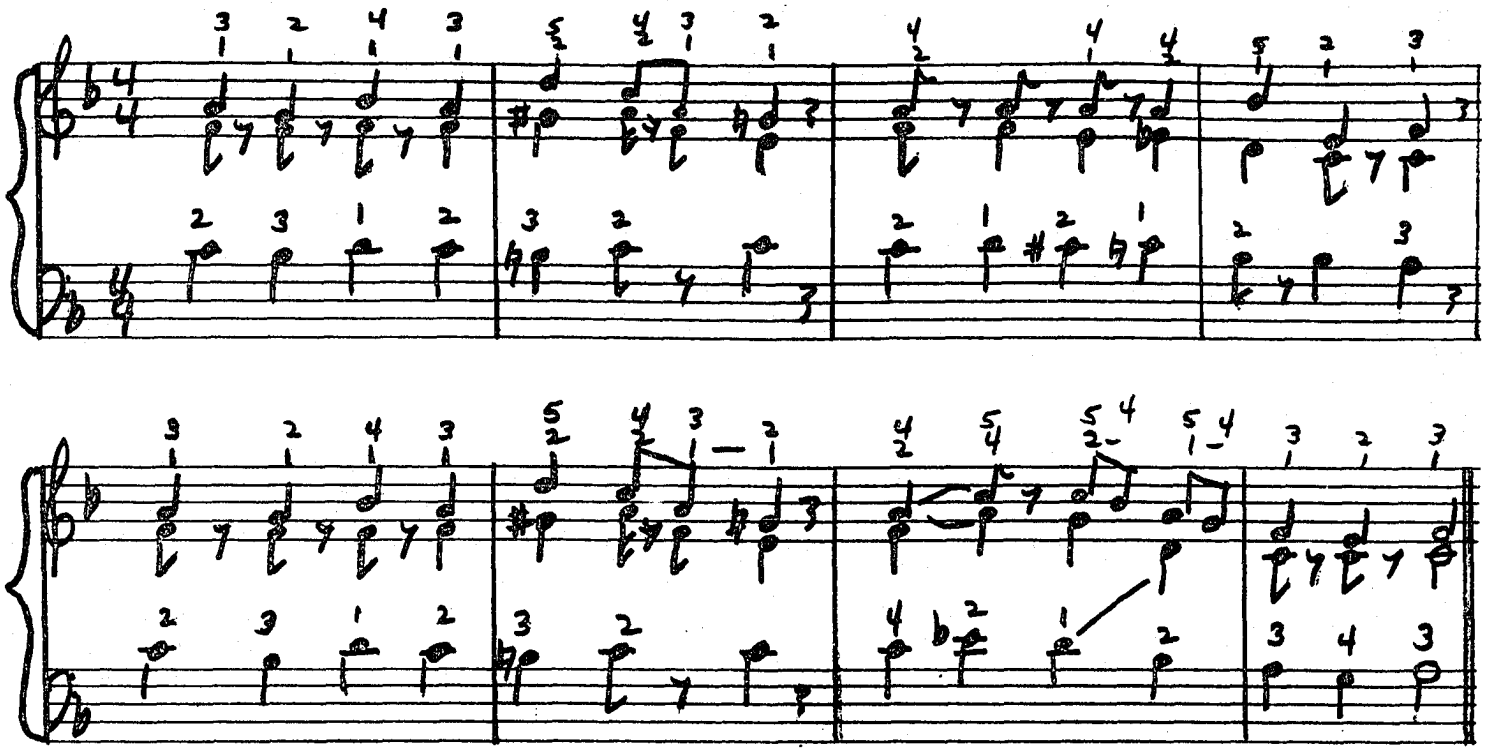
Pass one finger over another finger.

Practice hands separately and then together.



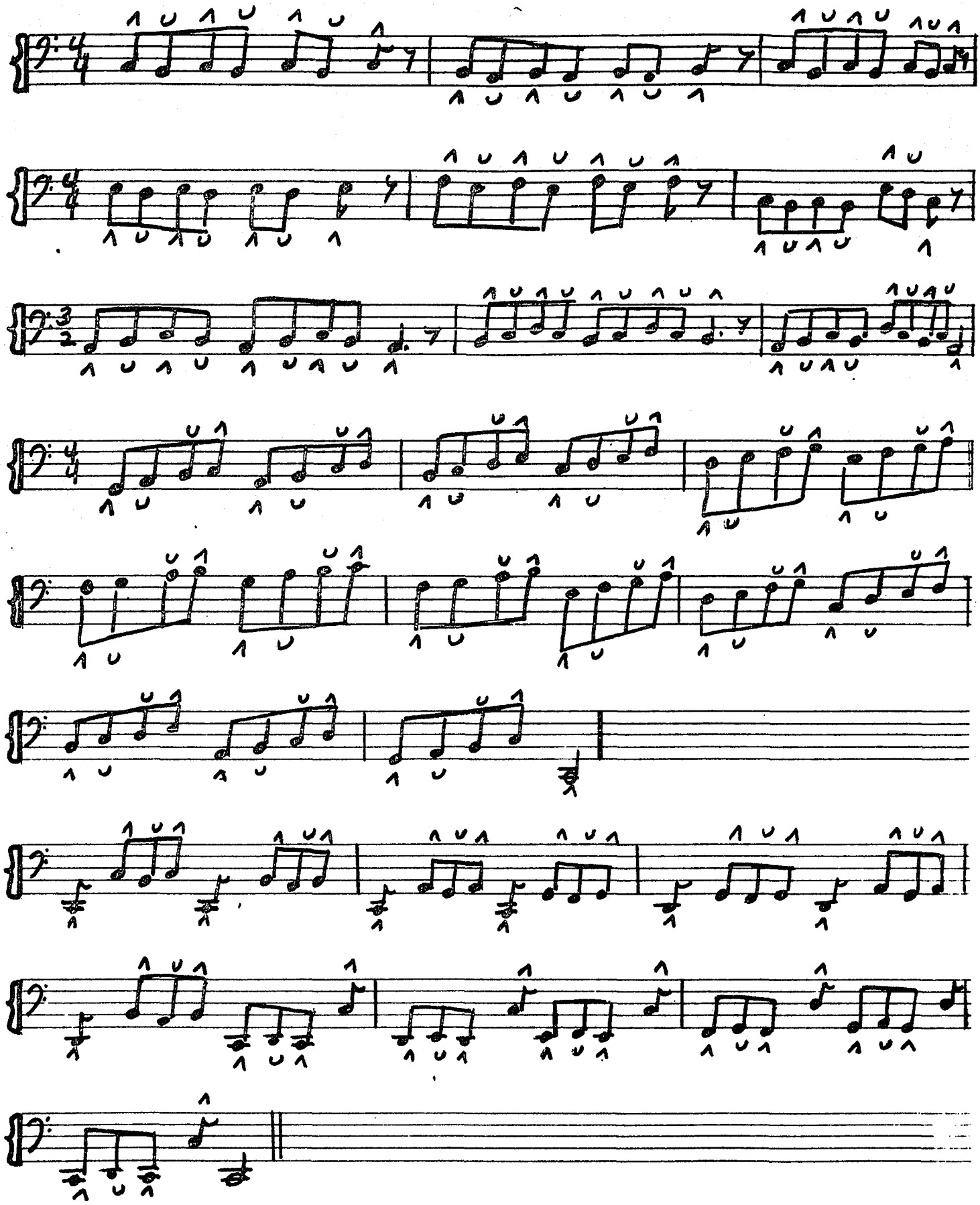
SEYMOUR Carl Maria von Weber

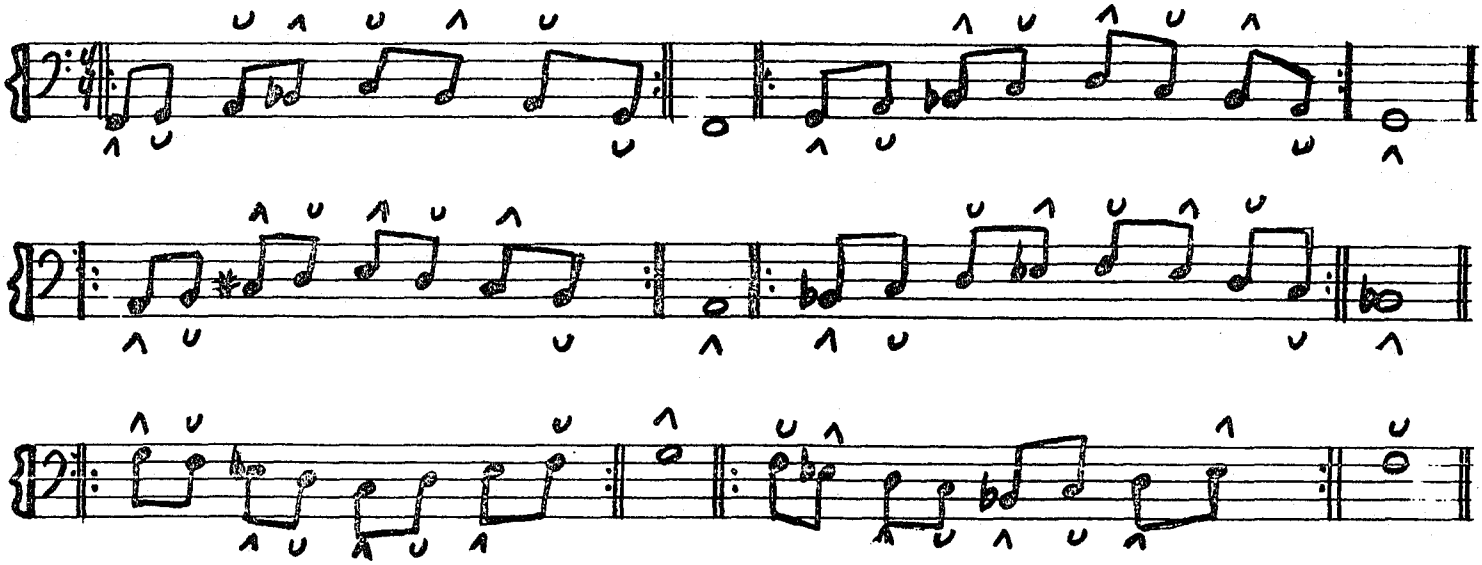
S. A. T.



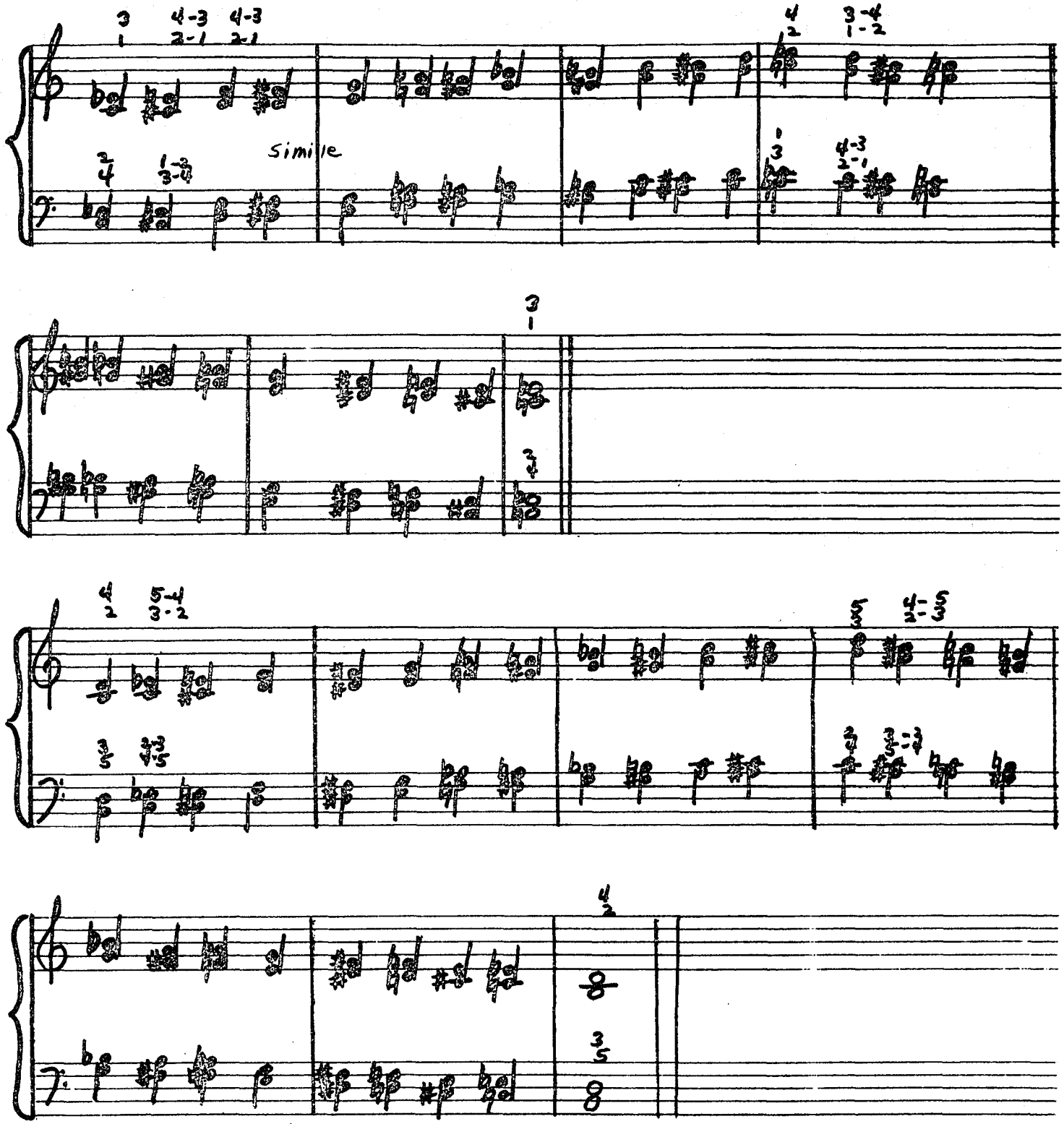
Assignment: X. "Christ the Lamb of God", The Seventy-Nine Chorales For The Organ by Marcel Dupré, H. W. Gray Co.

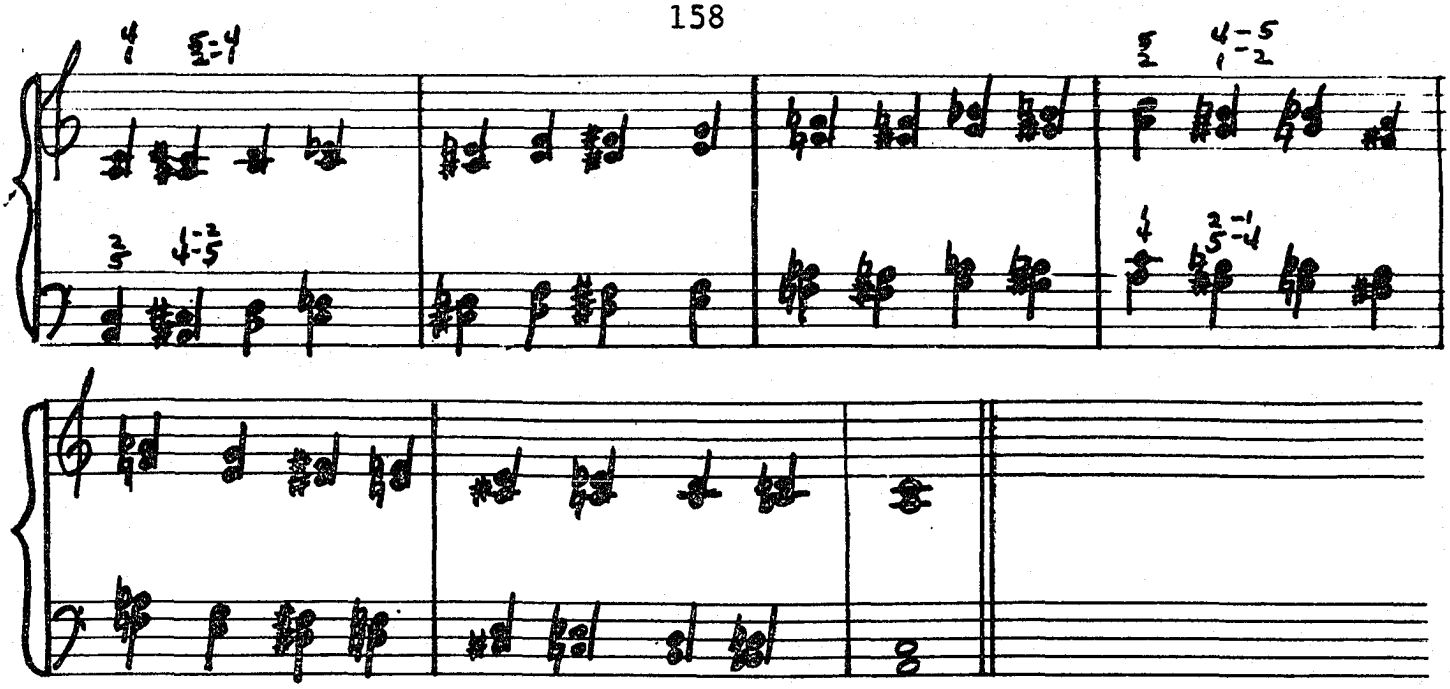
Toes and heels on White notes.





Double substitution of chromatic minor 3rds.

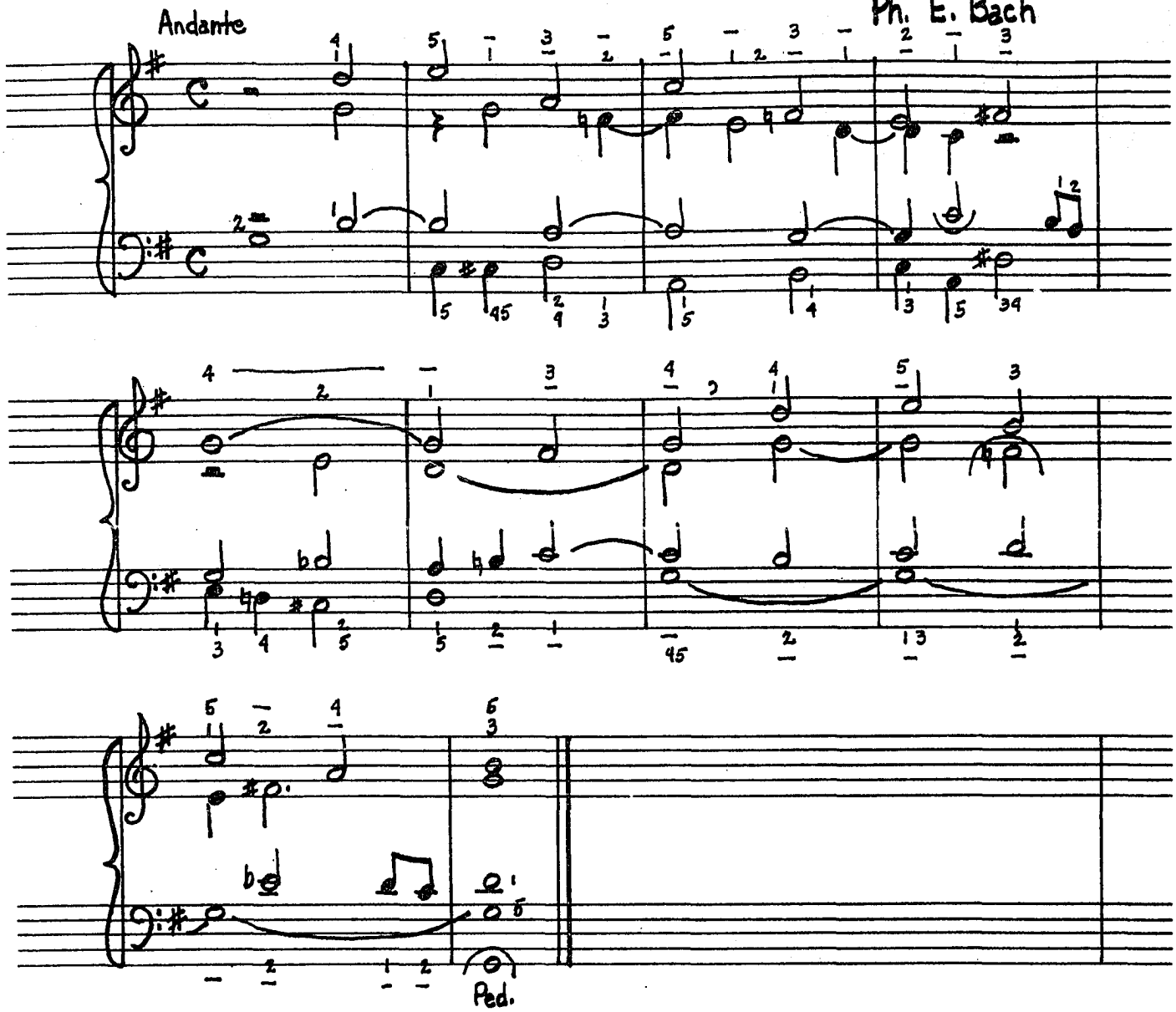


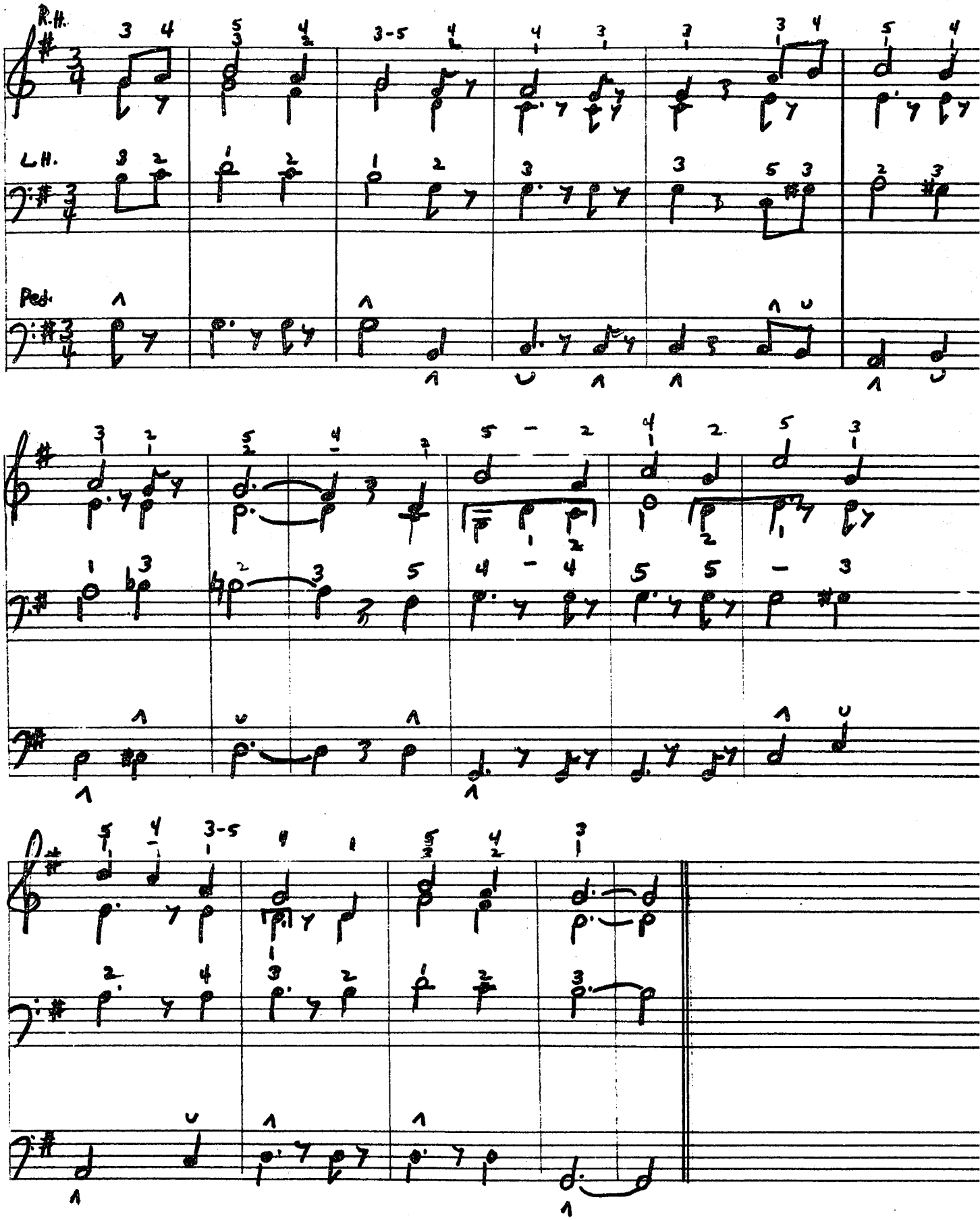


Choral

Andante

Ph. E. Bach



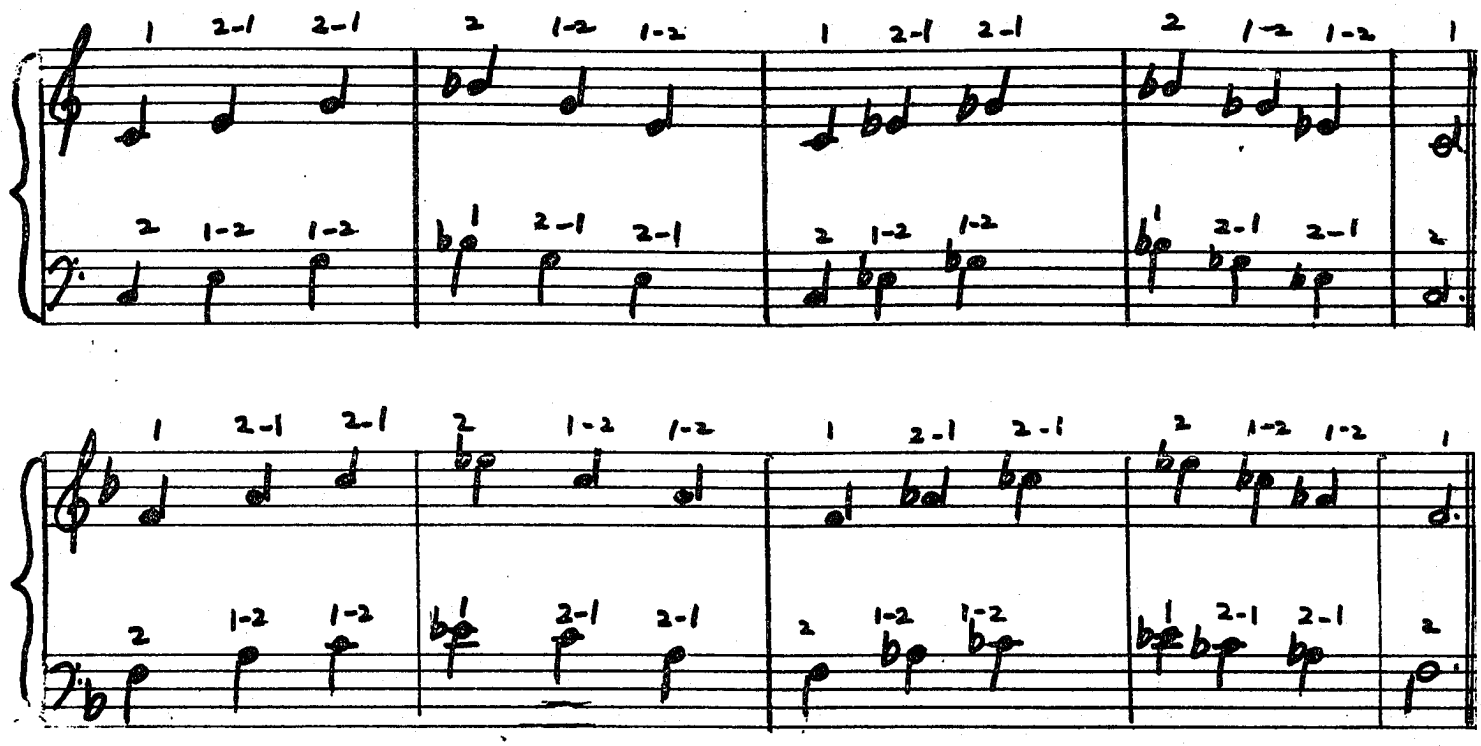

R.H.
L.H.
Ped.

LESSON V

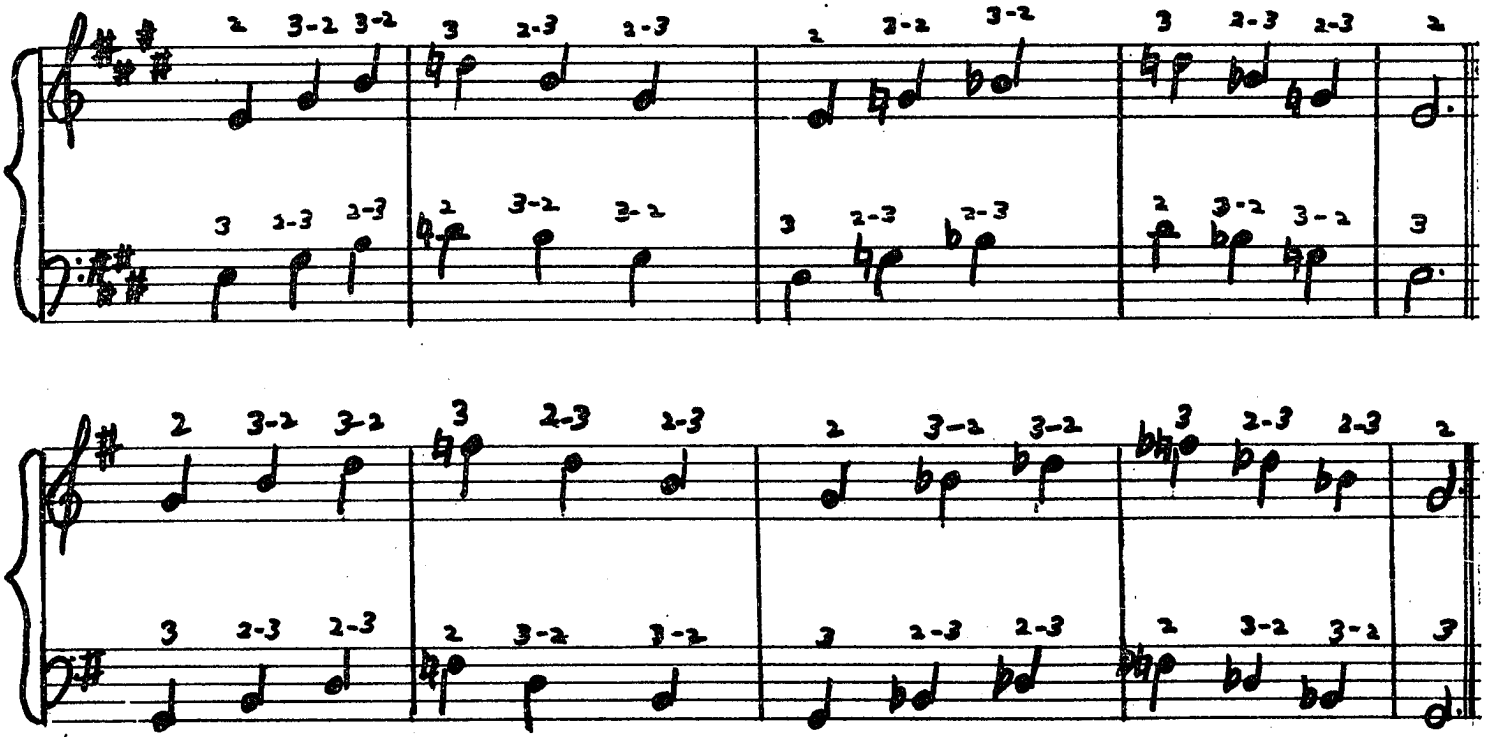
LESSON FIVE

Substitution of Major-Minor 7th and ½ Diminished 7th Broken Chords.

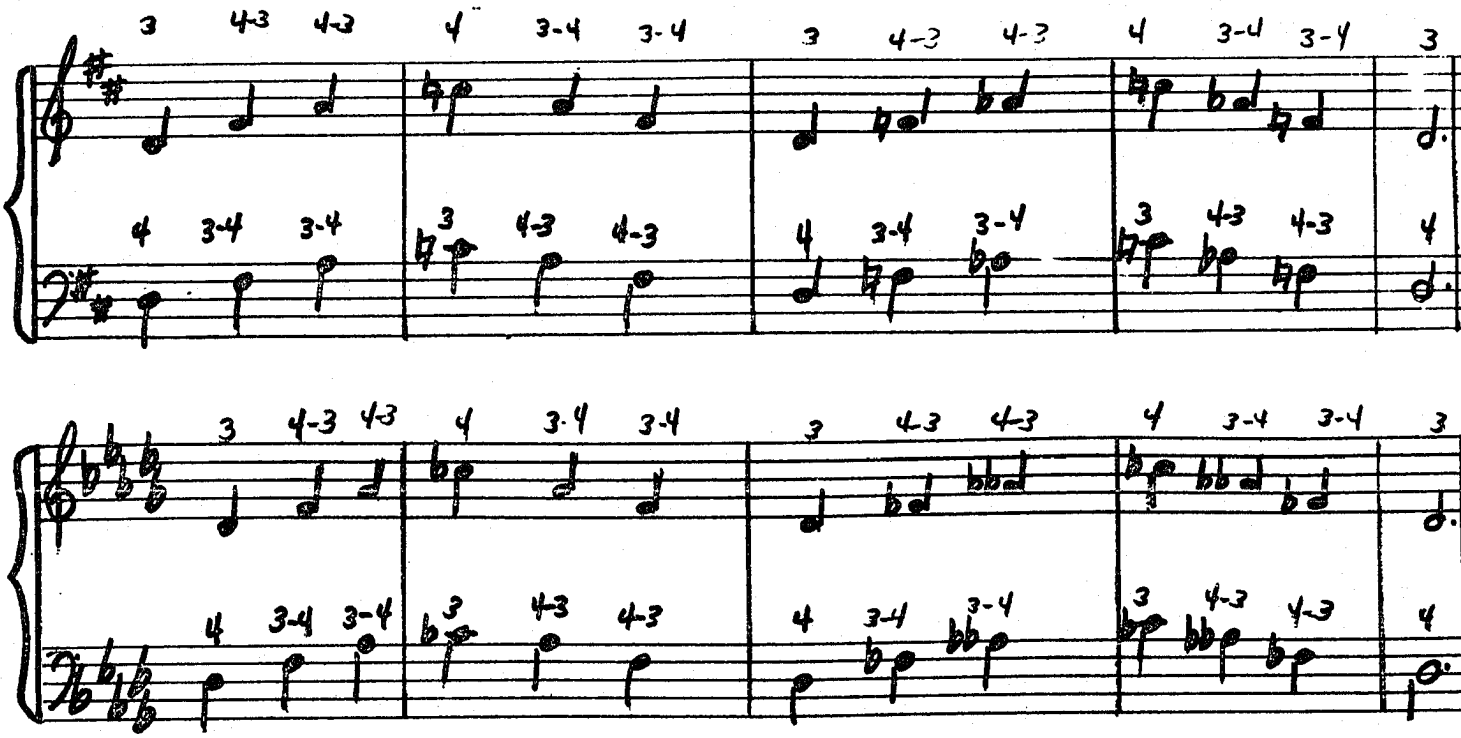
Using the 1st and 2nd fingers.



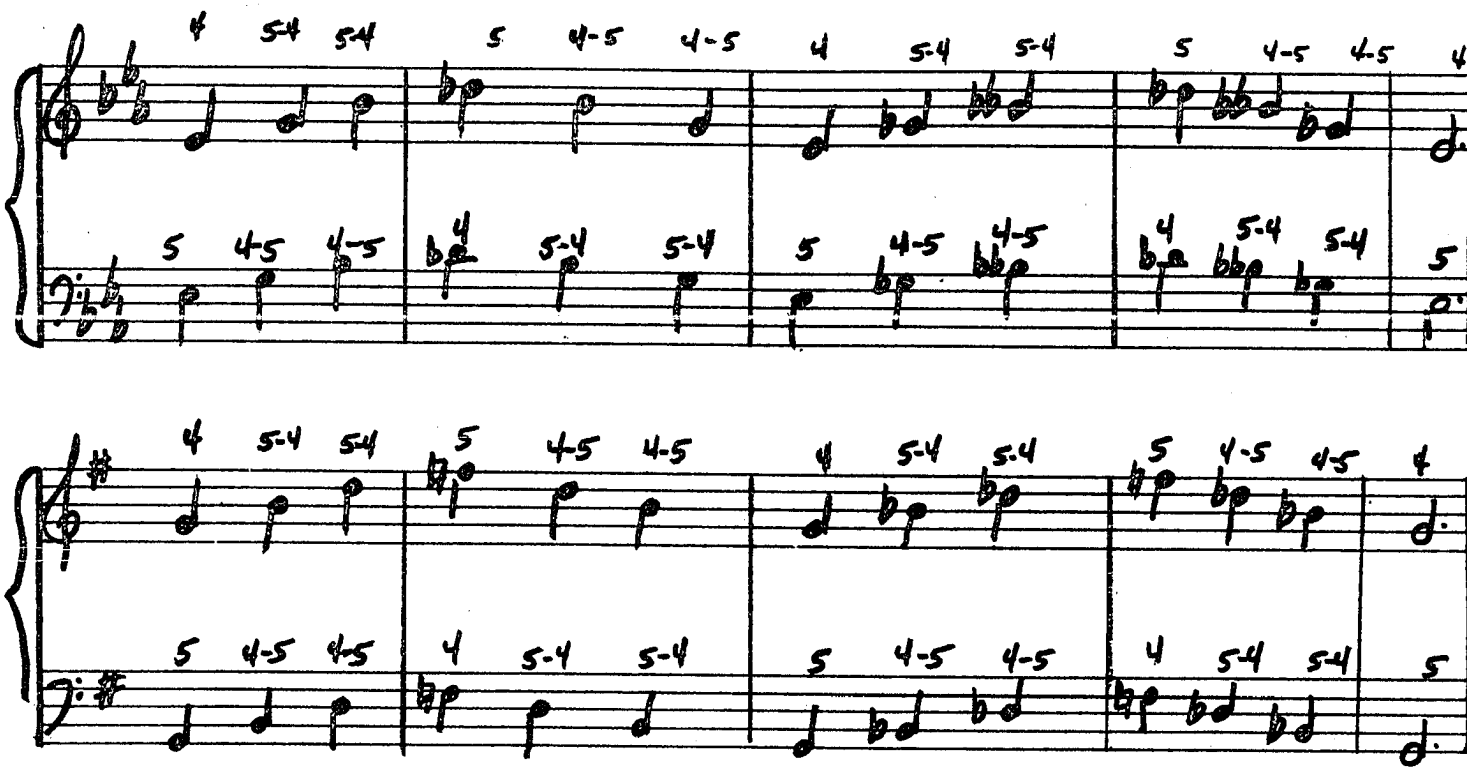
Using the 2nd and 3rd fingers.



Using the 4th and 5th fingers.

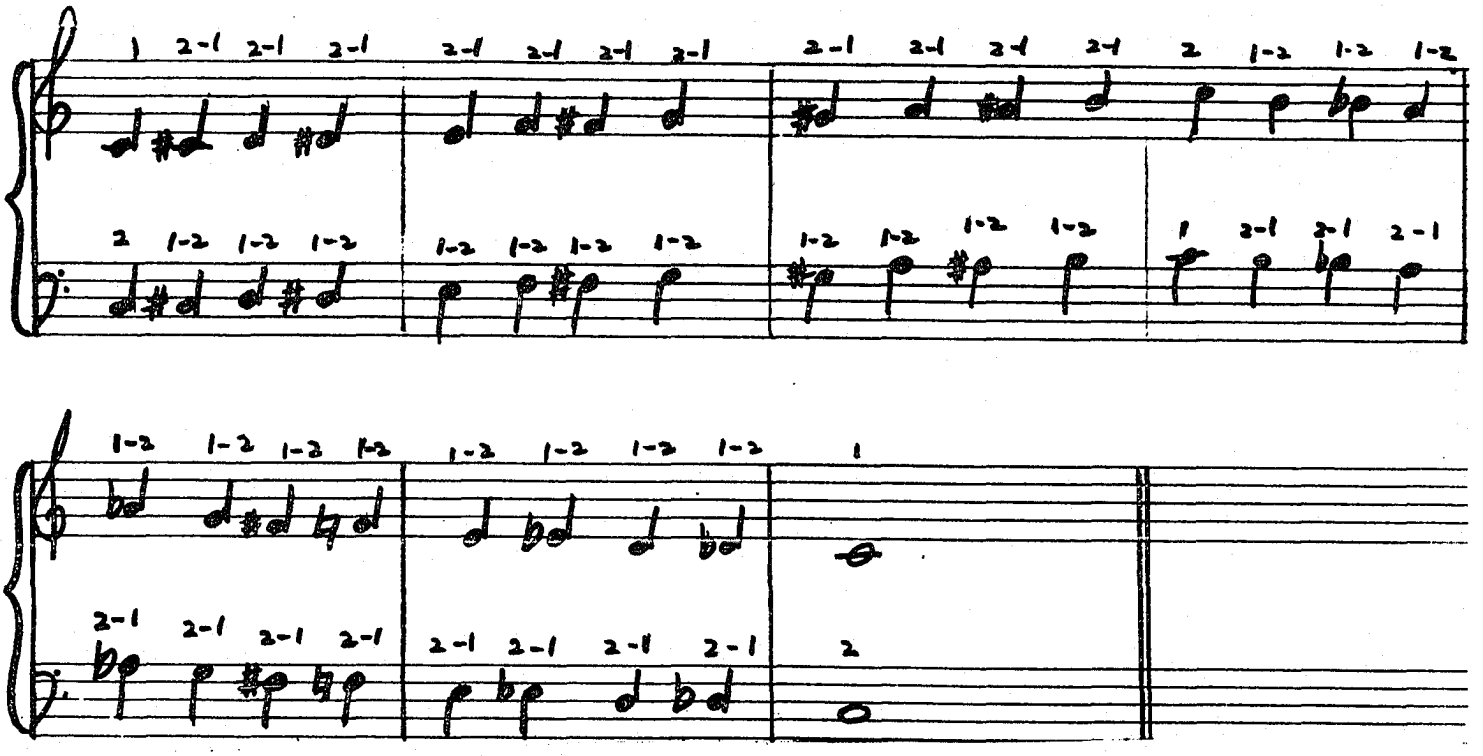


Using the 3rd and 4th fingers.

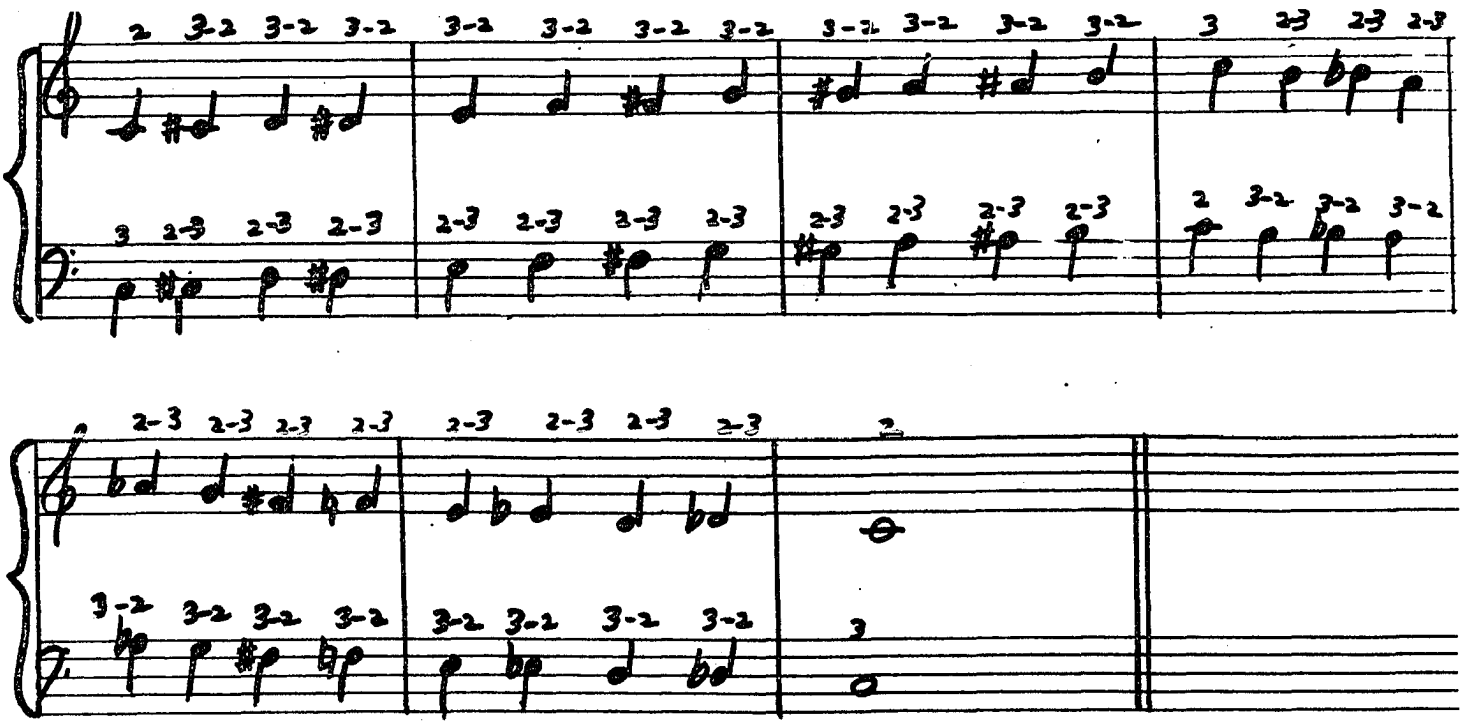


Chromatic Scale

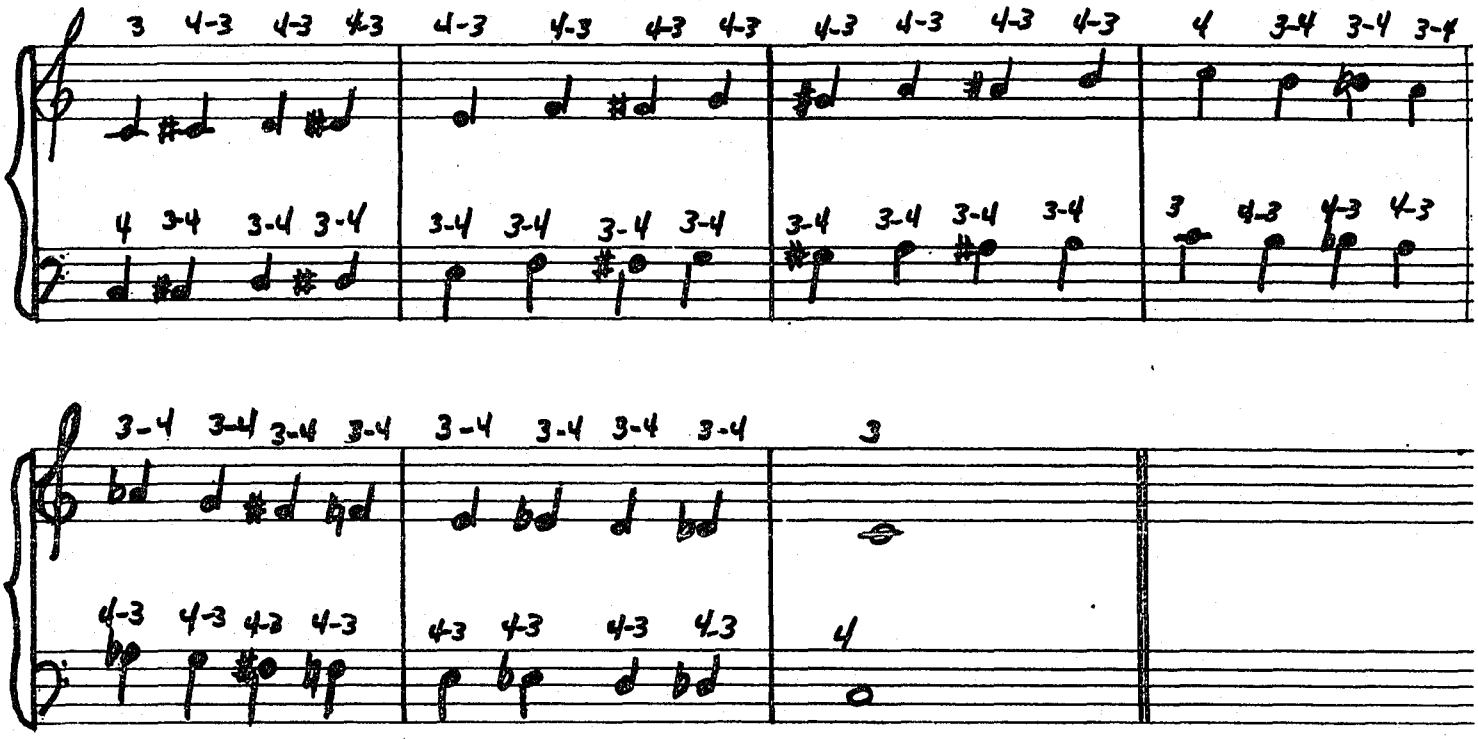
Using the 1st and 2nd fingers.



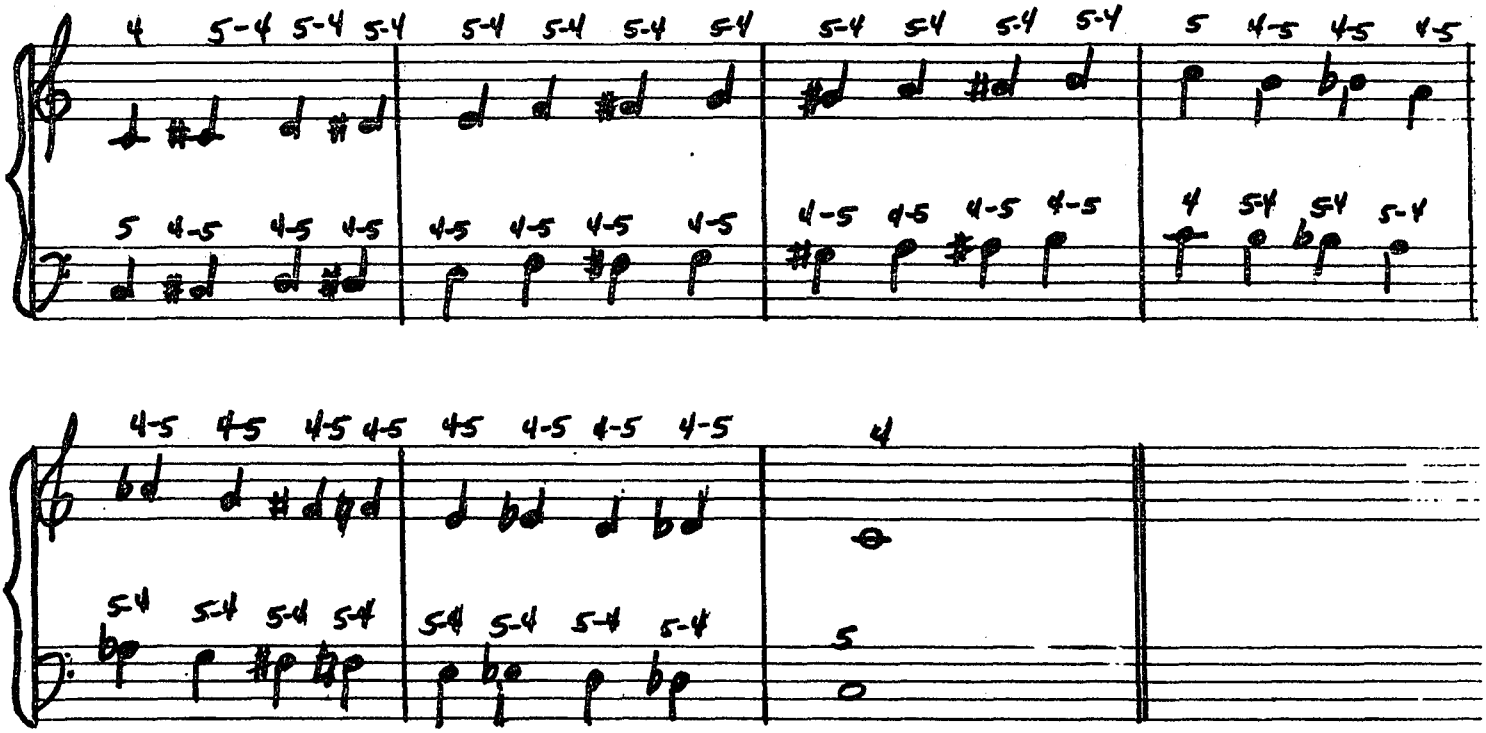
Using the 2nd and 3rd fingers.



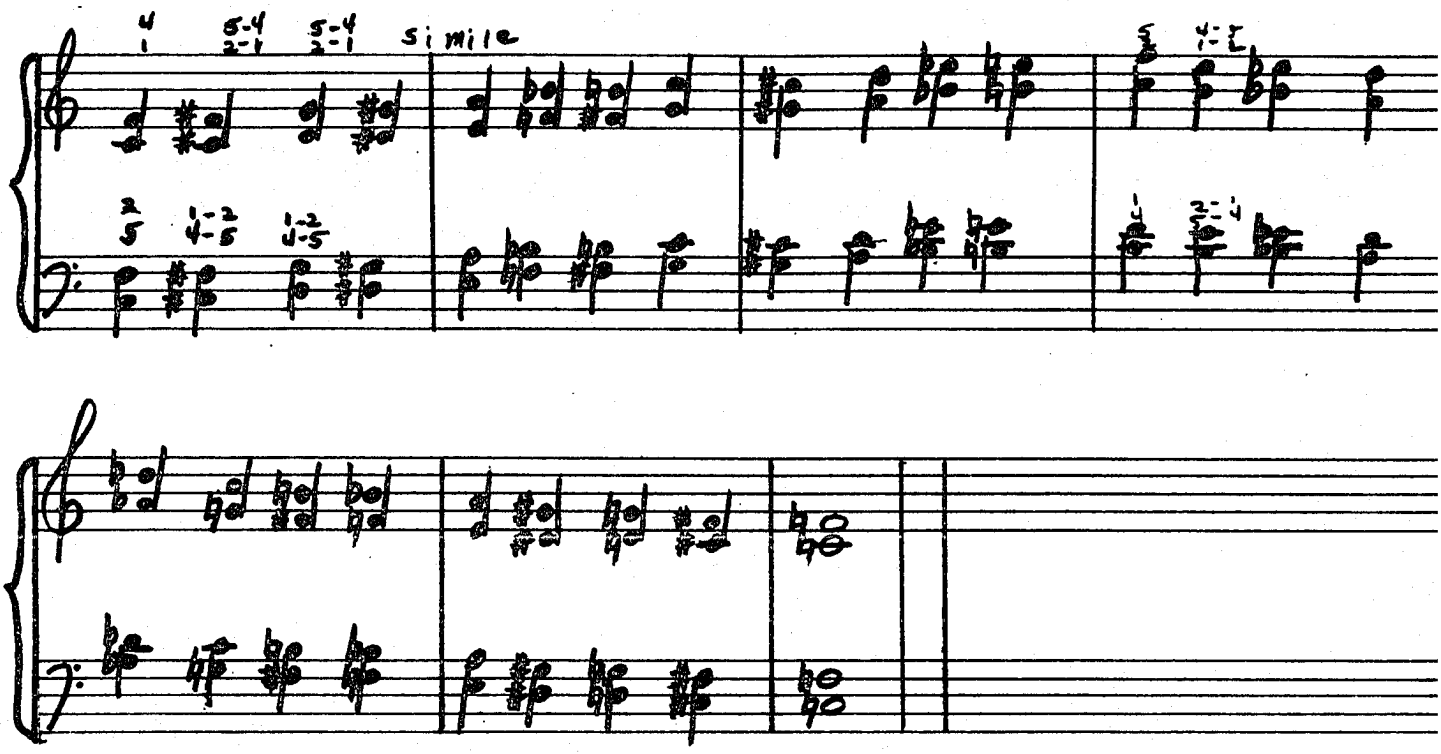
Using the 3rd and 4th fingers.



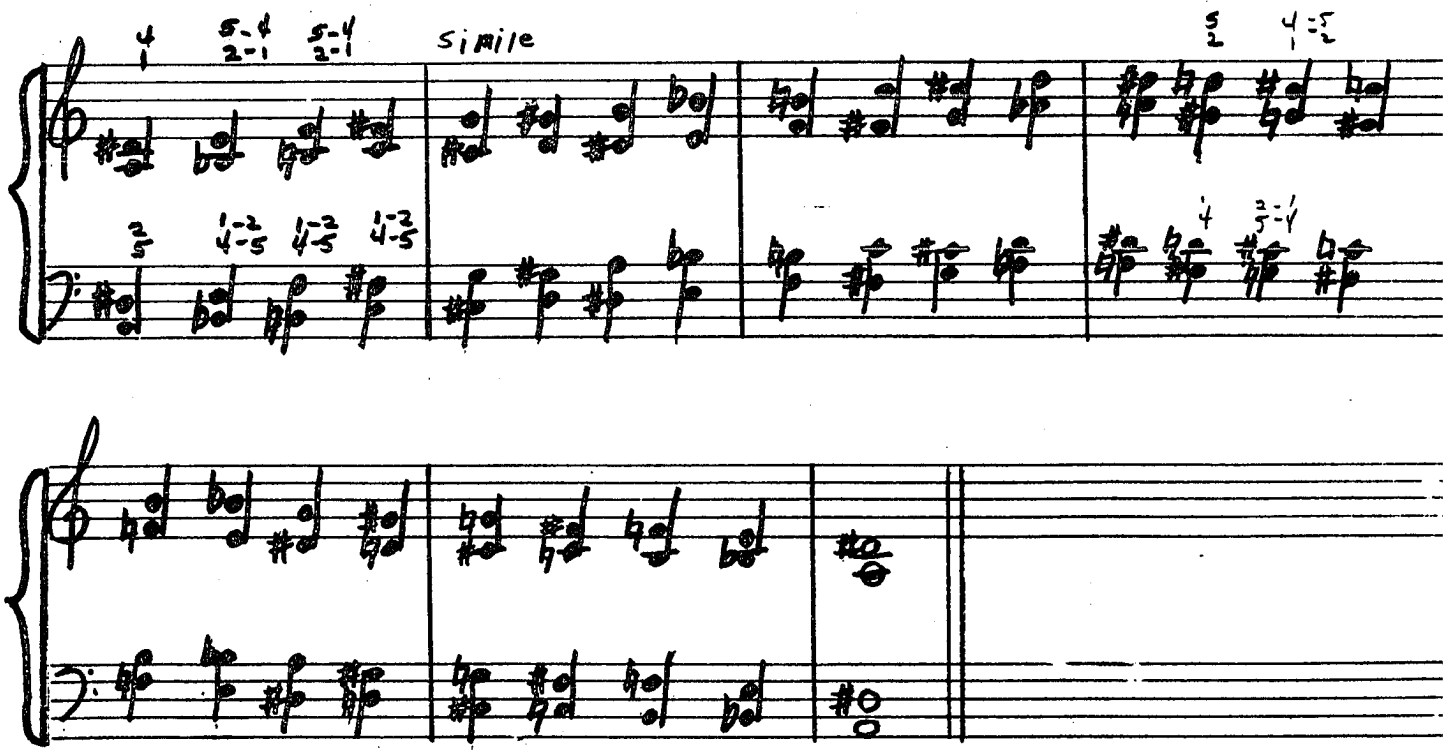
Using the 4th and 5th fingers.



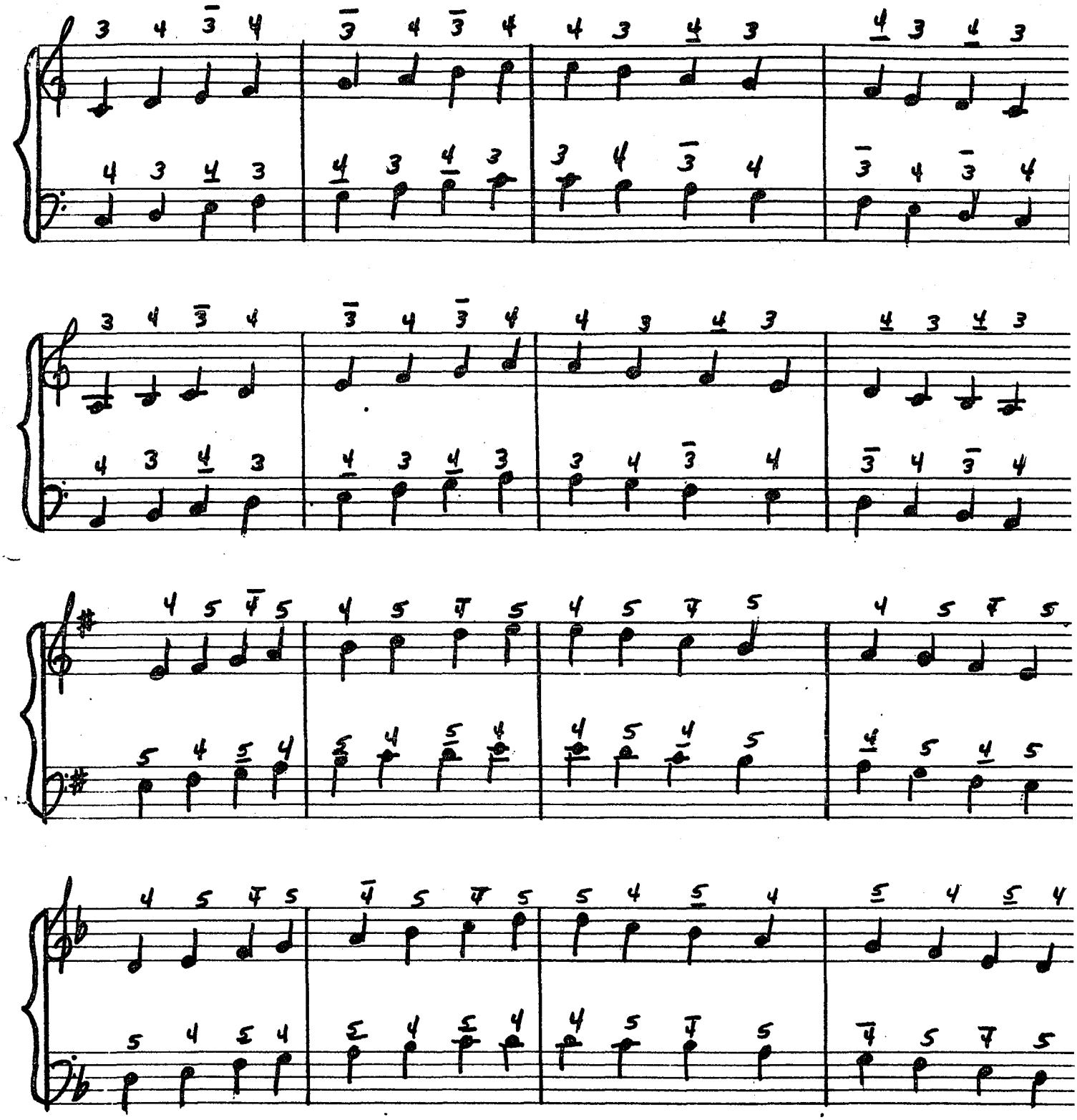
Substitution of chromatic perfect 4ths.

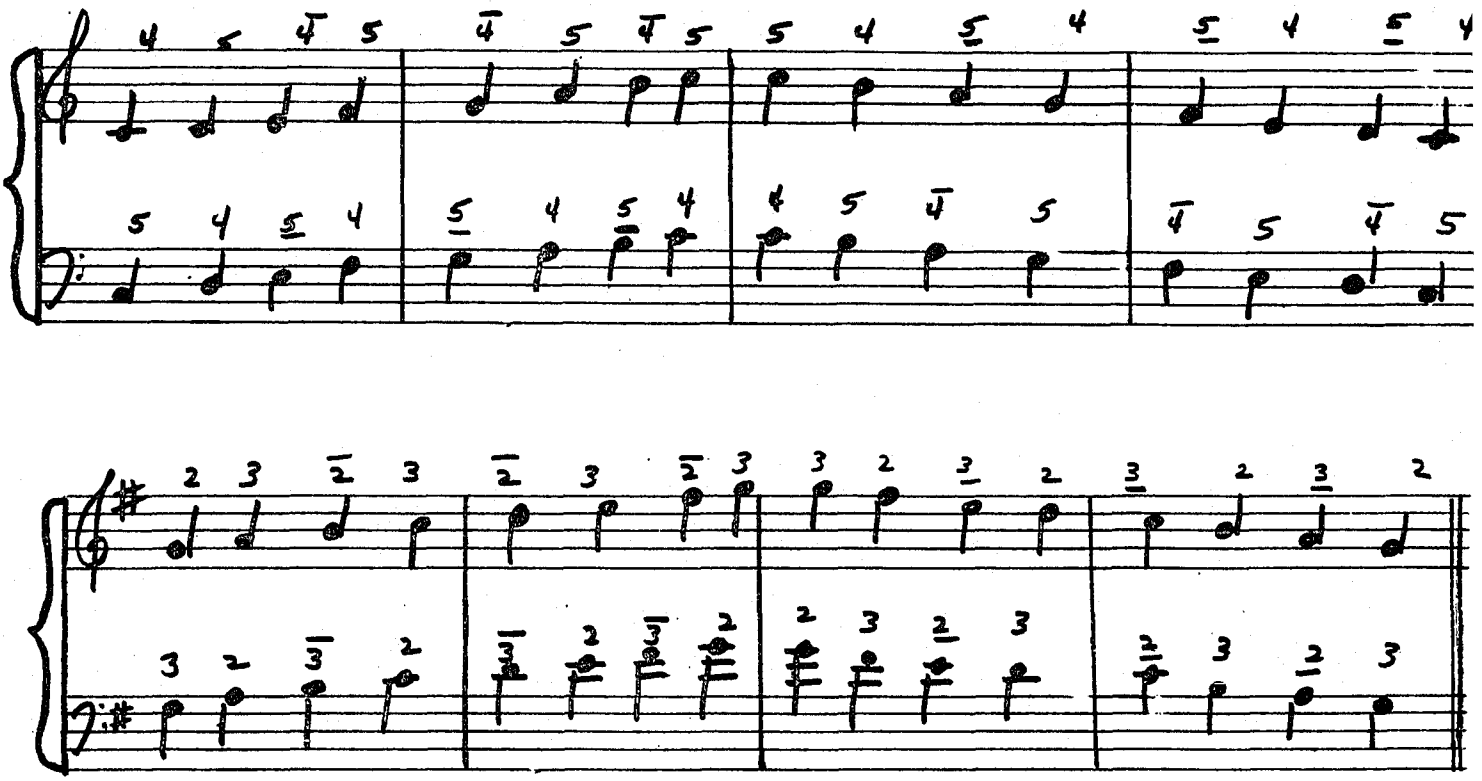


Chromatic diminished 5ths and augmented 4ths.



Passing one finger over and under.





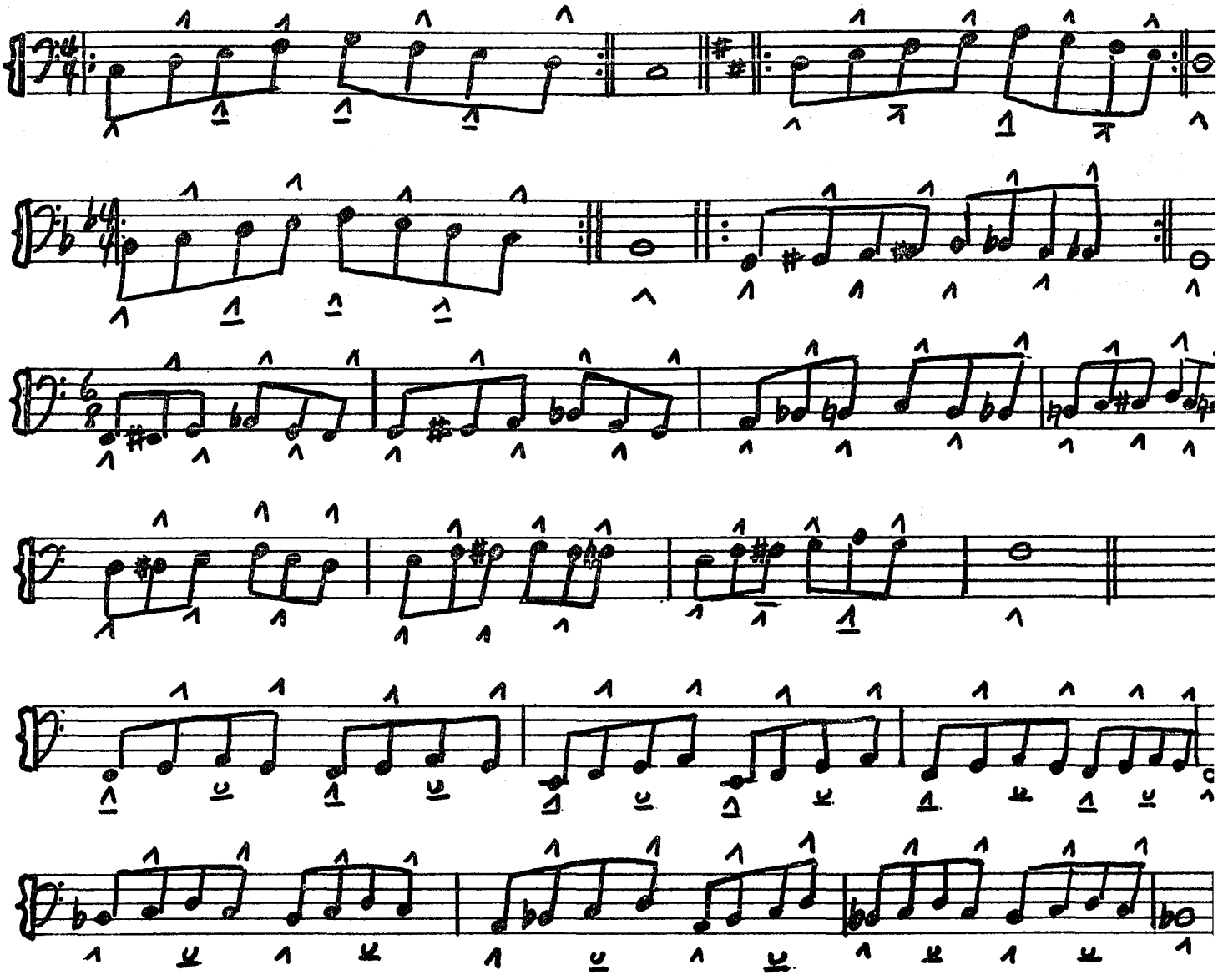
Assignment: I. "Abide with us, O Lord Jesus Christ"
IV. "Glory be to God on high", The Seventy-Nine Chorales For The Organ by Marcel Dupré, H. W. Gray Co.

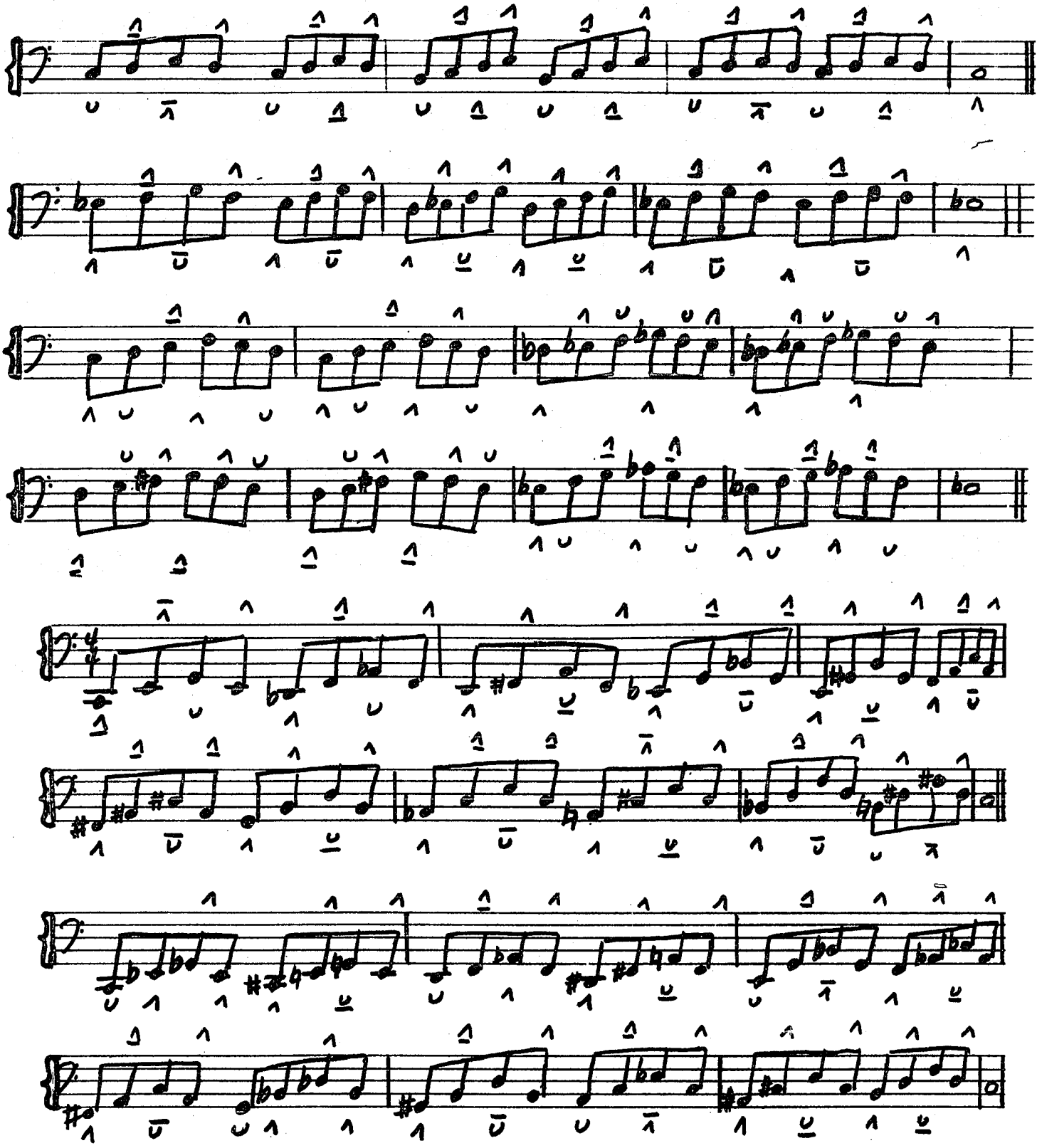
indicates the crossing over of one toe in front of the other foot with toe placed forward on the pedal-board.

indicates the crossing over of one heel in front of the other foot with heel placed forward on the pedal-board.

indicates the crossing over of one toe behind the other foot with the toe drawn back on the pedal-board.

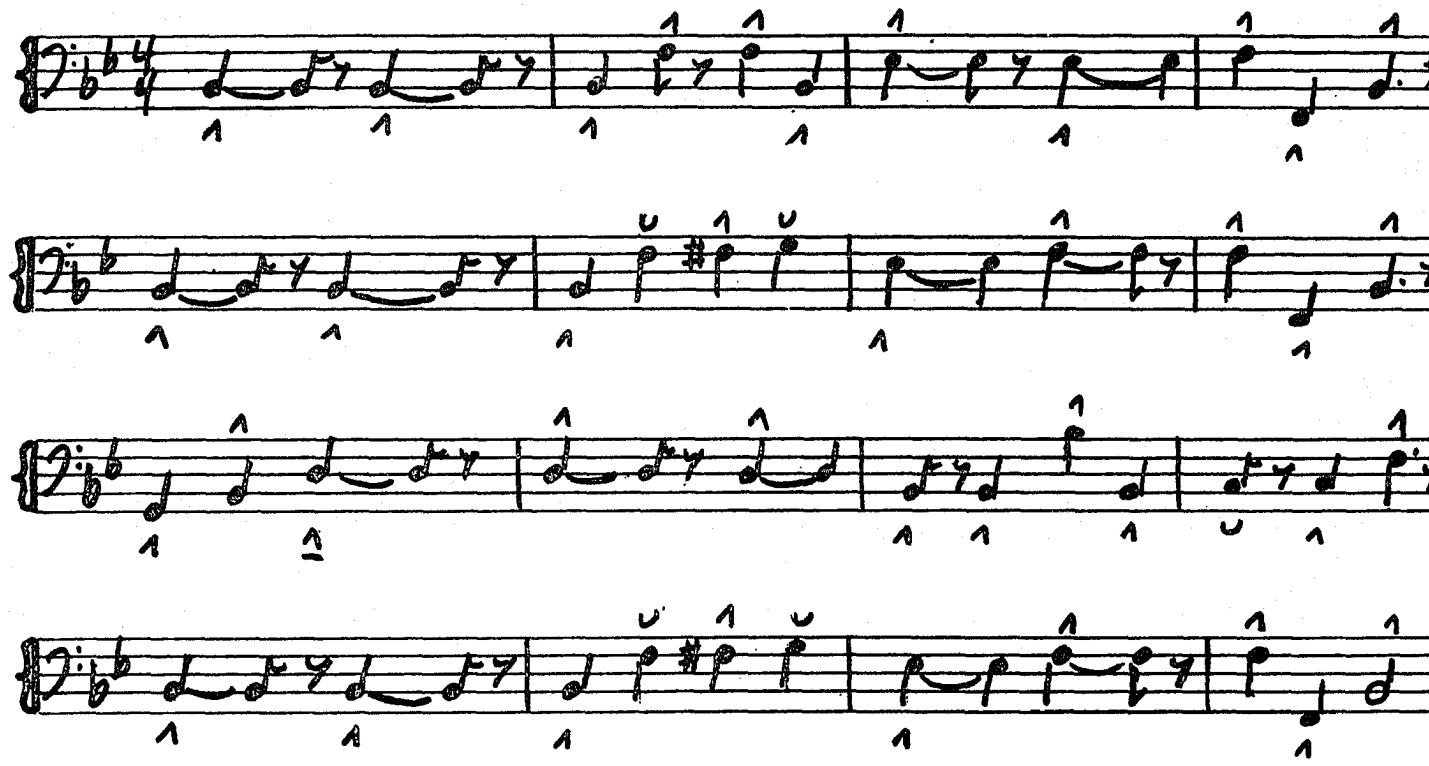
indicates the crossing over of one heel behind the other with the heel drawn back on the pedal-board.



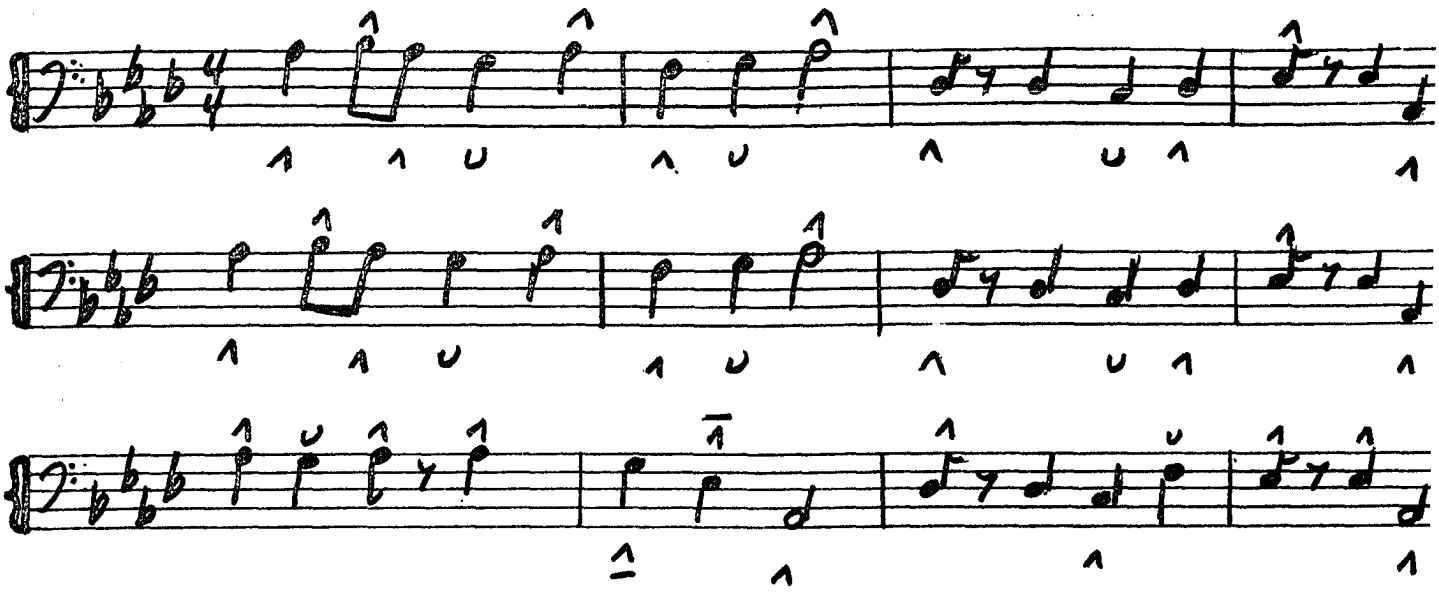


LOVE DIVINE Zundel

Pedal

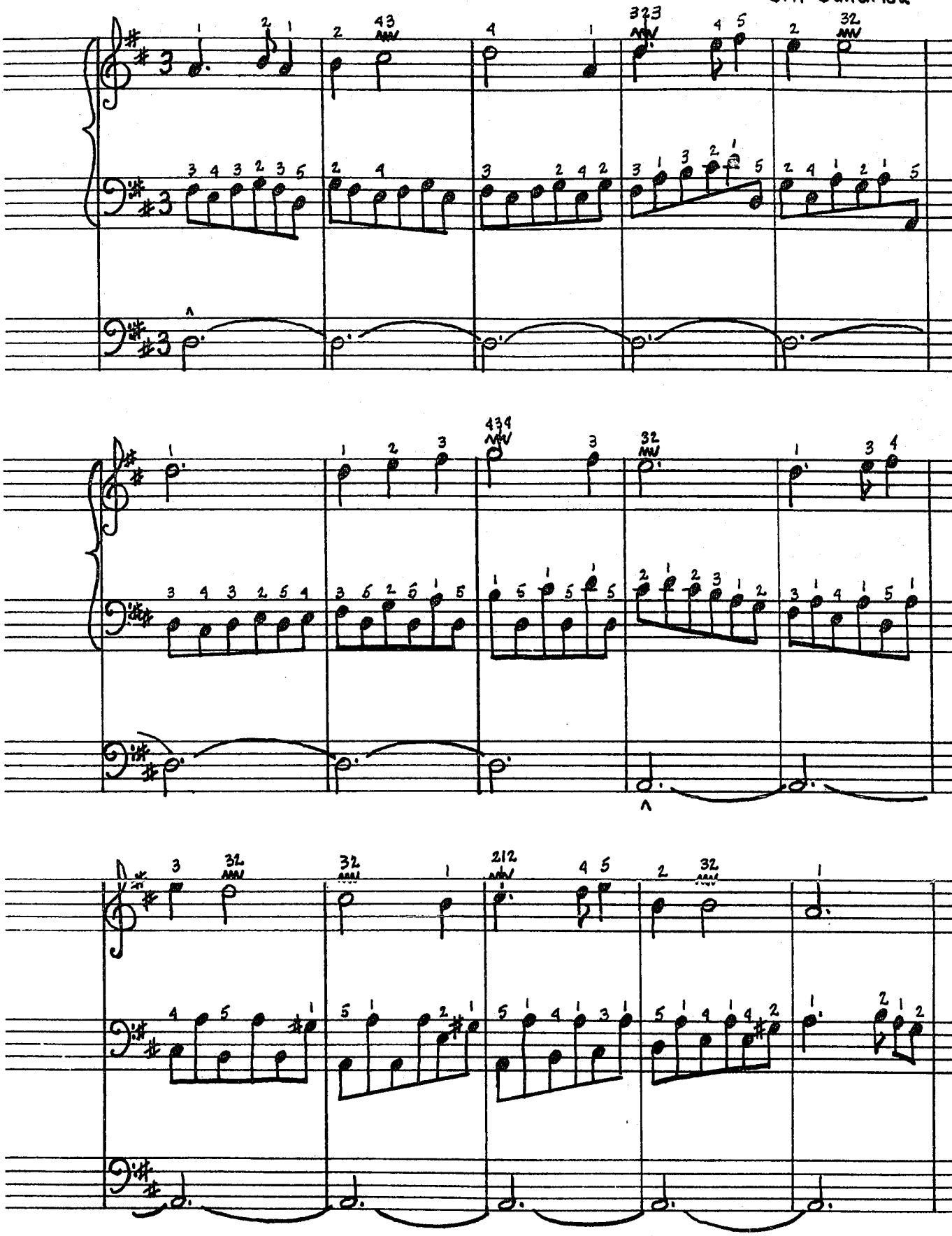


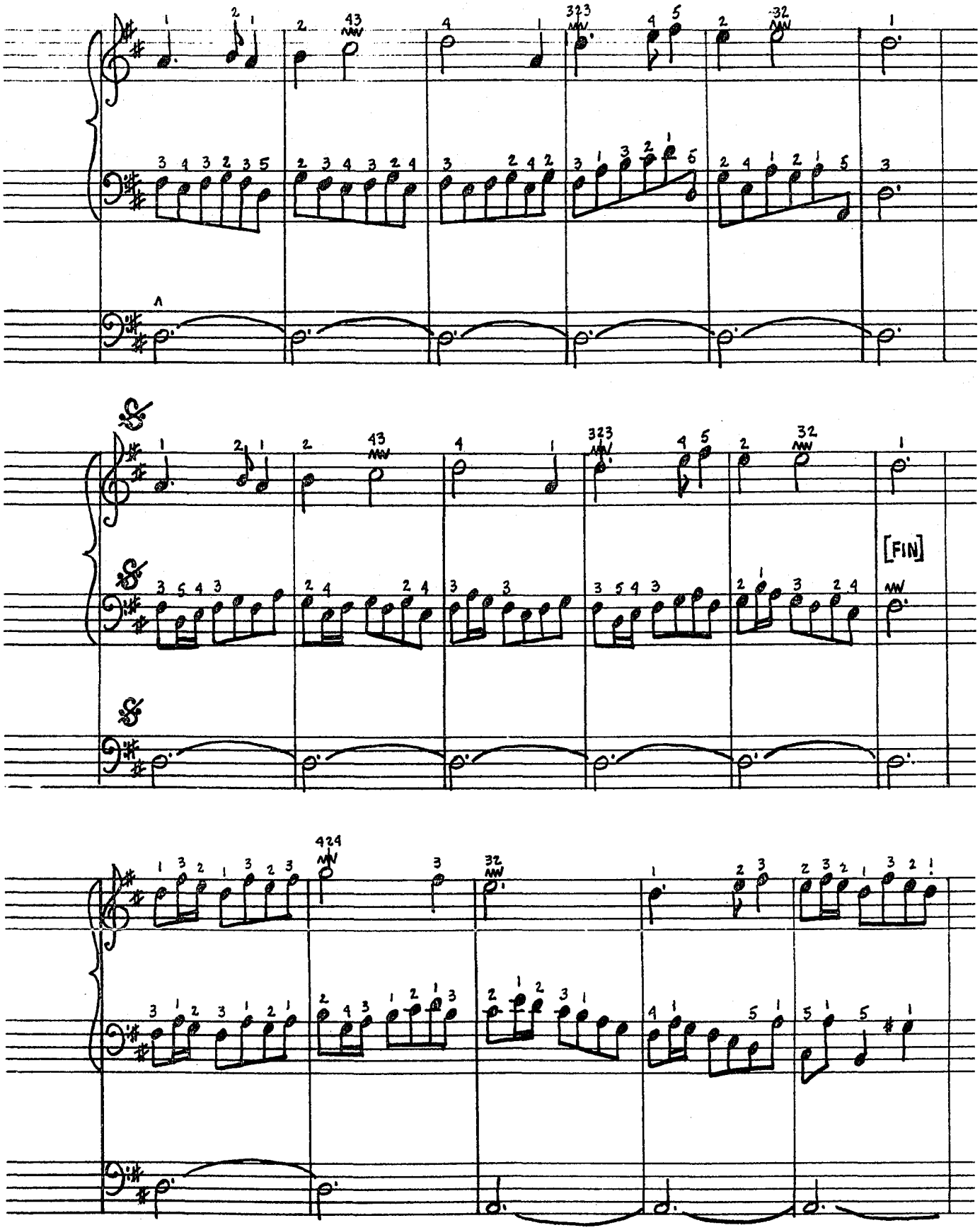
DIX Kocher



Il n'est rien de plus Tendre

J.F. Dandrieu

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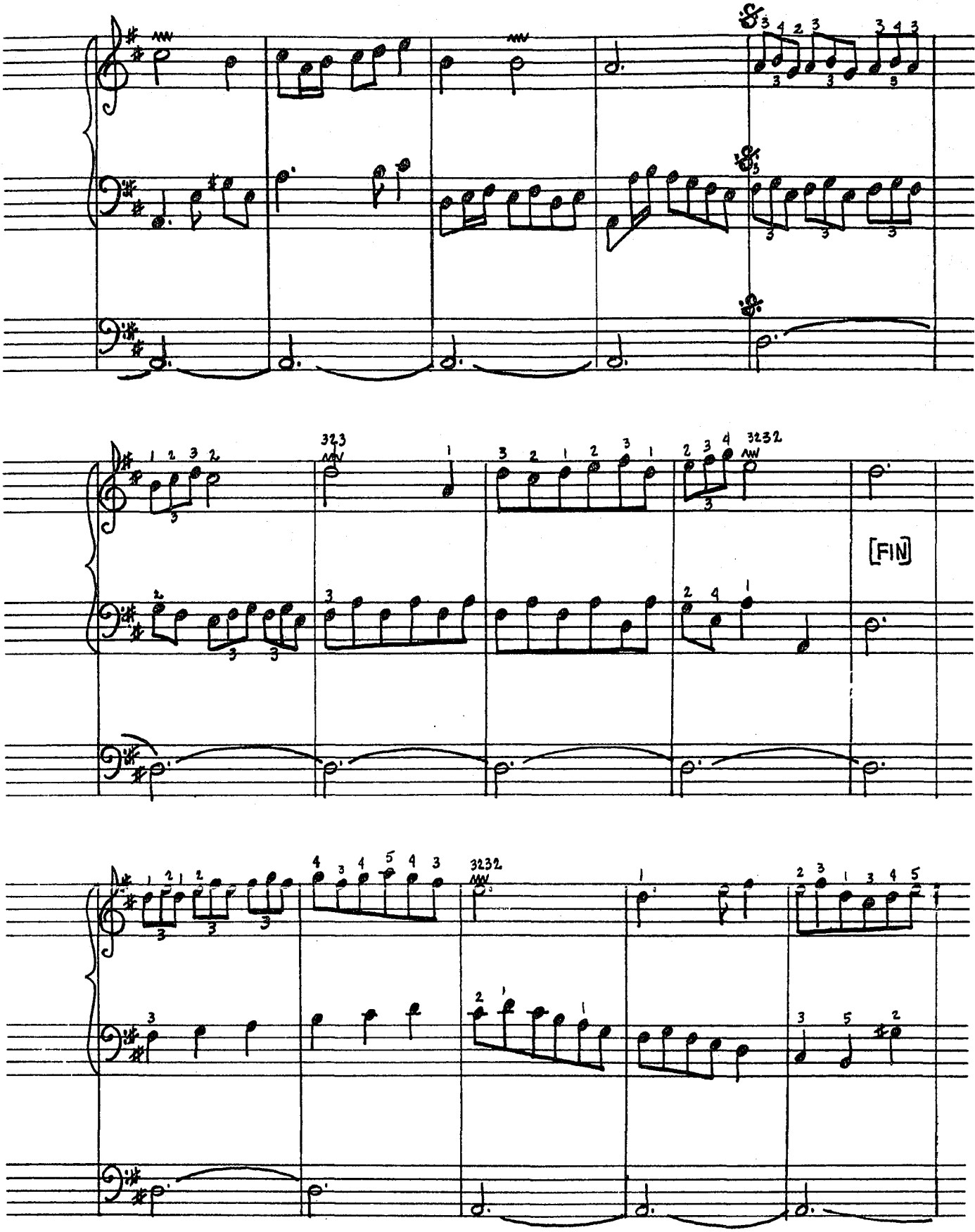
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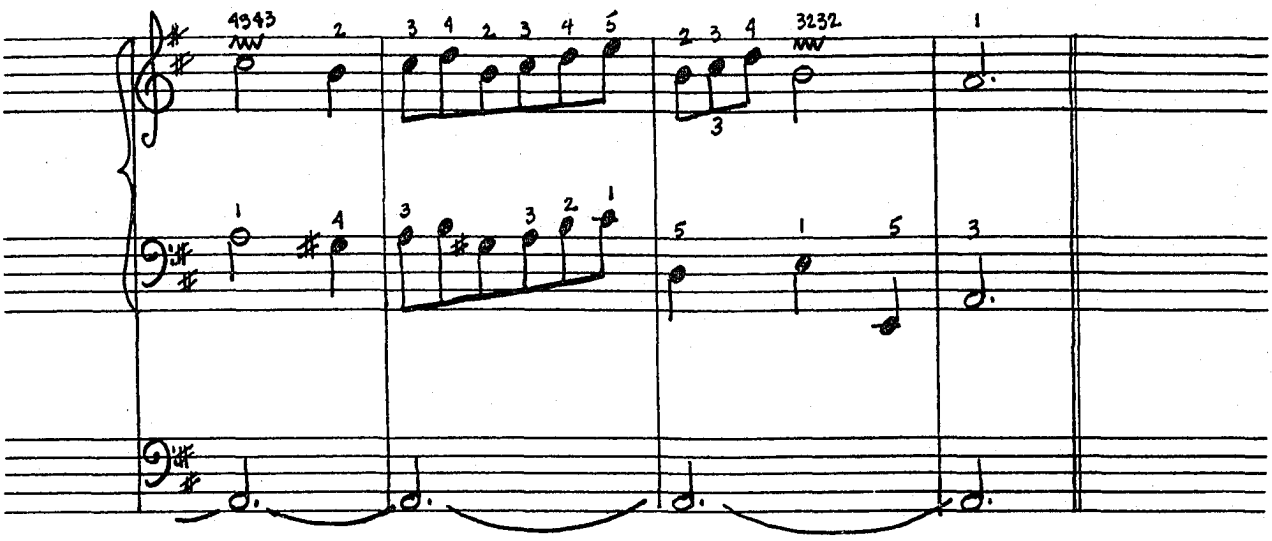
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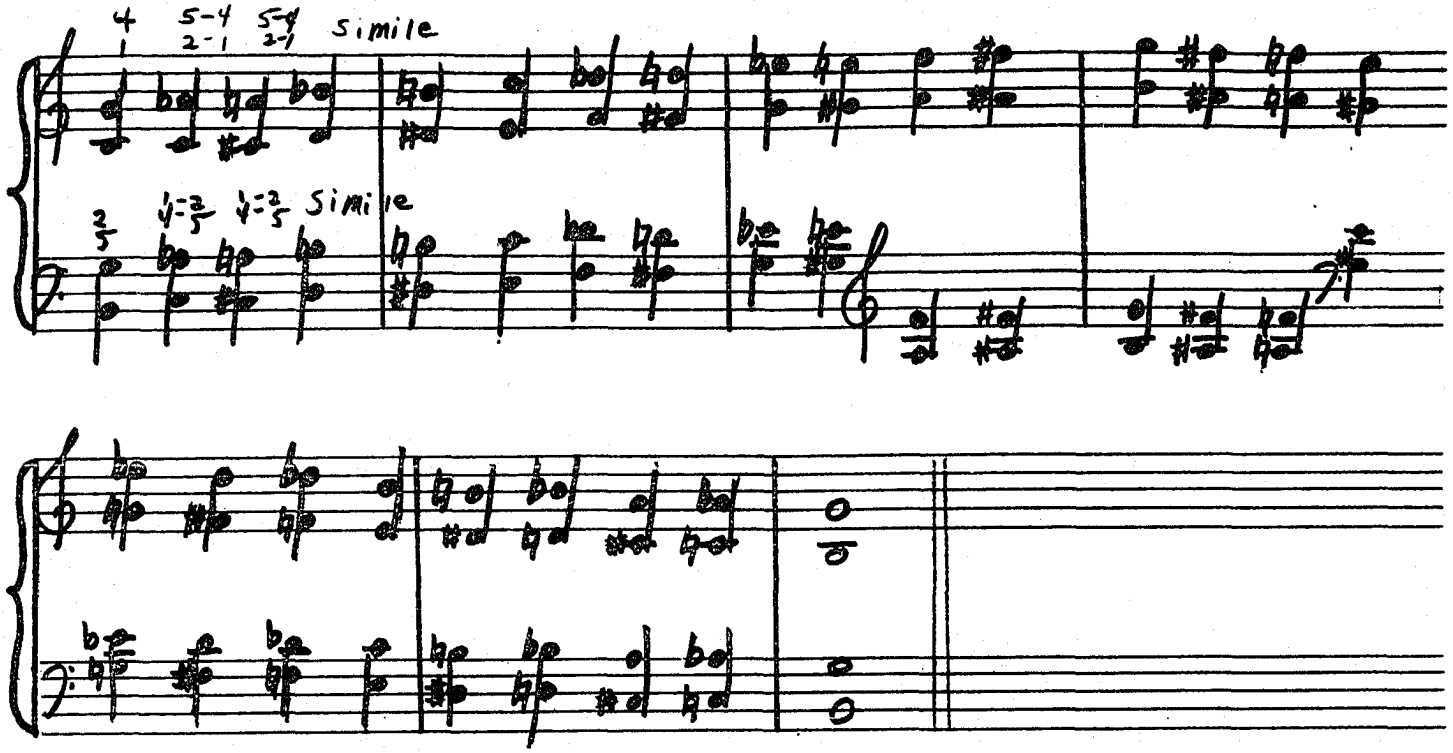
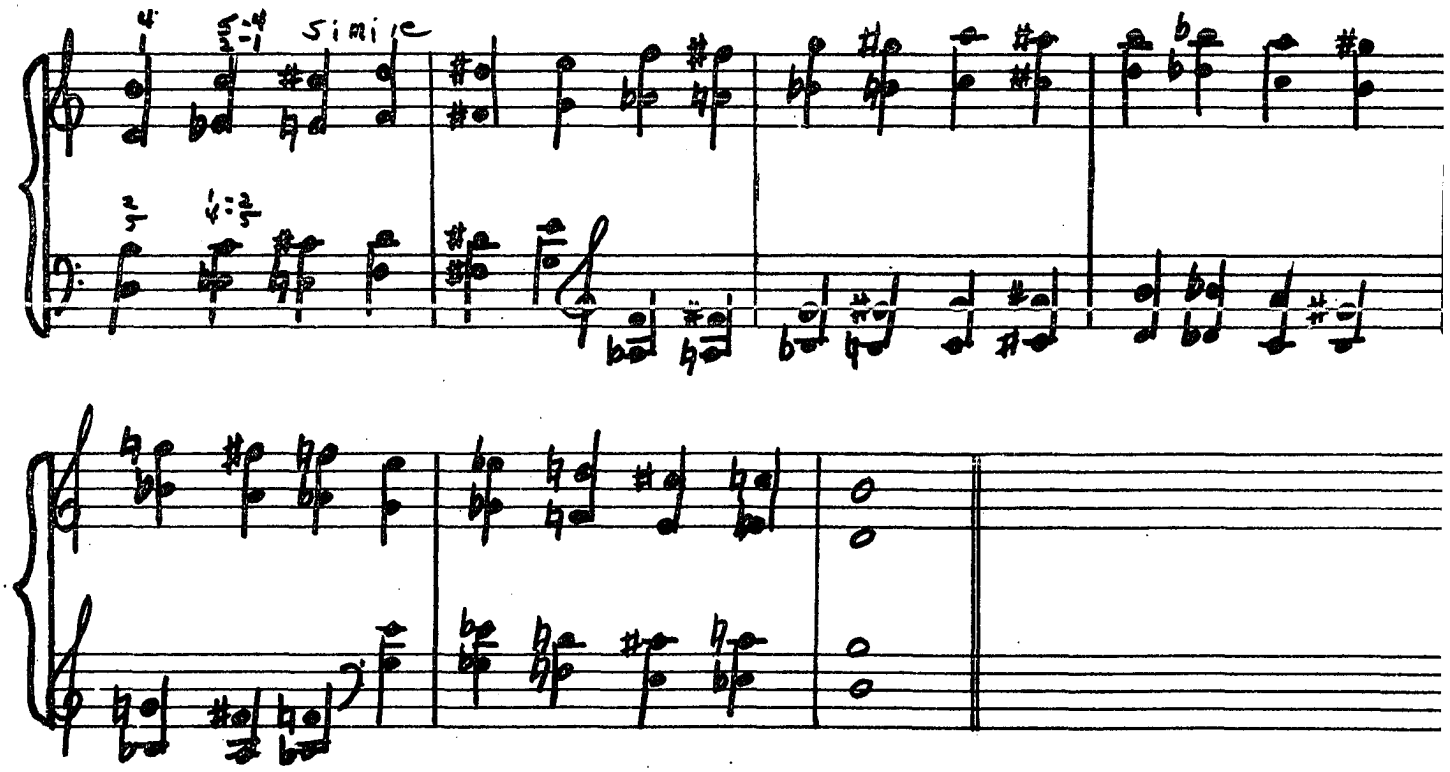
LESSON VI

LESSON SIX

Double substitution for chromatic minor 6ths.

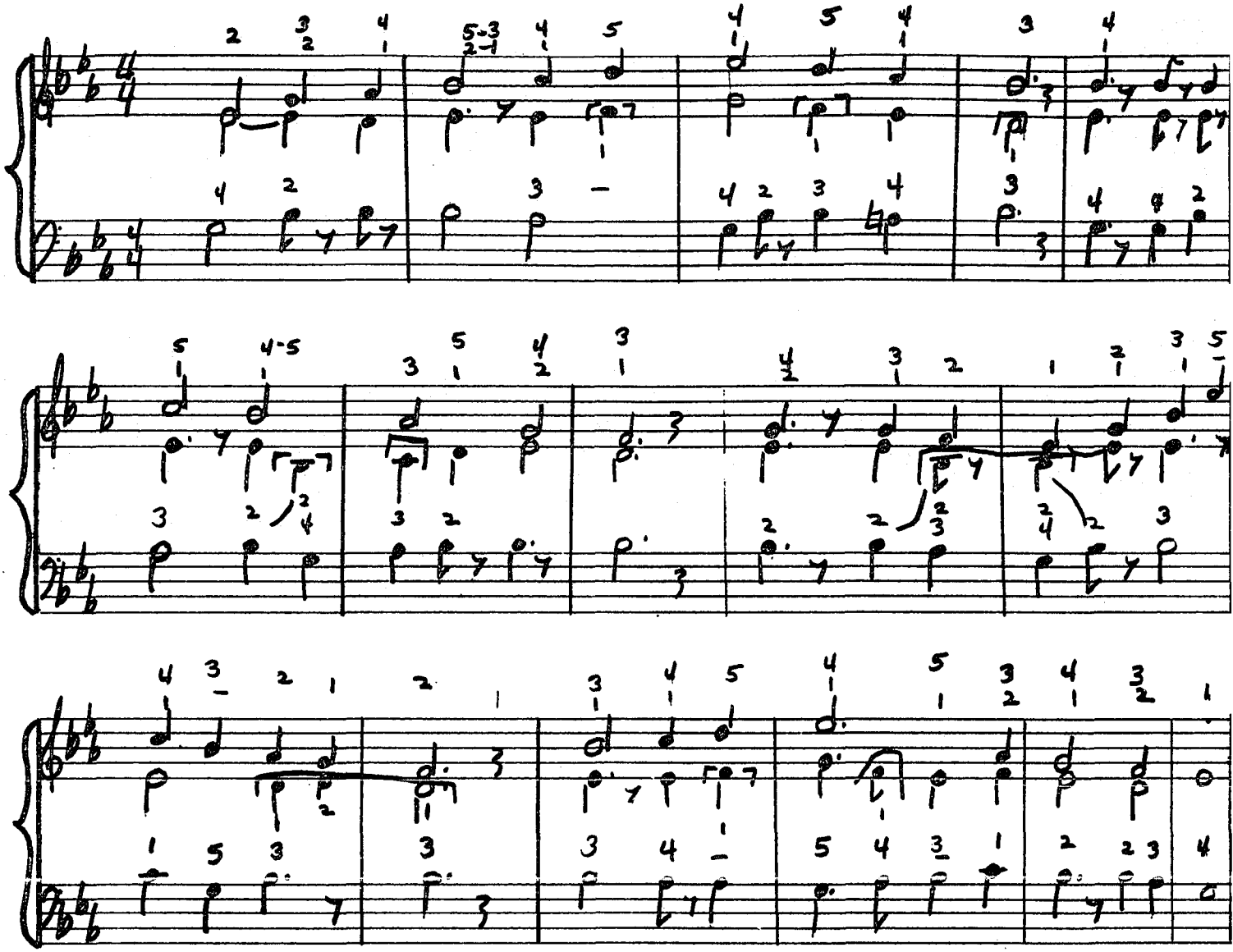


Chromatic major 6ths.



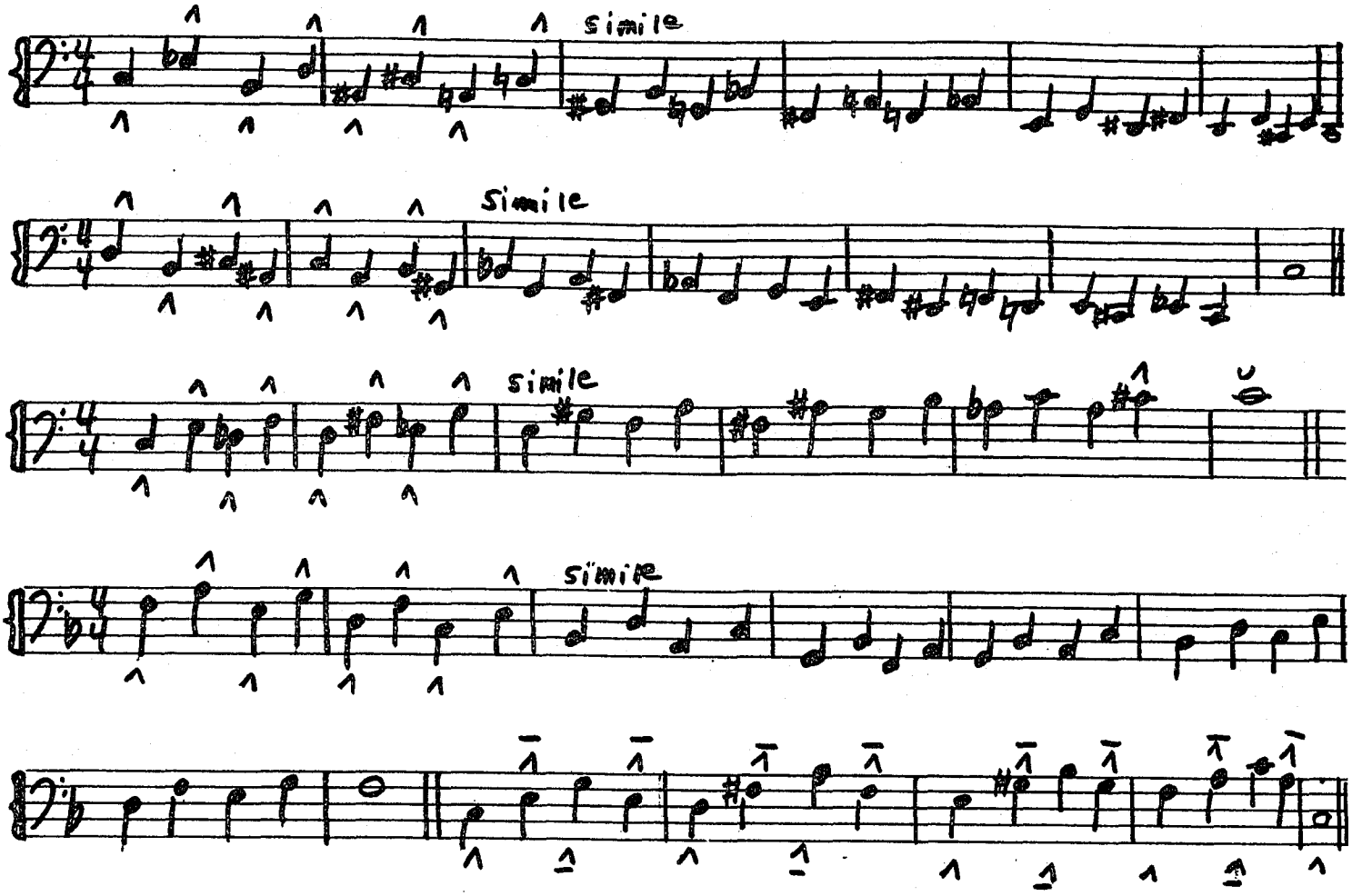
DUKE STREET John Hatton

S. A. T.

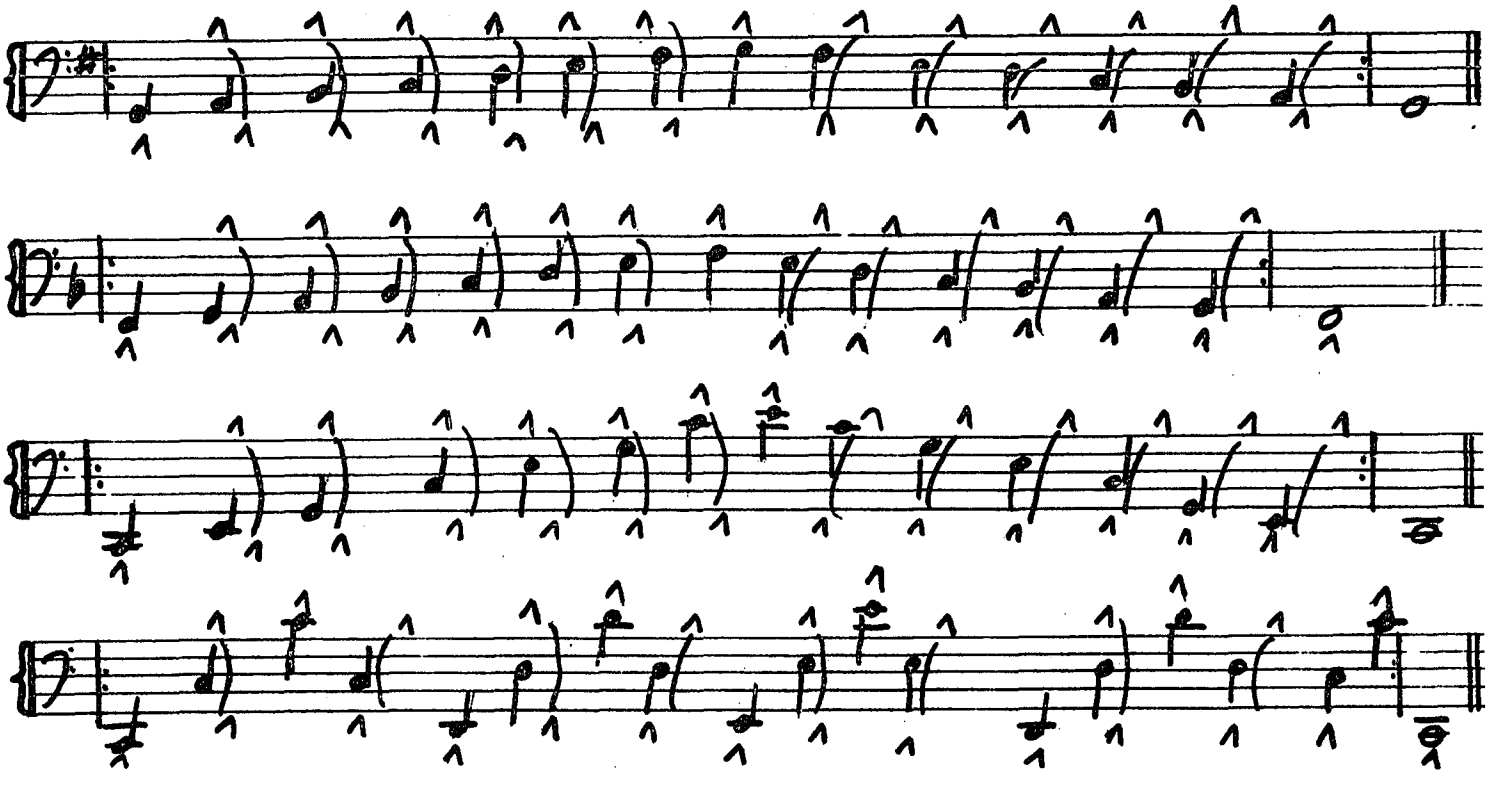


Assignment: LII. "Beloved Jesus, here we stand"
XIII. "Christ our Lord to Jordan came",
The Seventy-Nine Chorales For The Organ by
Marcel Dupré, H. W. Gray Co.

Alternating toes playing 3rds.

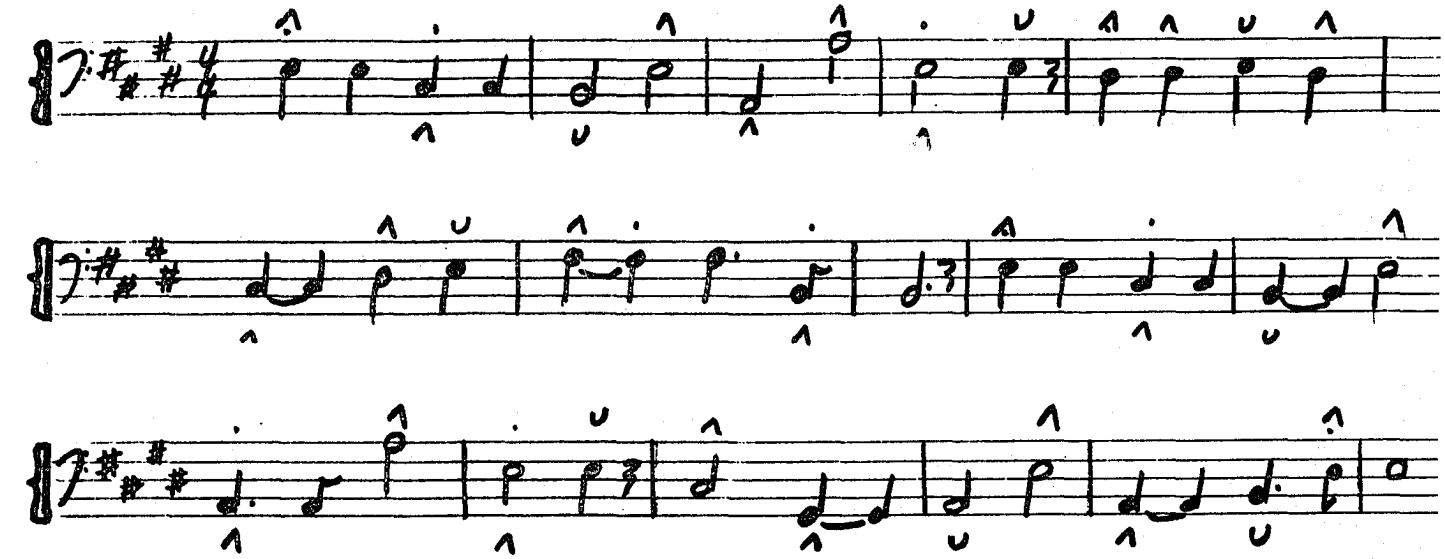


Substitution of one foot for the other.



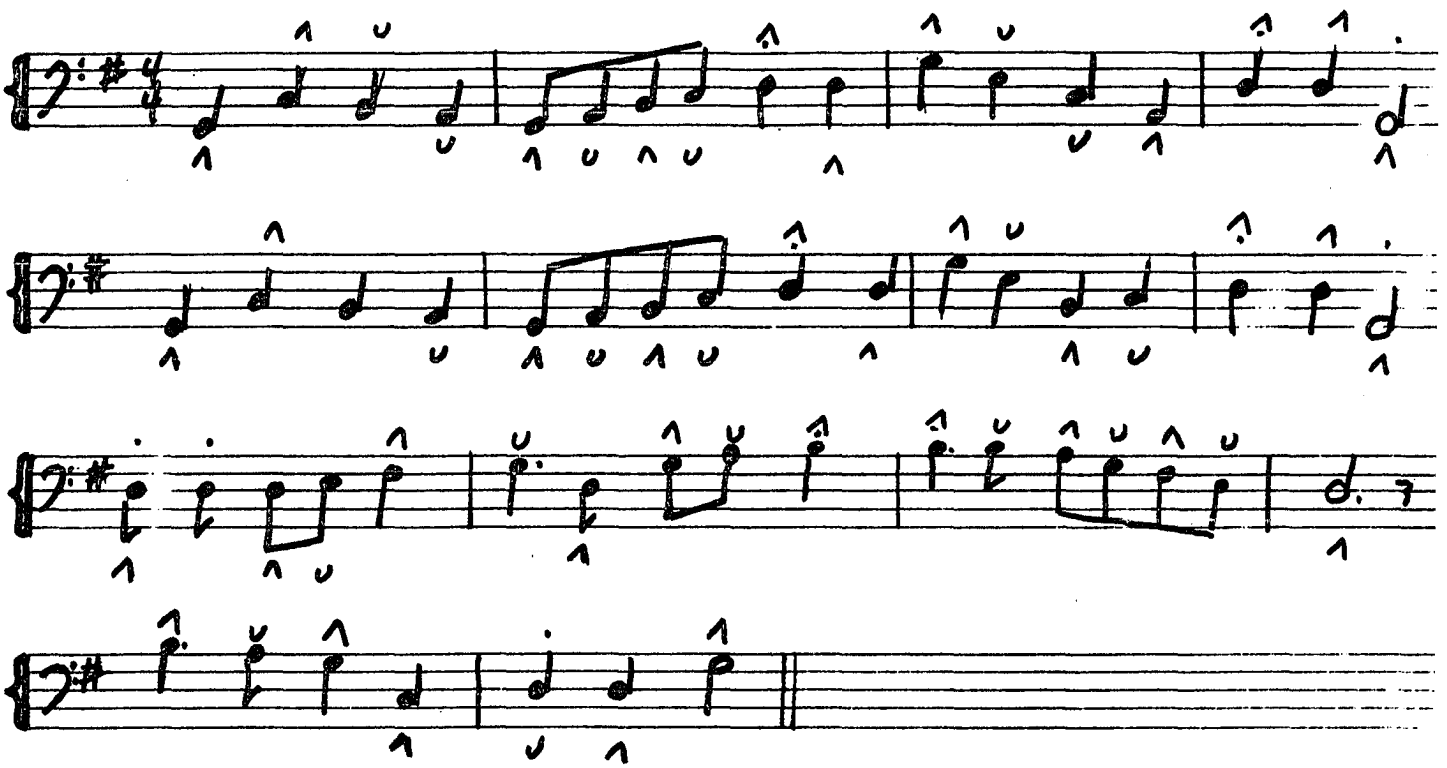
NICAEA John B. Dykes

Pedal

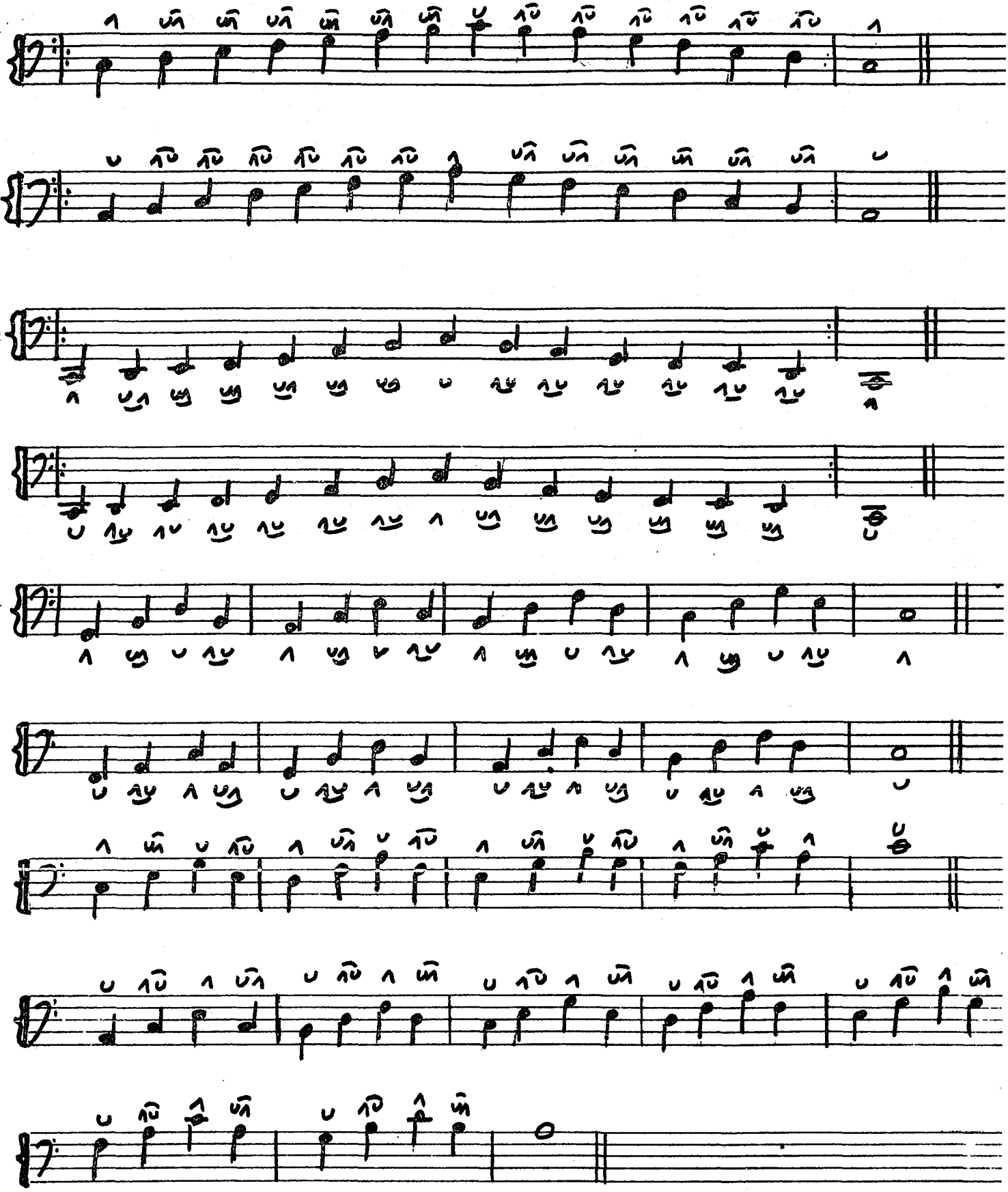


CWM RHONDDA Welsh Hymn Melody

Pedal

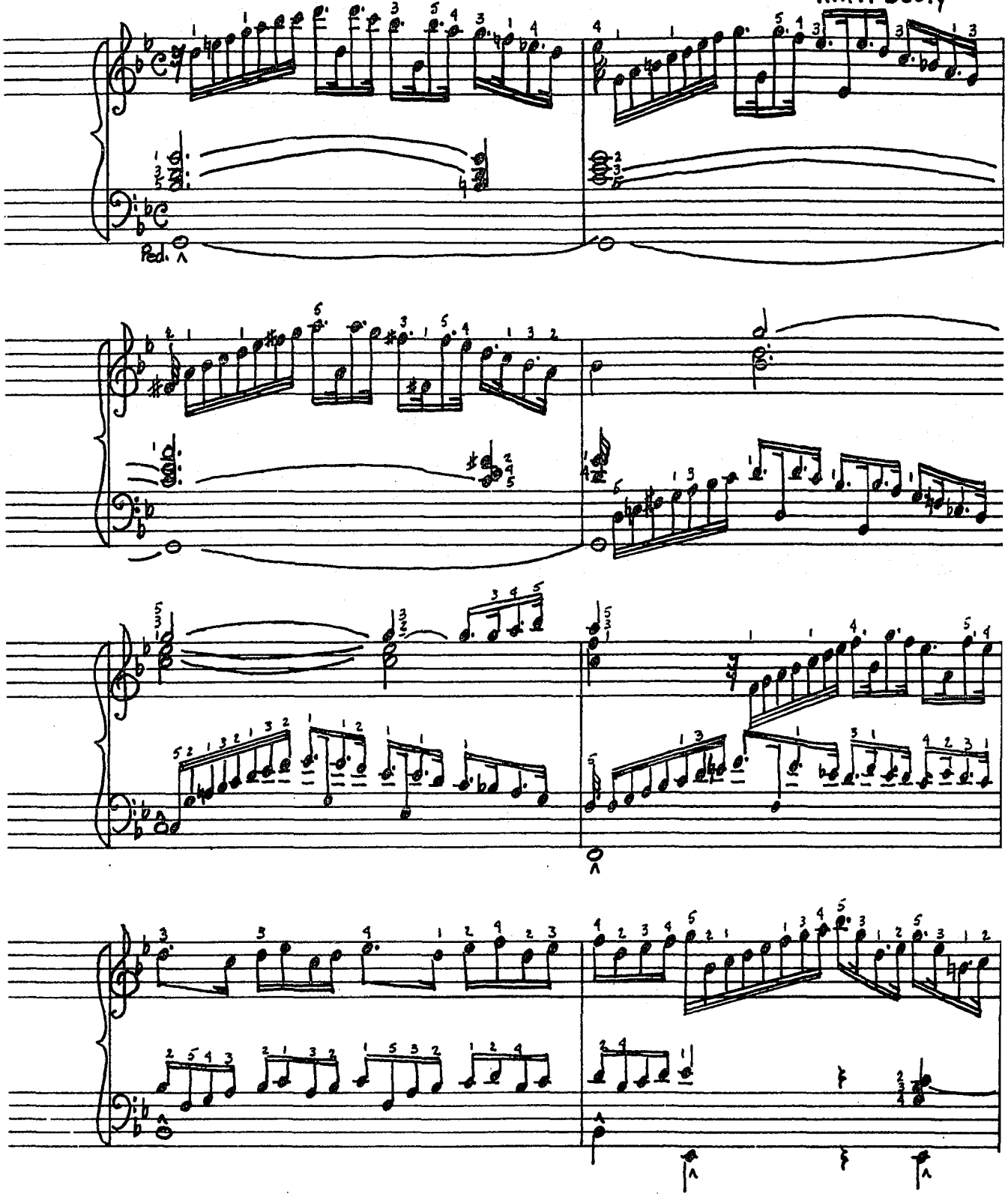


Substitution with one foot.



Verset

A.P.F. Boely

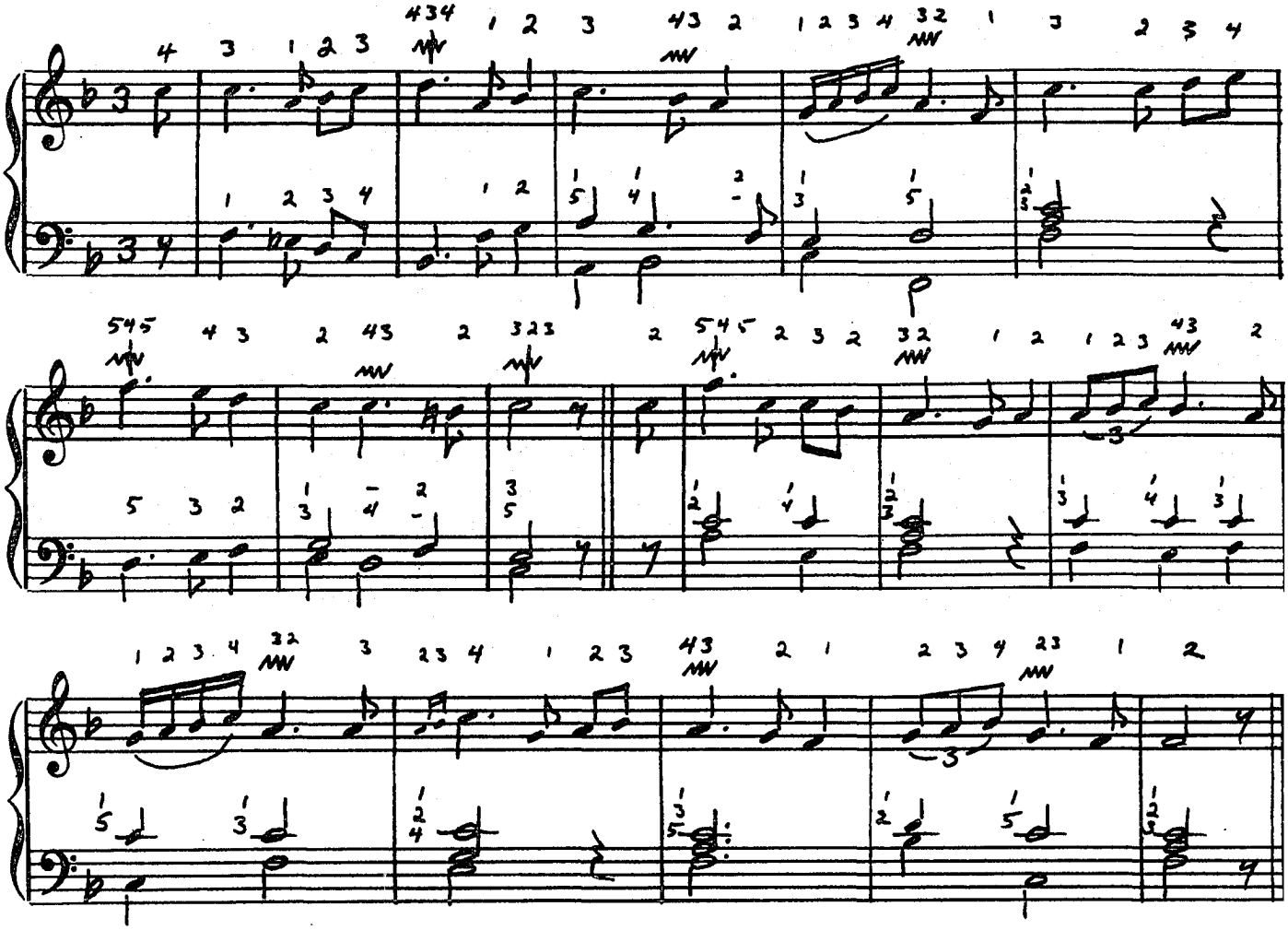


LESSON VII

O NUIT HEUREUSE NUIT

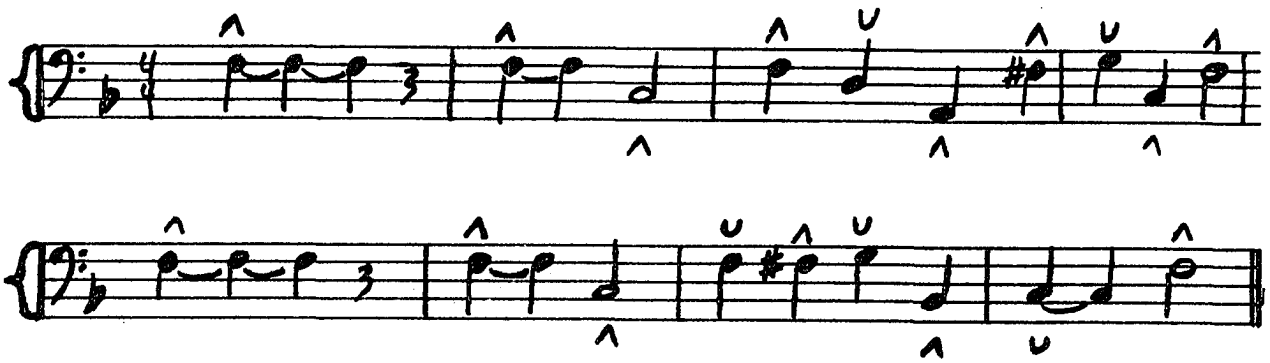
(Noel)

J. F. Dandrieu

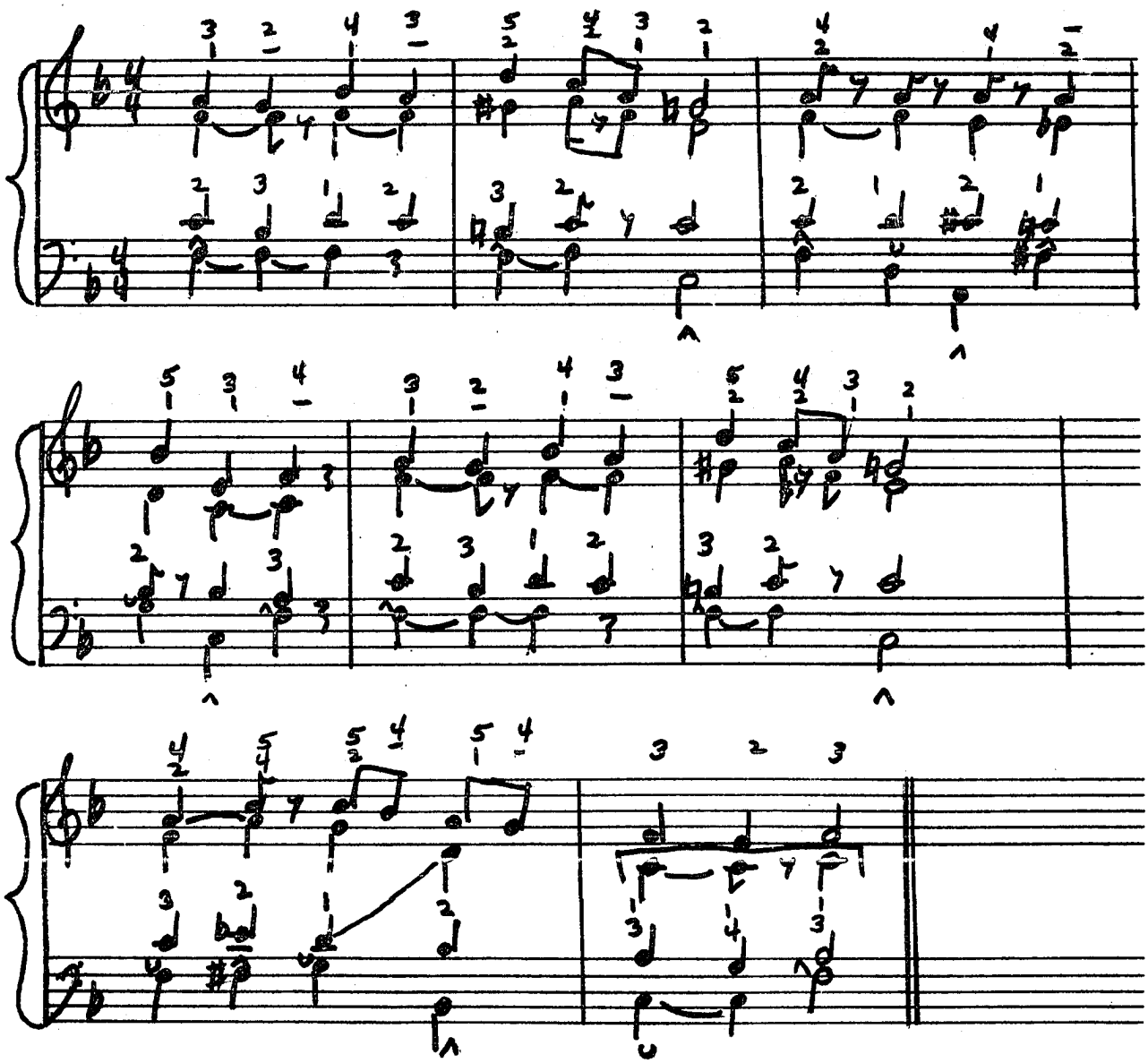


SEYMOUR Carl M. von Weber

Pedal

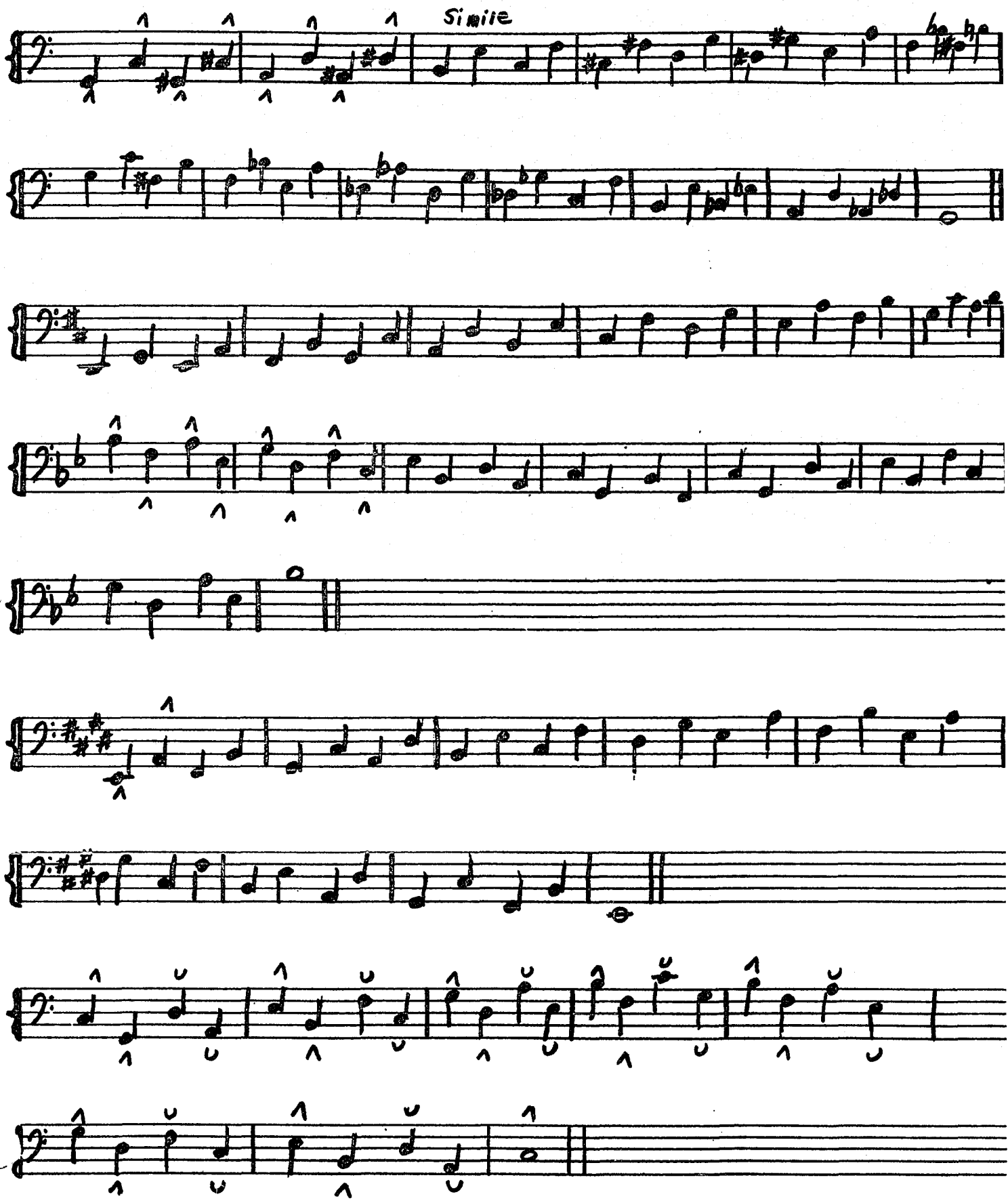


You will find SEYMOUR written as follows in the hymnal. Play the soprano and alto notes with the right hand, tenor note with the left hand and the bass part is played with the feet.

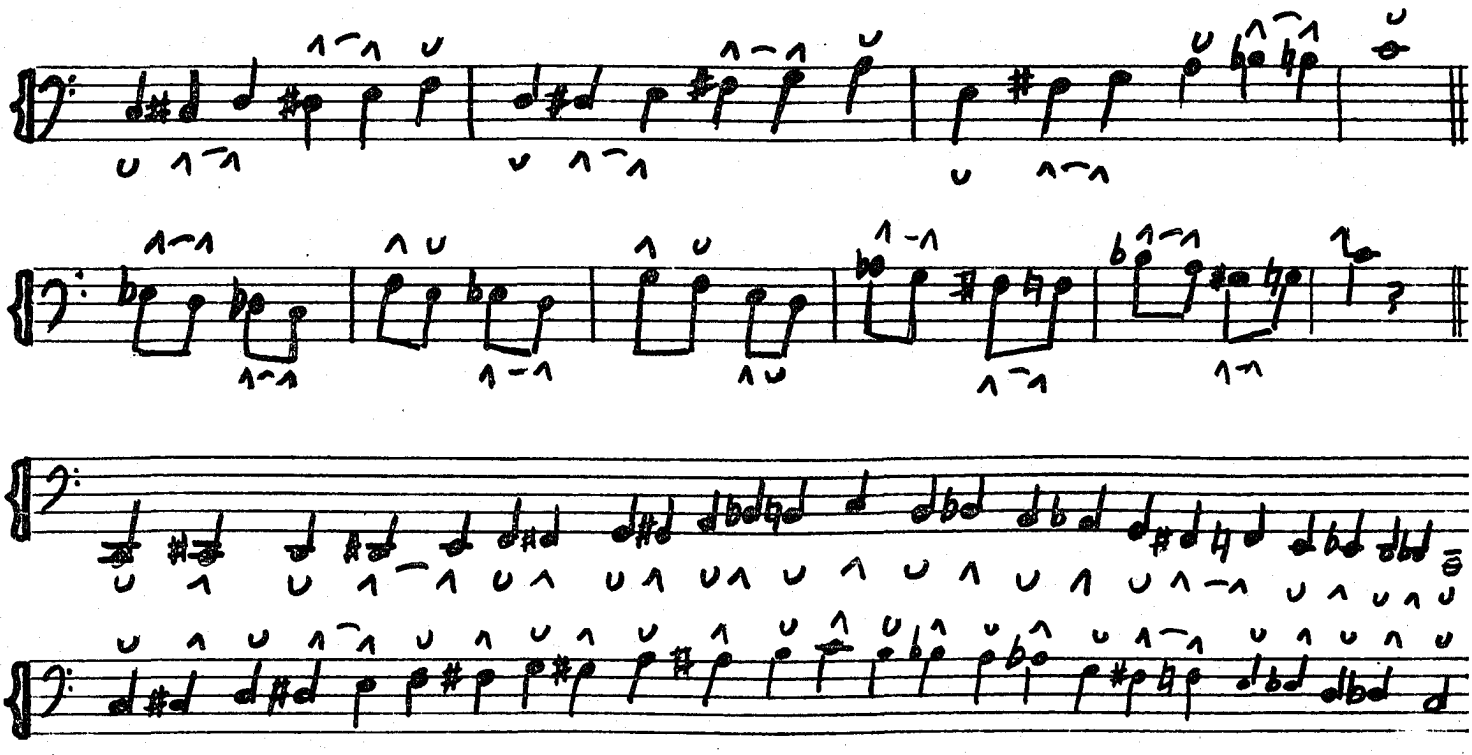


Assignment: XL. "In Thee is joy"
XII. "Christ lay in the bonds of death",
The Seventy-Nine Chorales For The Organ
by Marcel Dupre, H. W. Gray Co.

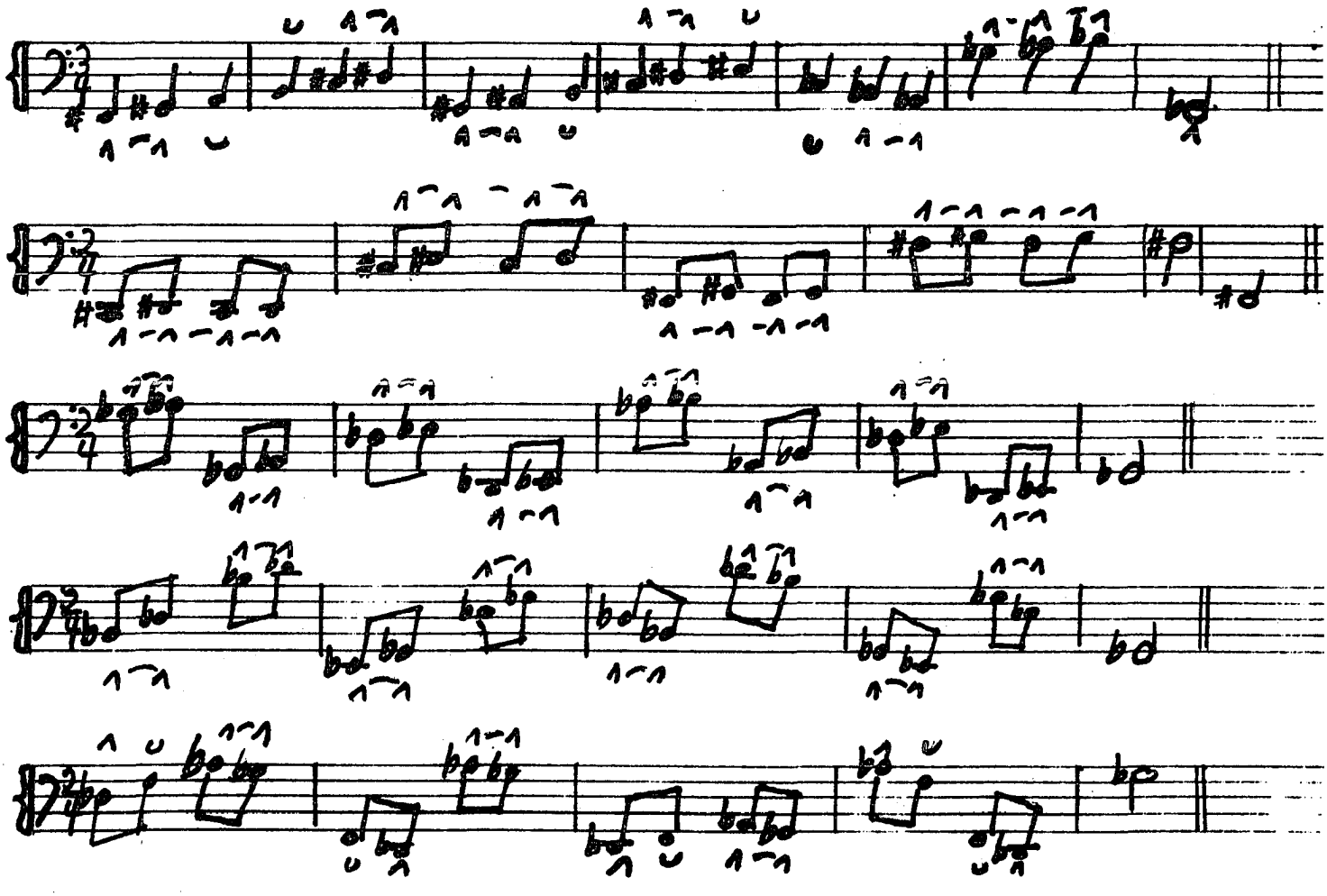
Alternating toes in 4ths.



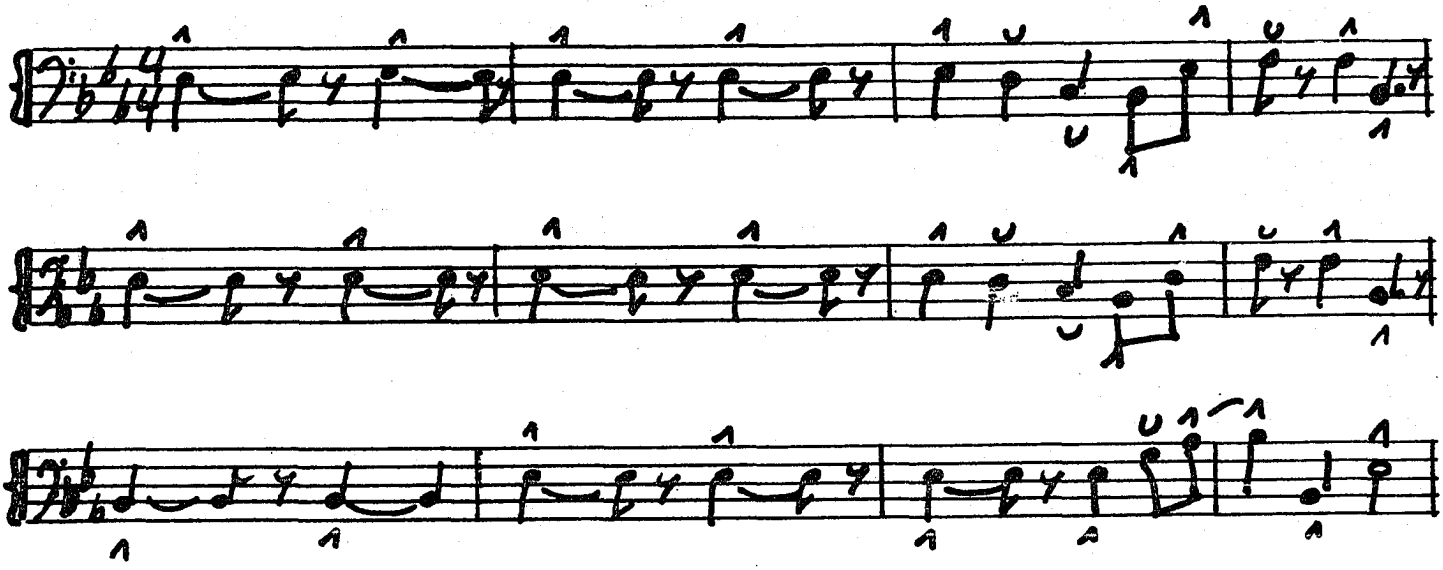
Glissando from a black note to a white note.



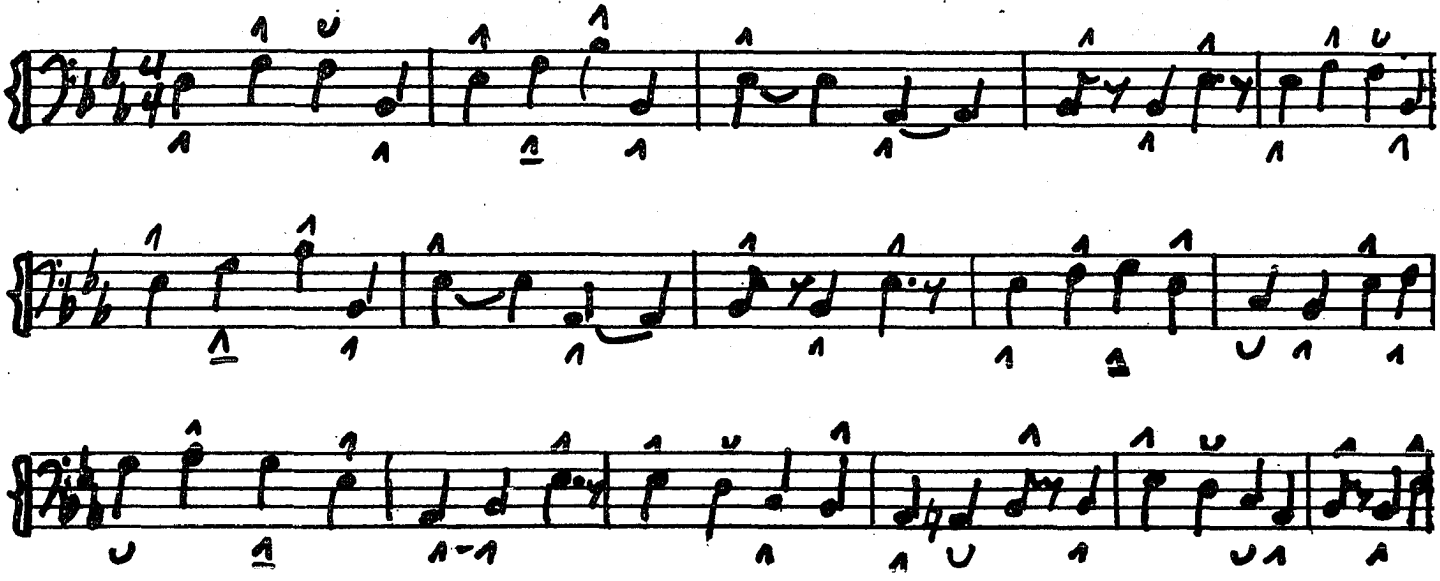
Glissando from a black note to a black note.



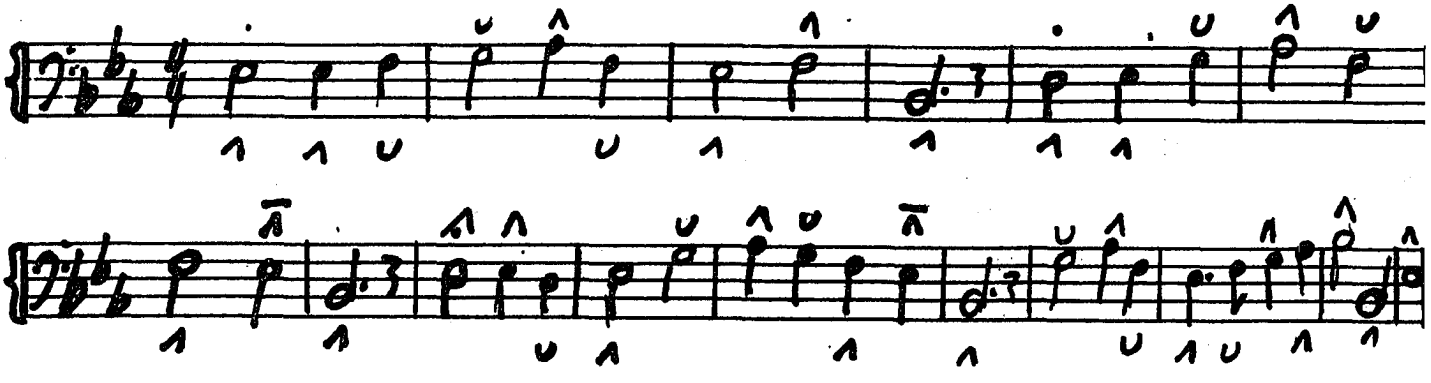
Sicilian Mariners' Hymn



Vesper Hymn

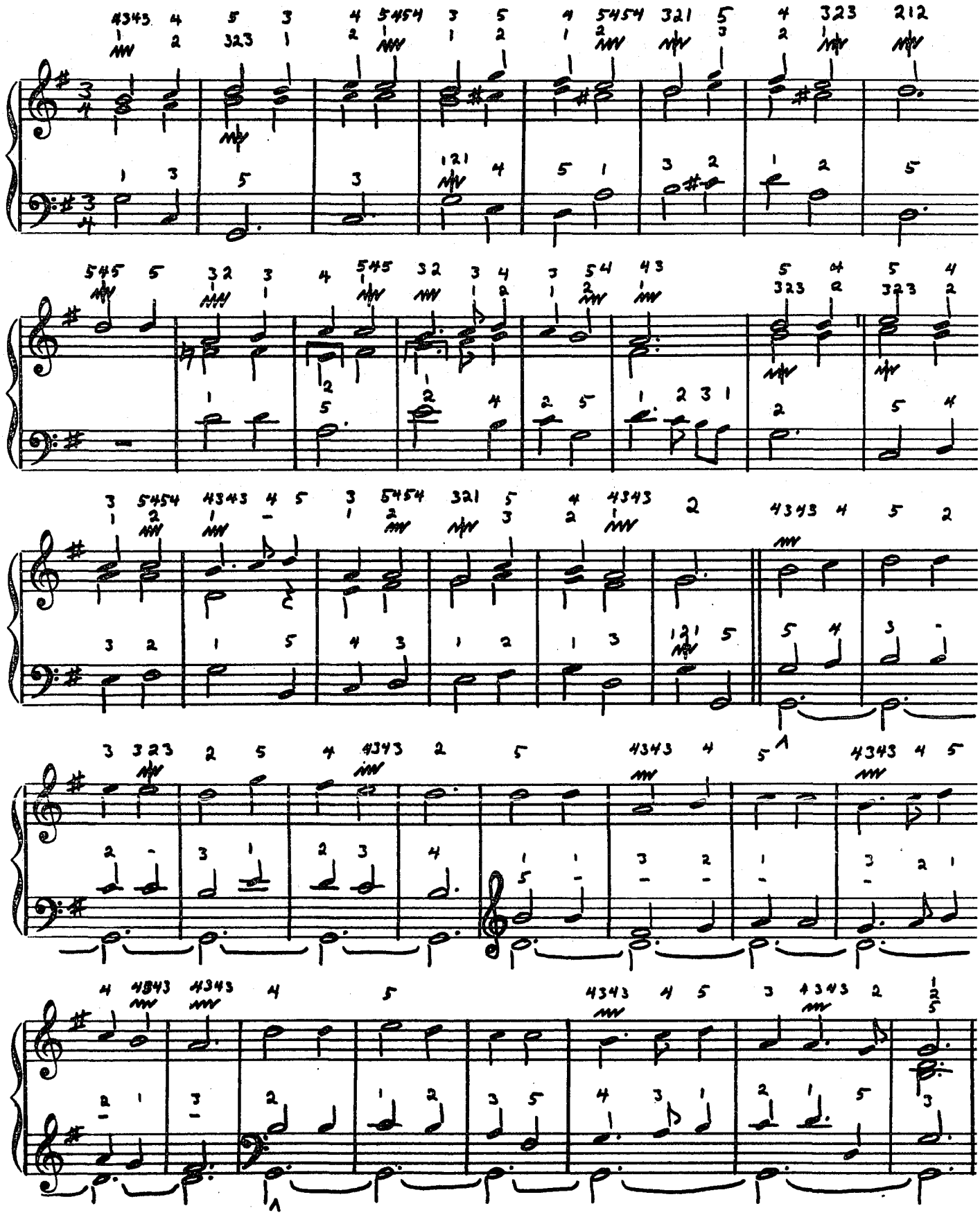


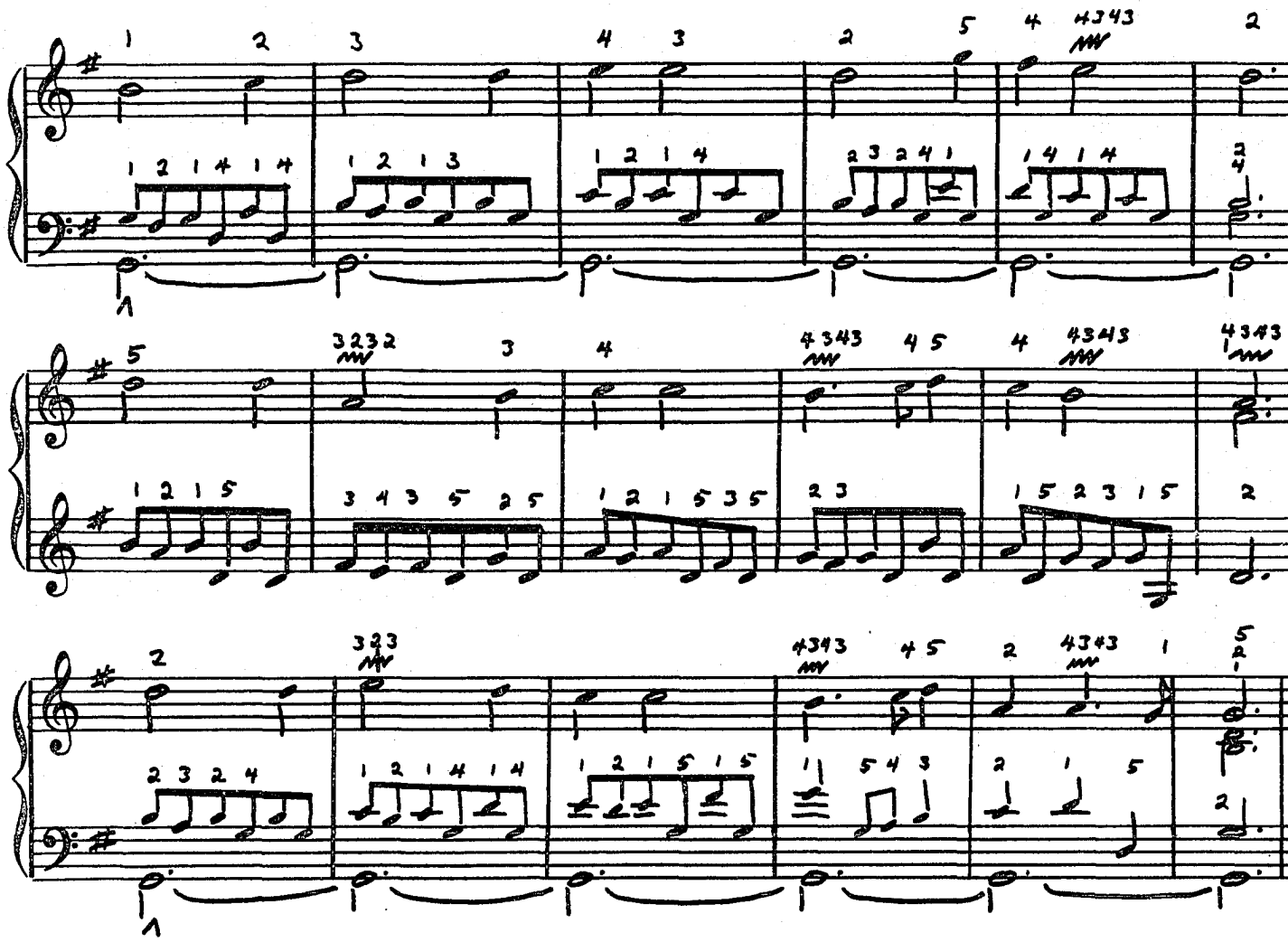
Duke Street



Vous qui desirez sans fin

J. E. Dandrieu

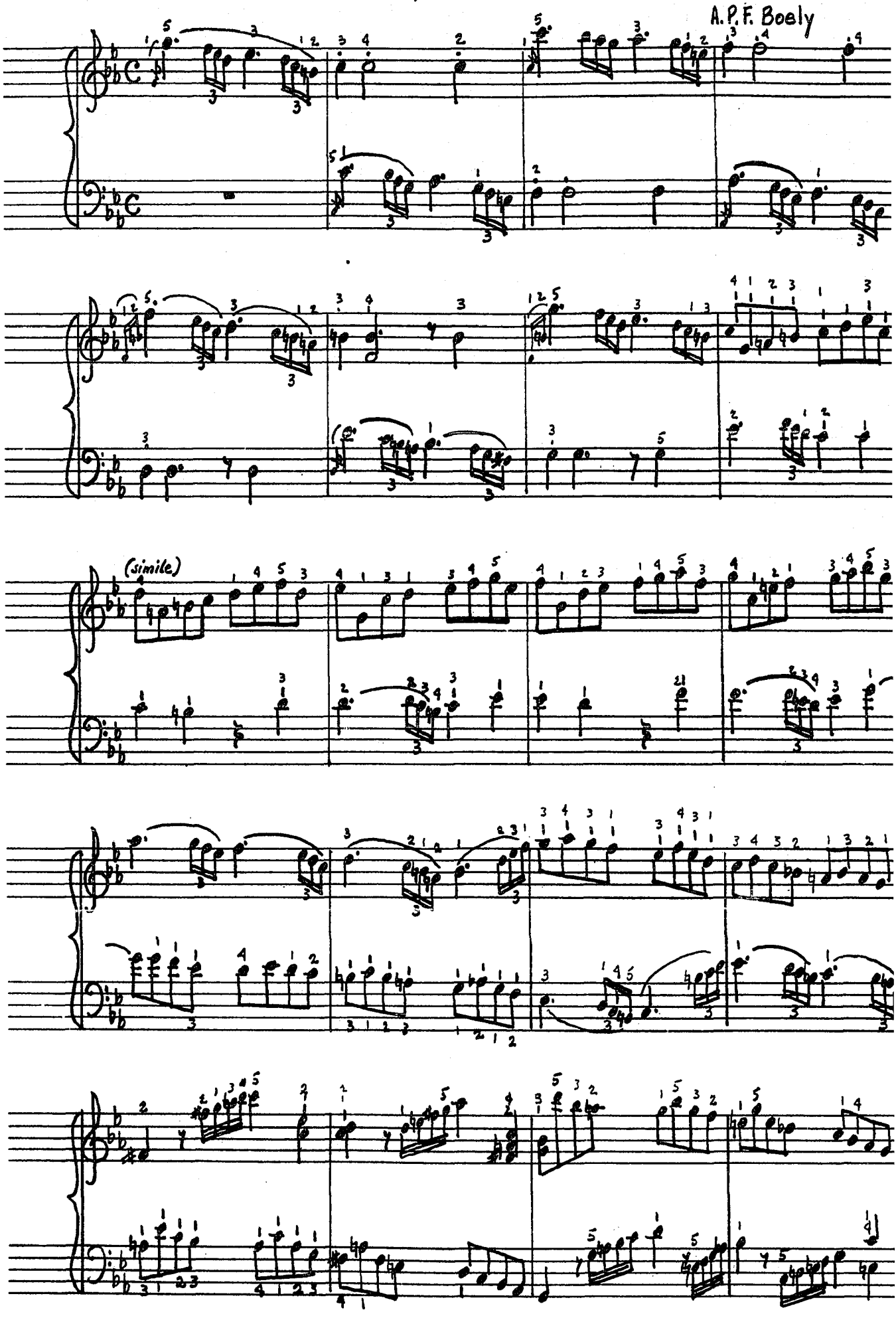


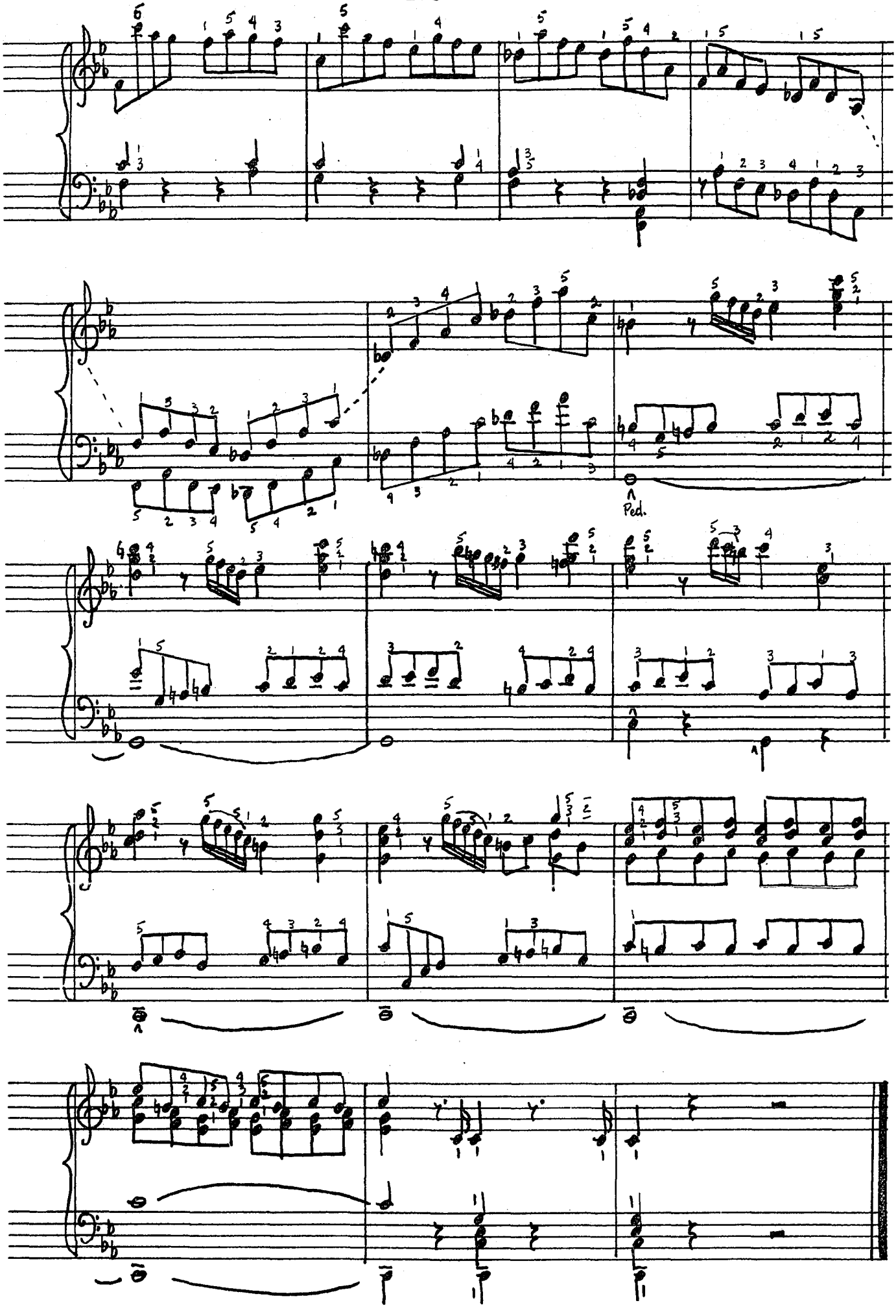


LESSON VIII

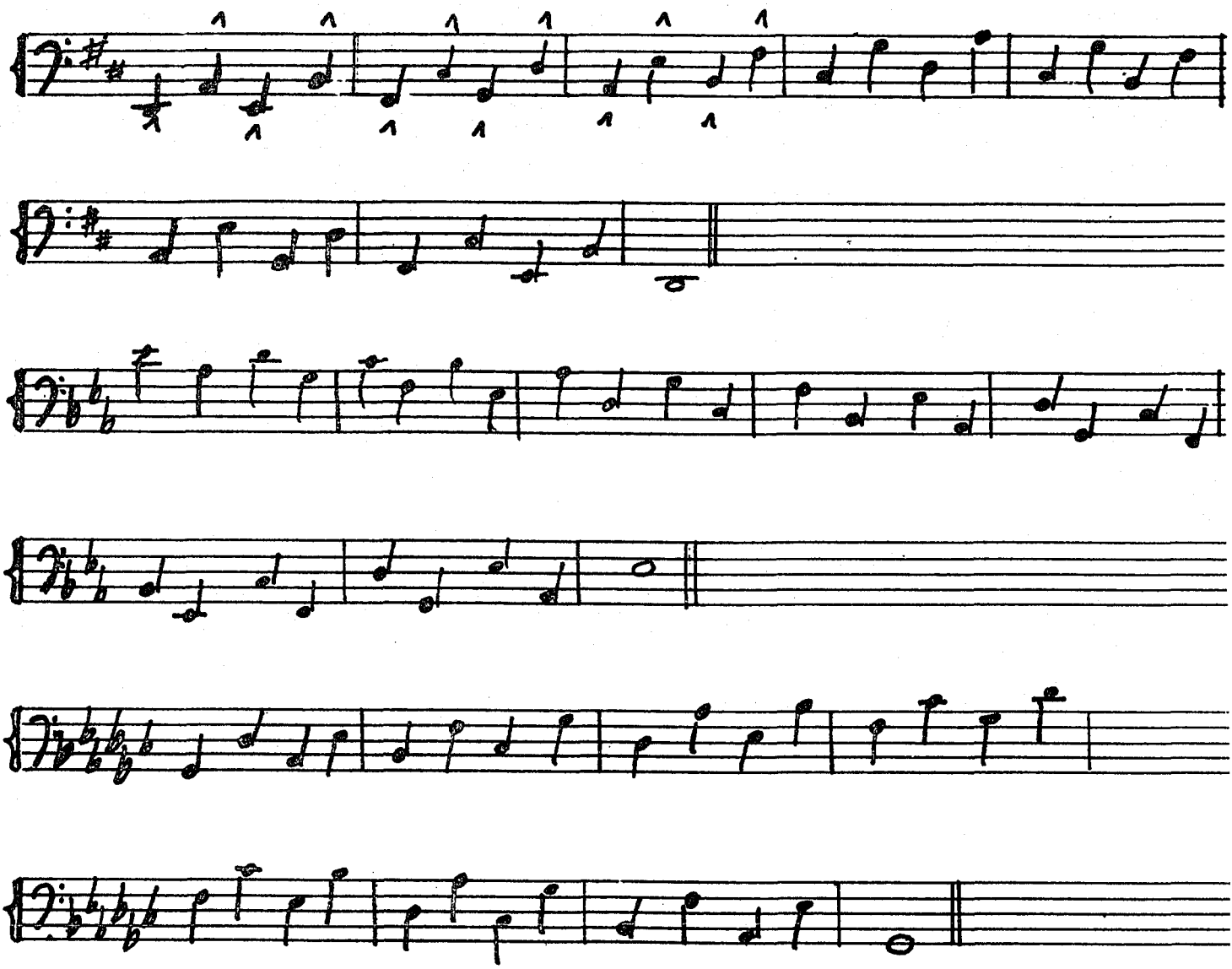
Verset

A.P.F. Boely

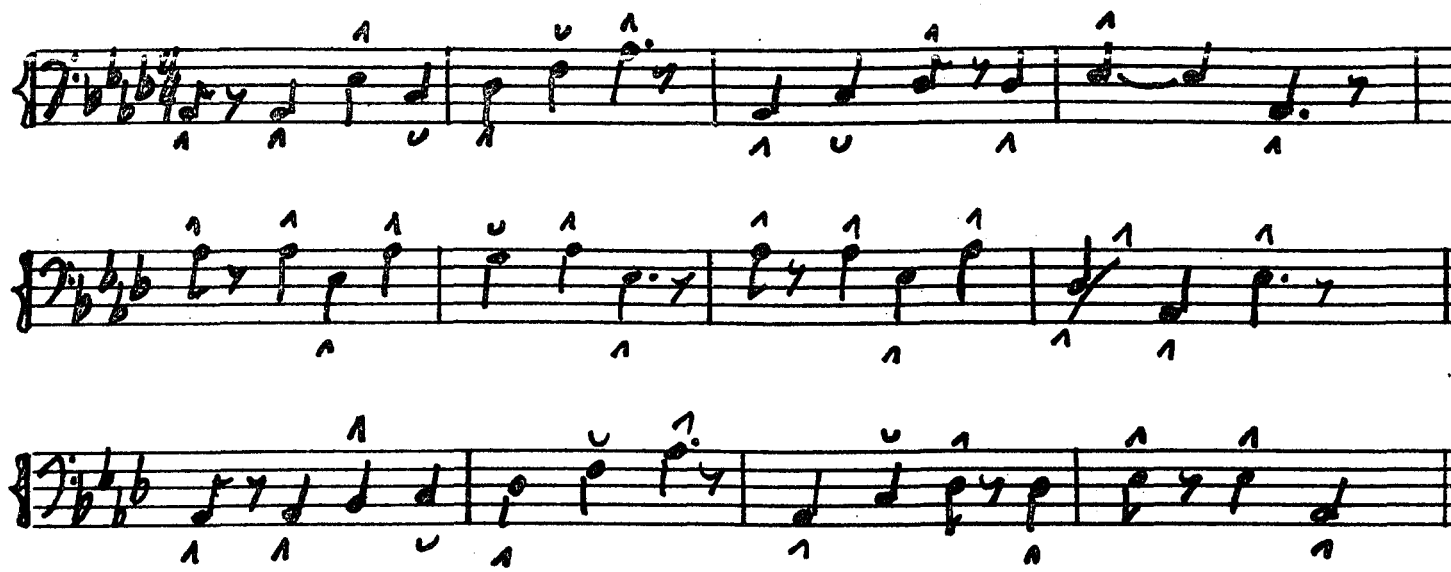



Ped.

Alternating Toes playing 5ths

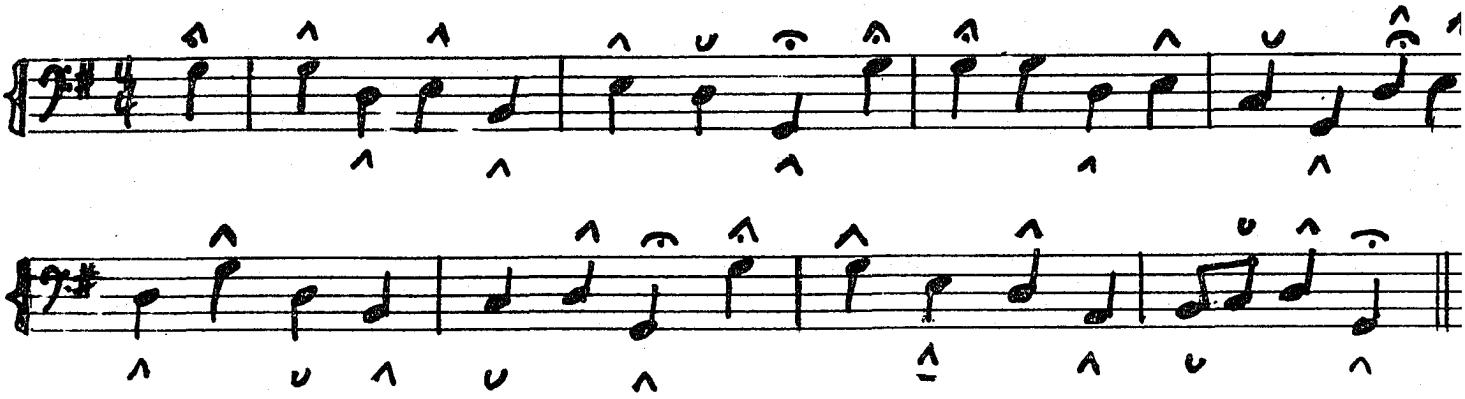


Spanish Hymn



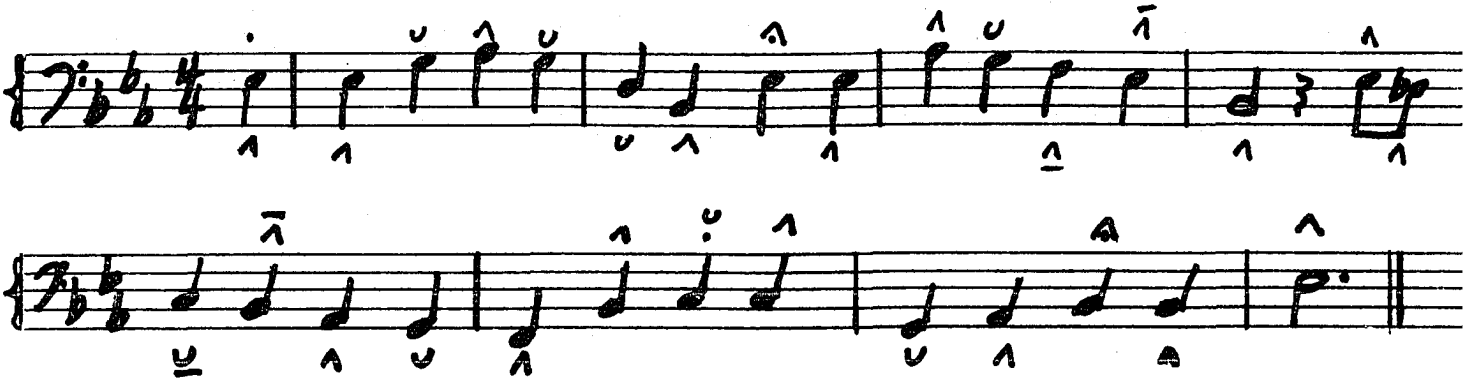
OLD 100th Genevan Psalter

Pedal



ST. PETER A. R. Reinagle

Pedal



MARION A. H. Messiter

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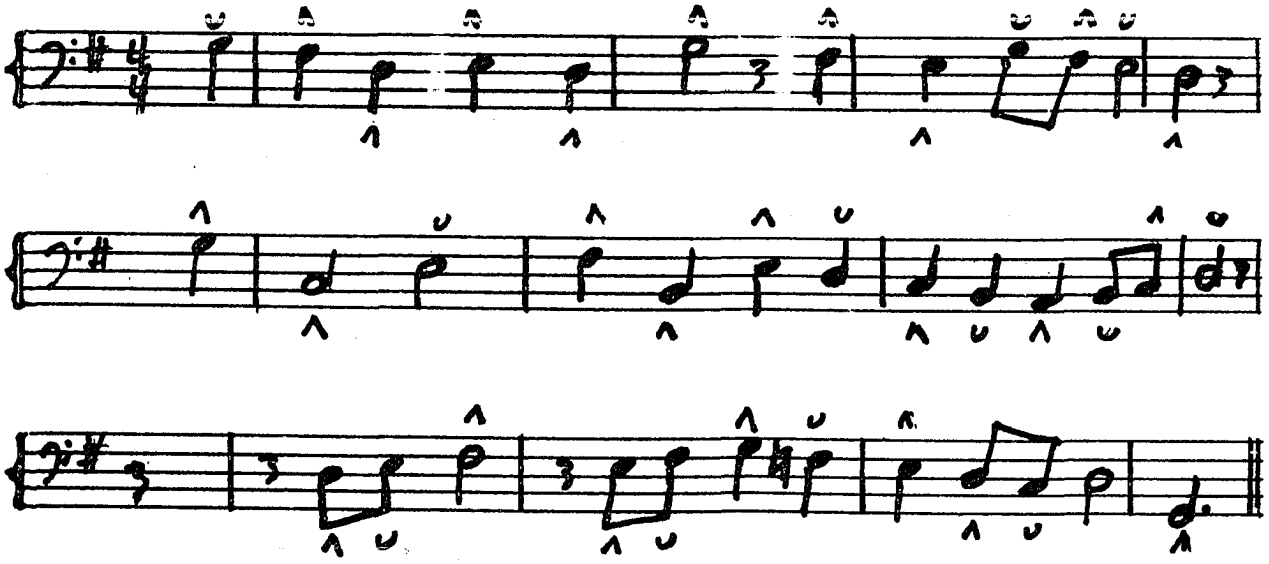
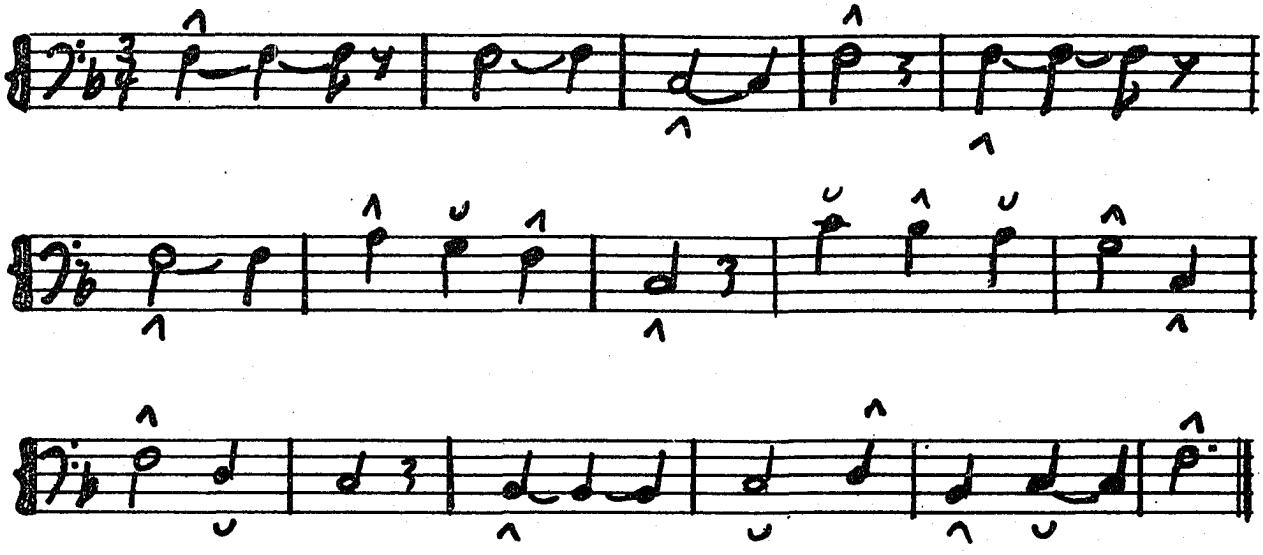


HURSLEY From Katholisches Gesangbuch

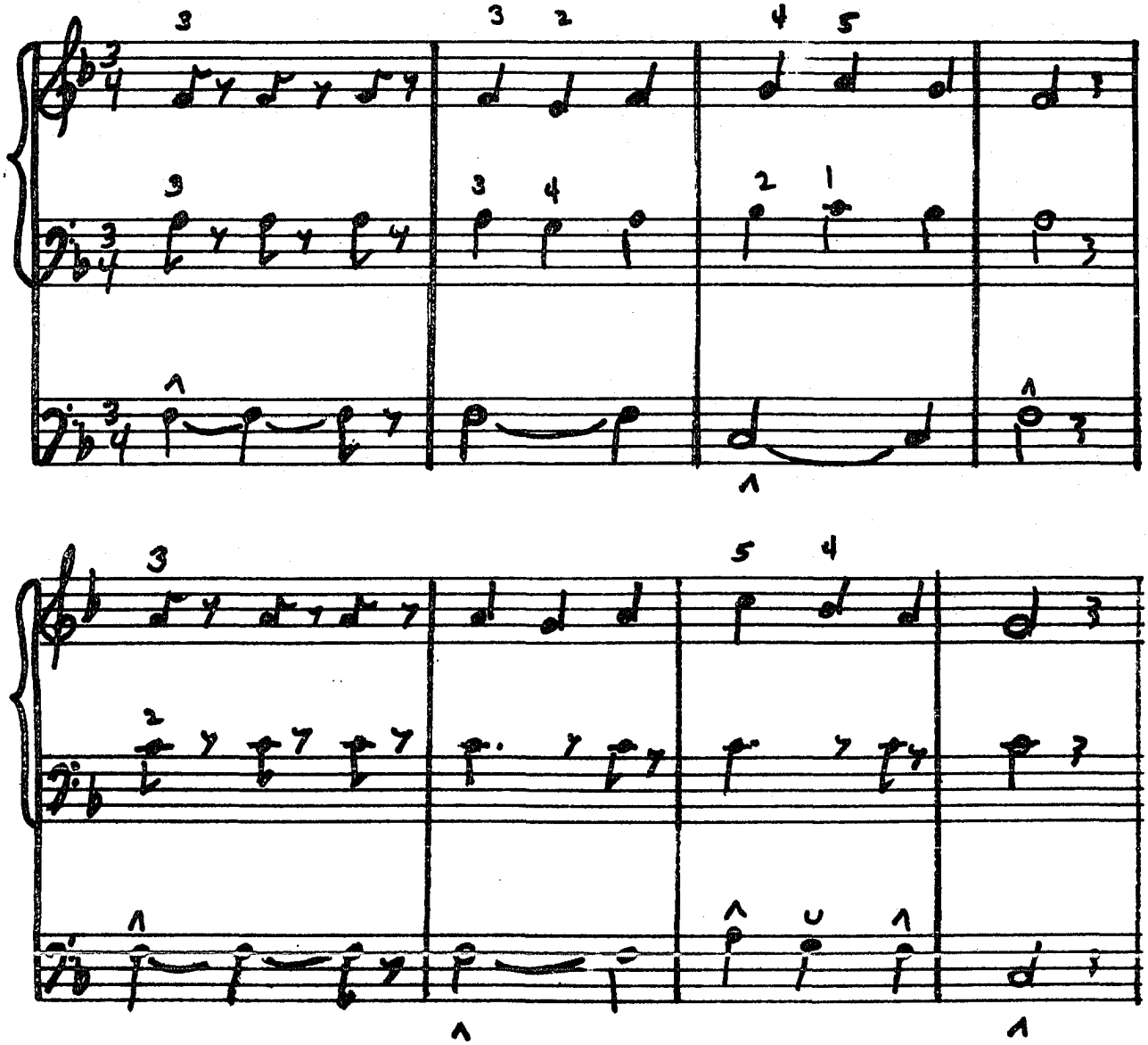
Pedal

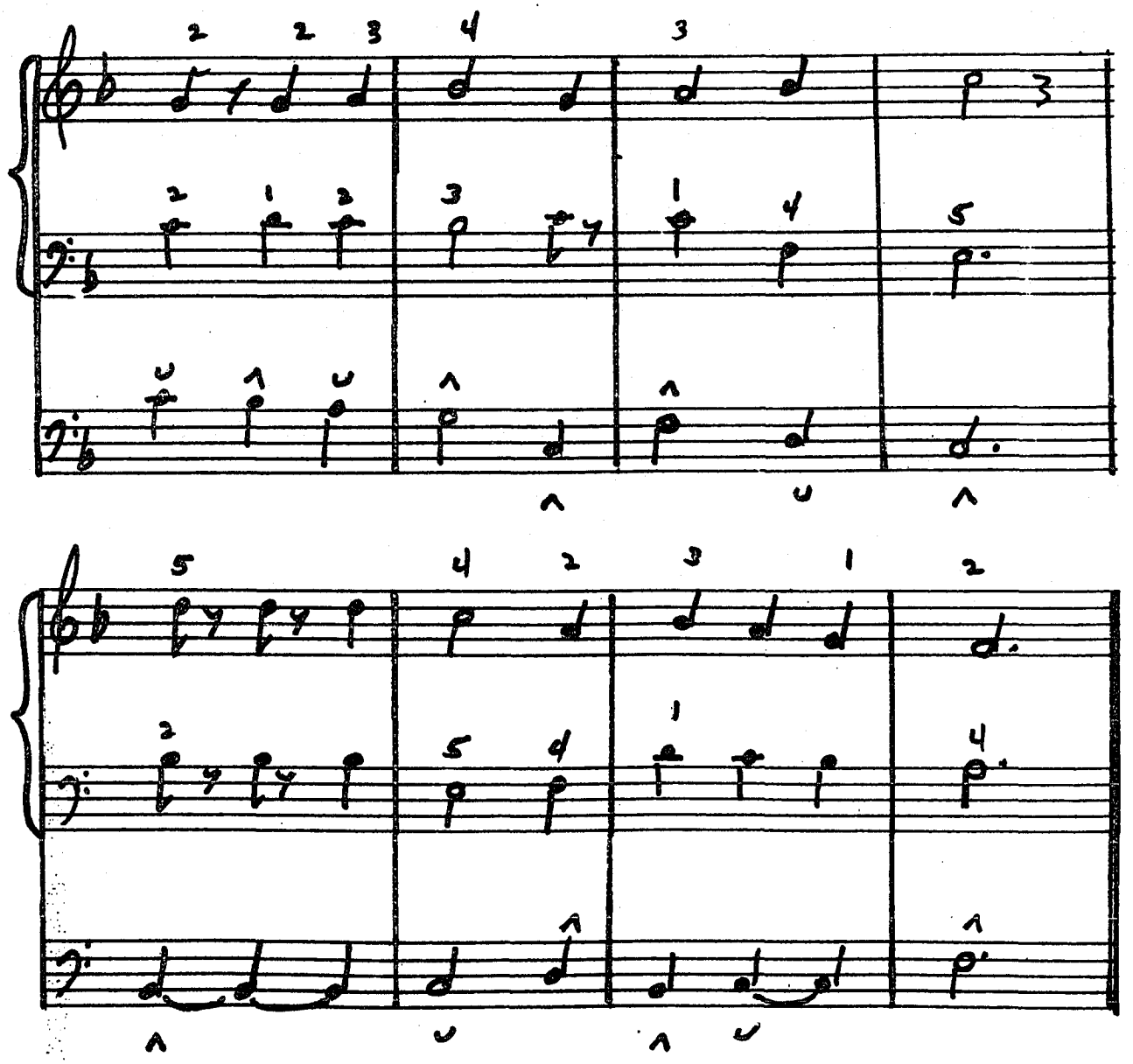


Assignment: XXI. "Through Adam's fall is the world defiled"
LXXI. "Before Thy Throne I will appear",
The Seventy-Nine Chorales For The Organ by
Marcel Dupré, H. W. Gray Co.

HURSLEY From Katholisches Gesangbuch

S.T.B.

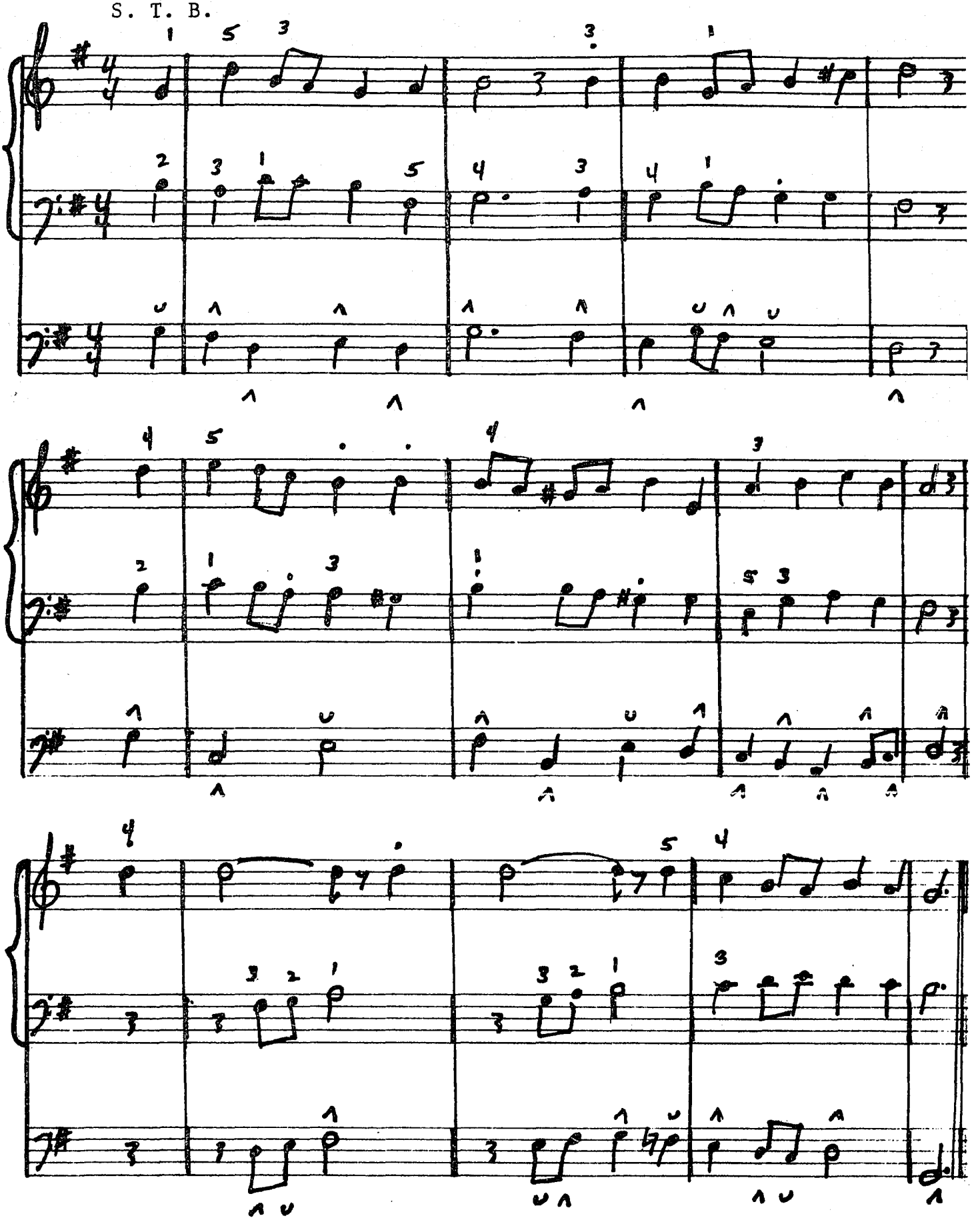




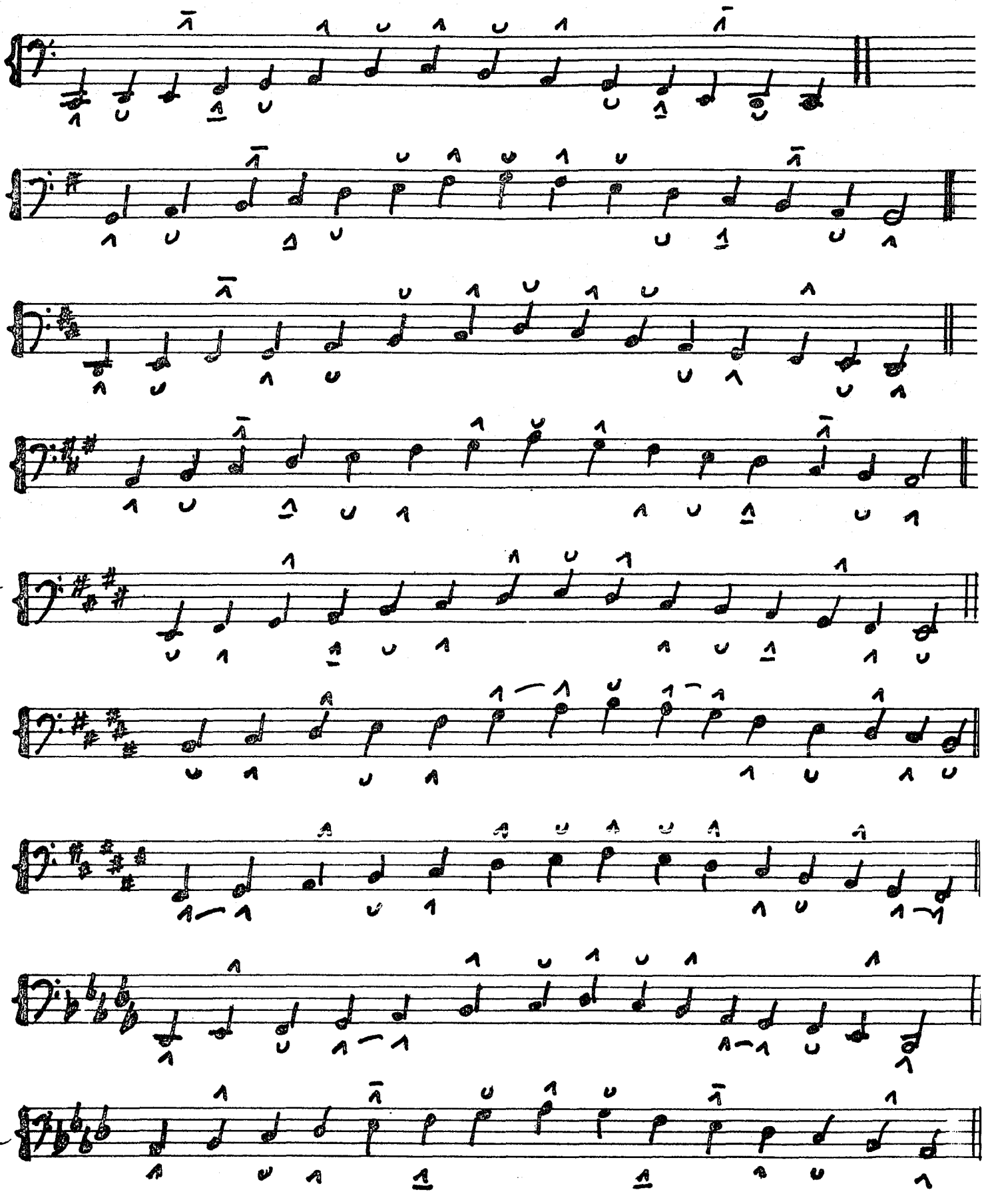
LESSON IX

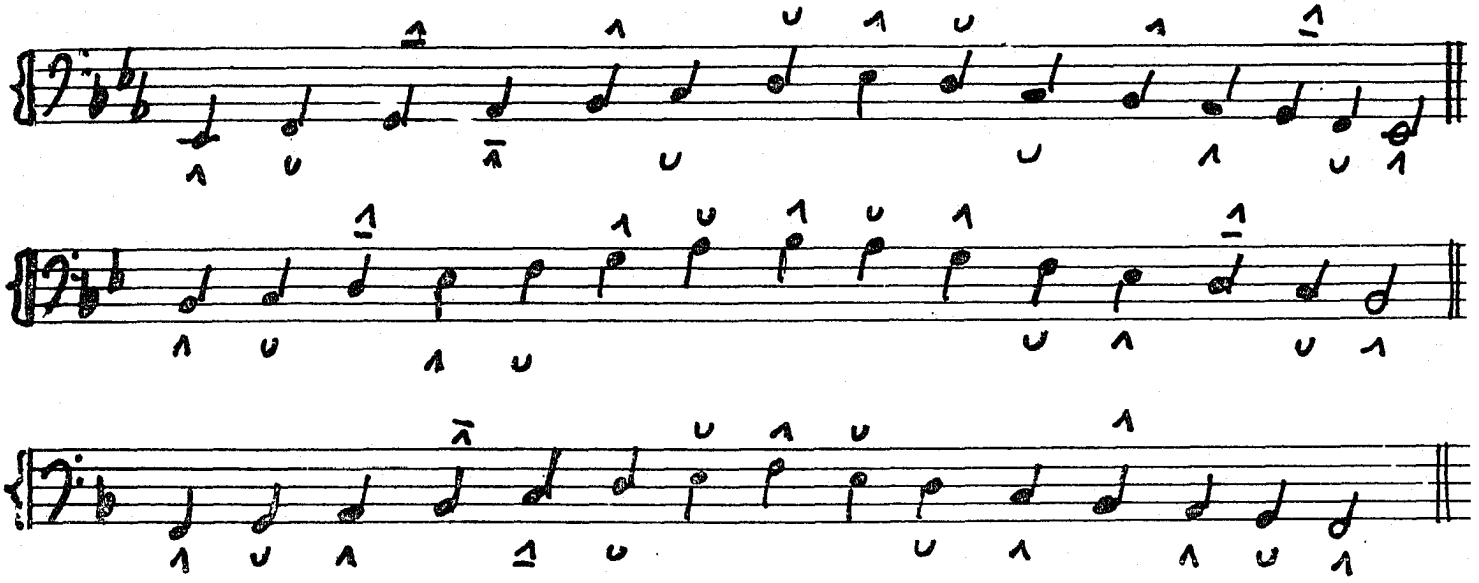
MARION A. H. Messiter

S. T. B.



One Octave Major Scales

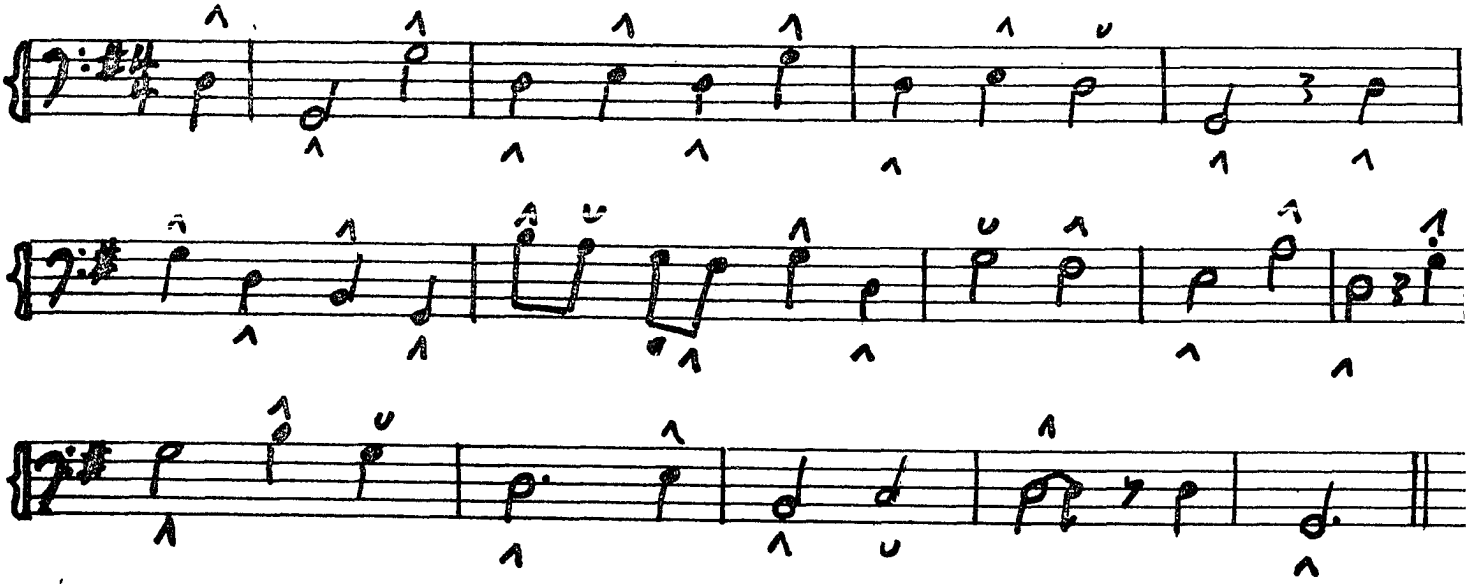




Assignment: LXXII. "Awake! Hear the call of watchmen"
XXVI. "Salvation has been brought unto us",
The Seventy-Nine Chorales For The Organ by
Marcel Dupre, H. W. Gray Co.

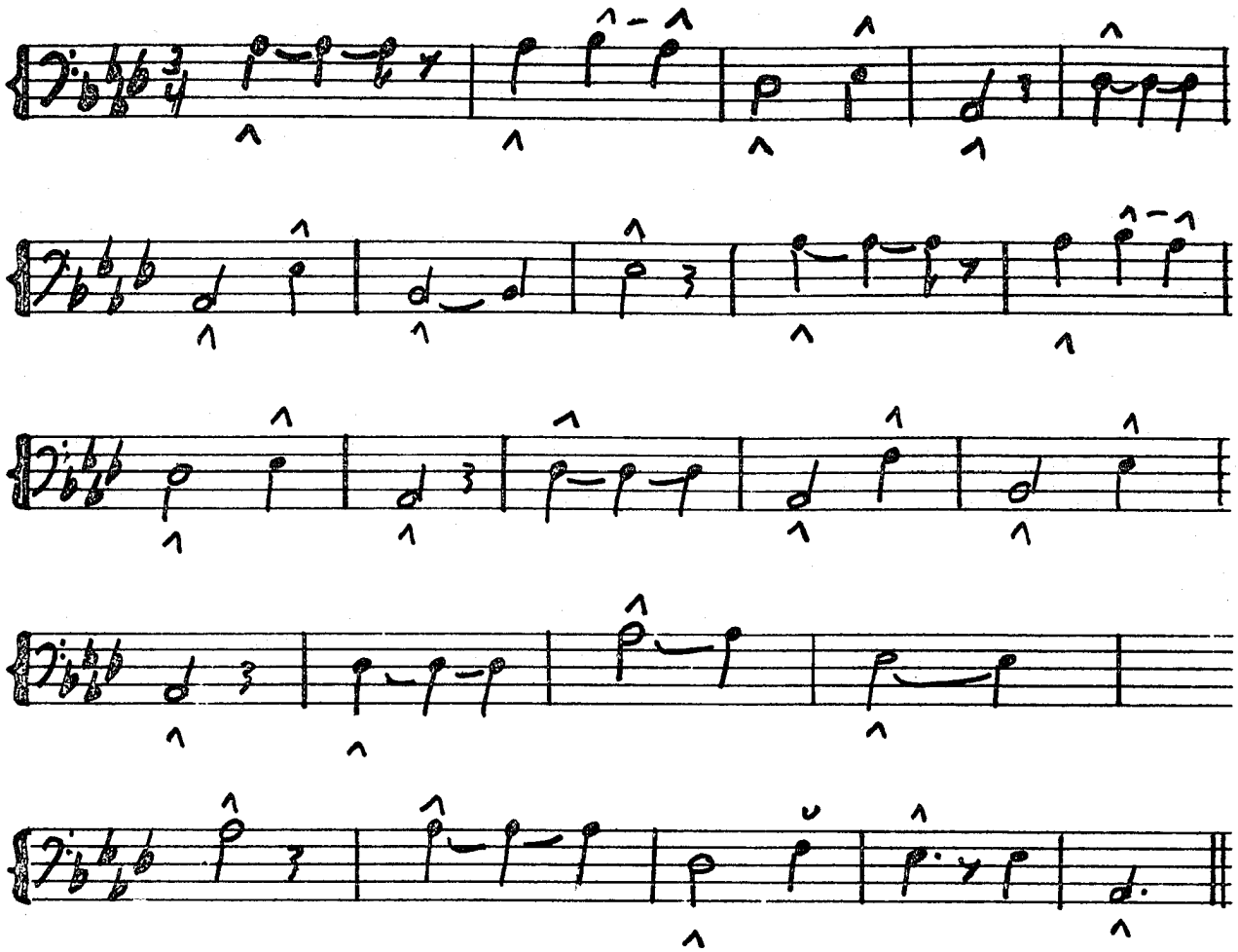
CORONATION Oliver Holden

Pedal



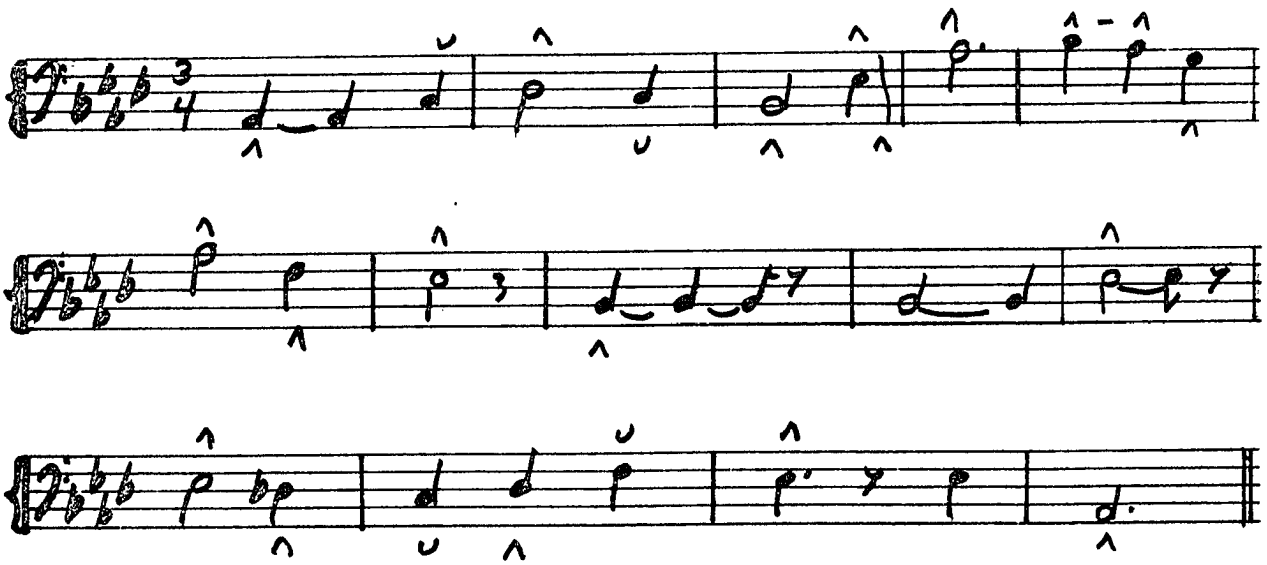
ST. CATHERINE H. F. Hemy

Pedal



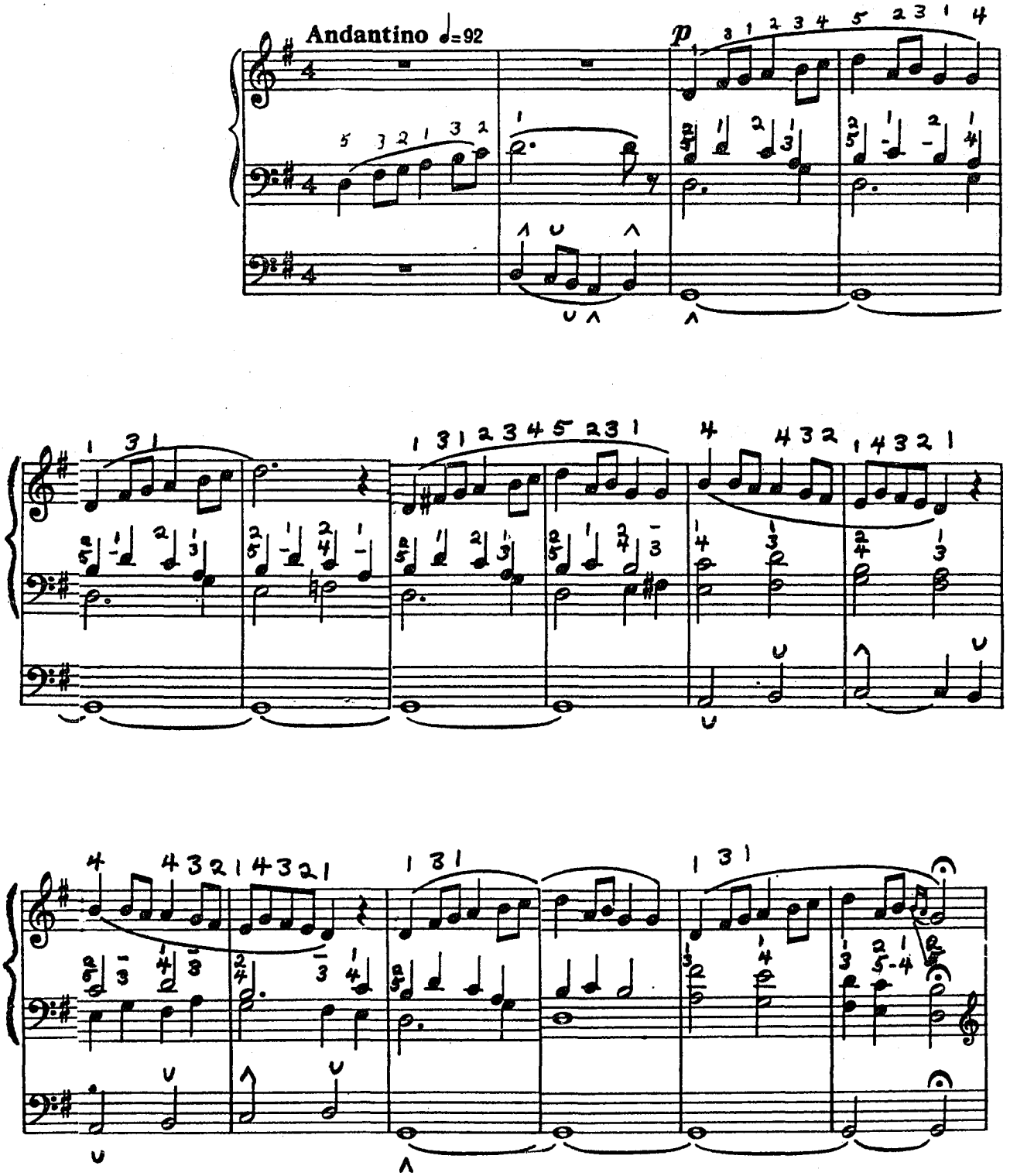
ST. AGNES John B. Dykes

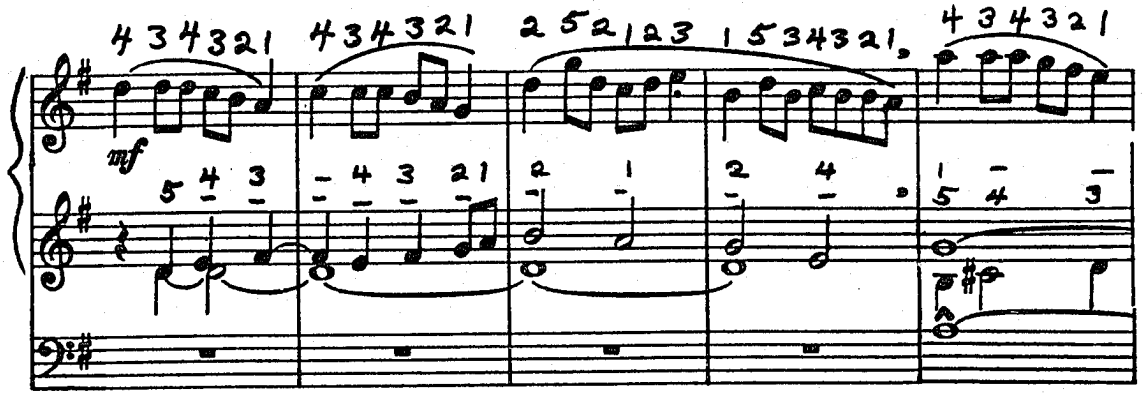
Pedal



Noel Vosqien

Jean Bouvard

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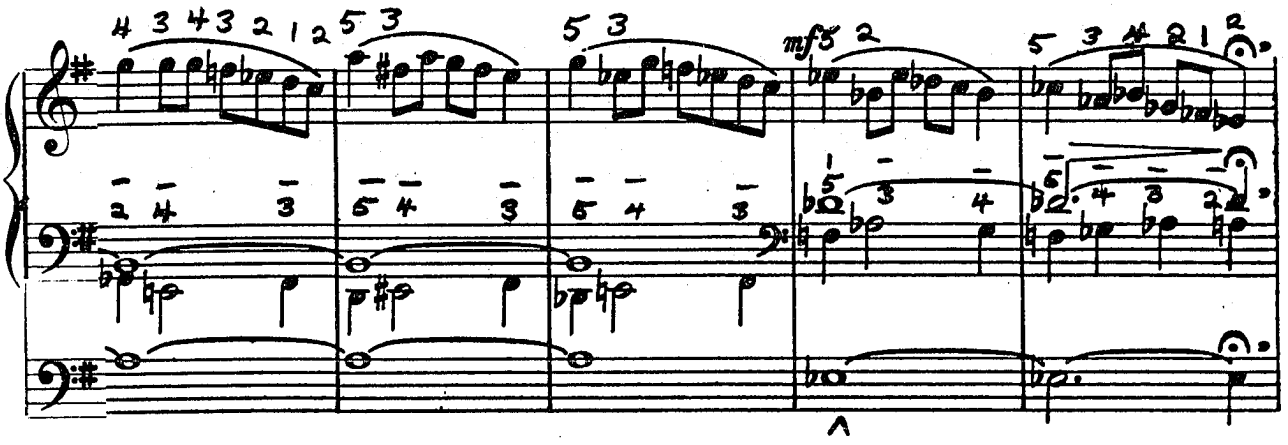
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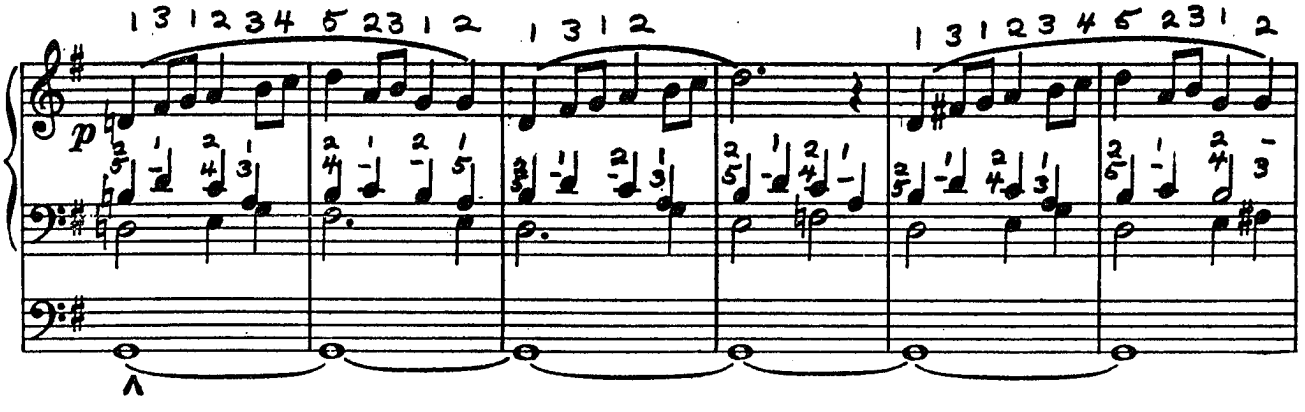
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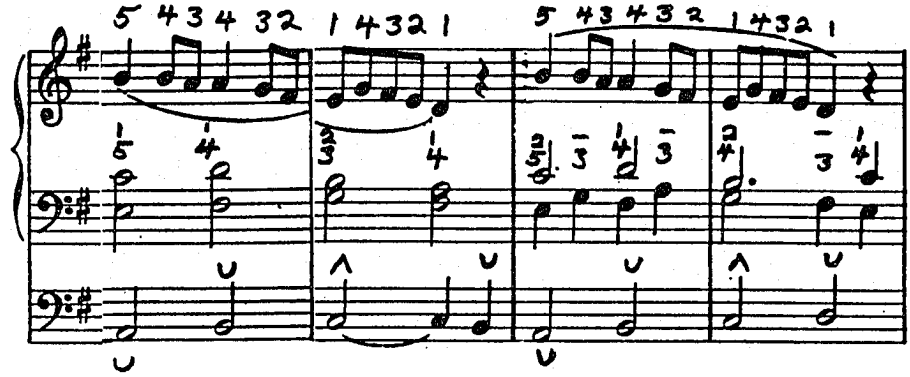

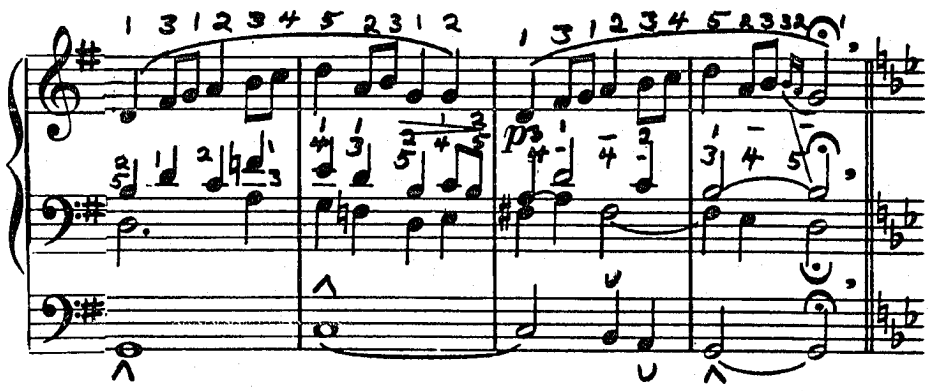

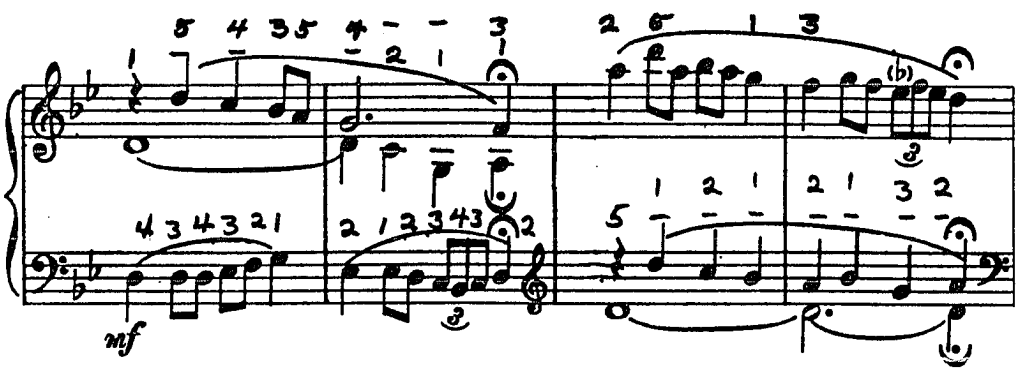

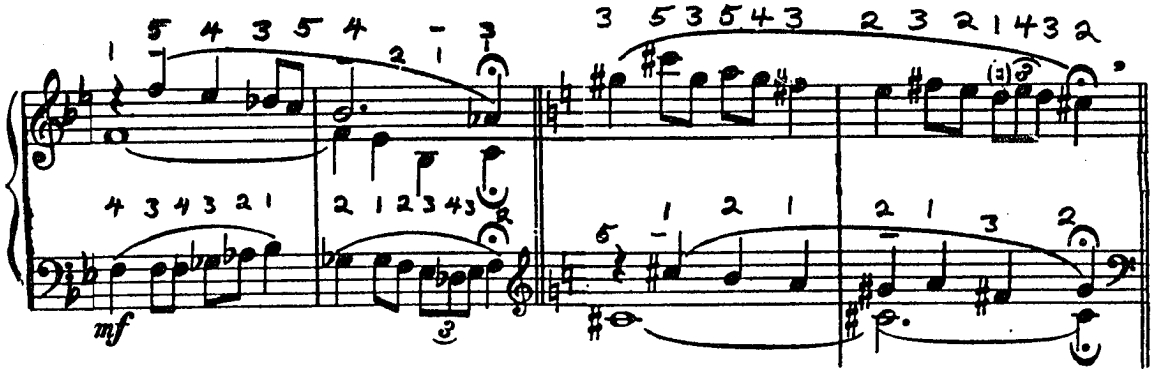

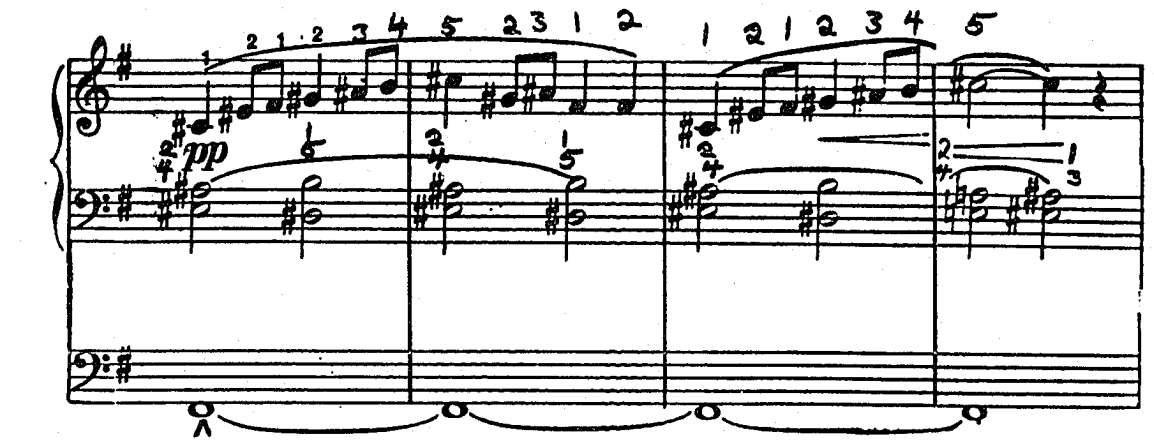
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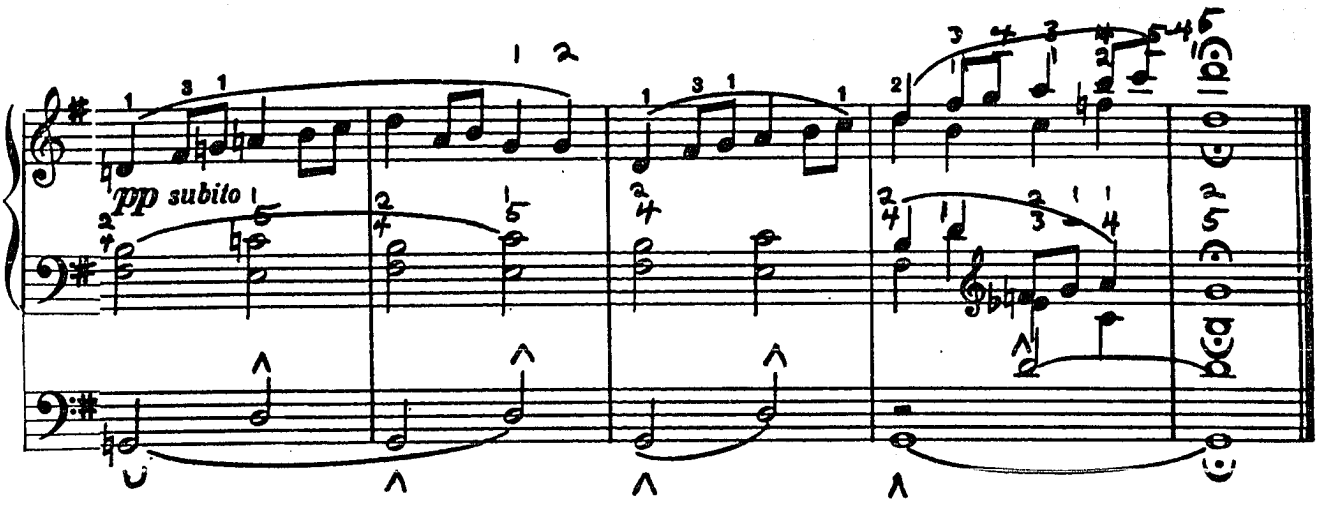
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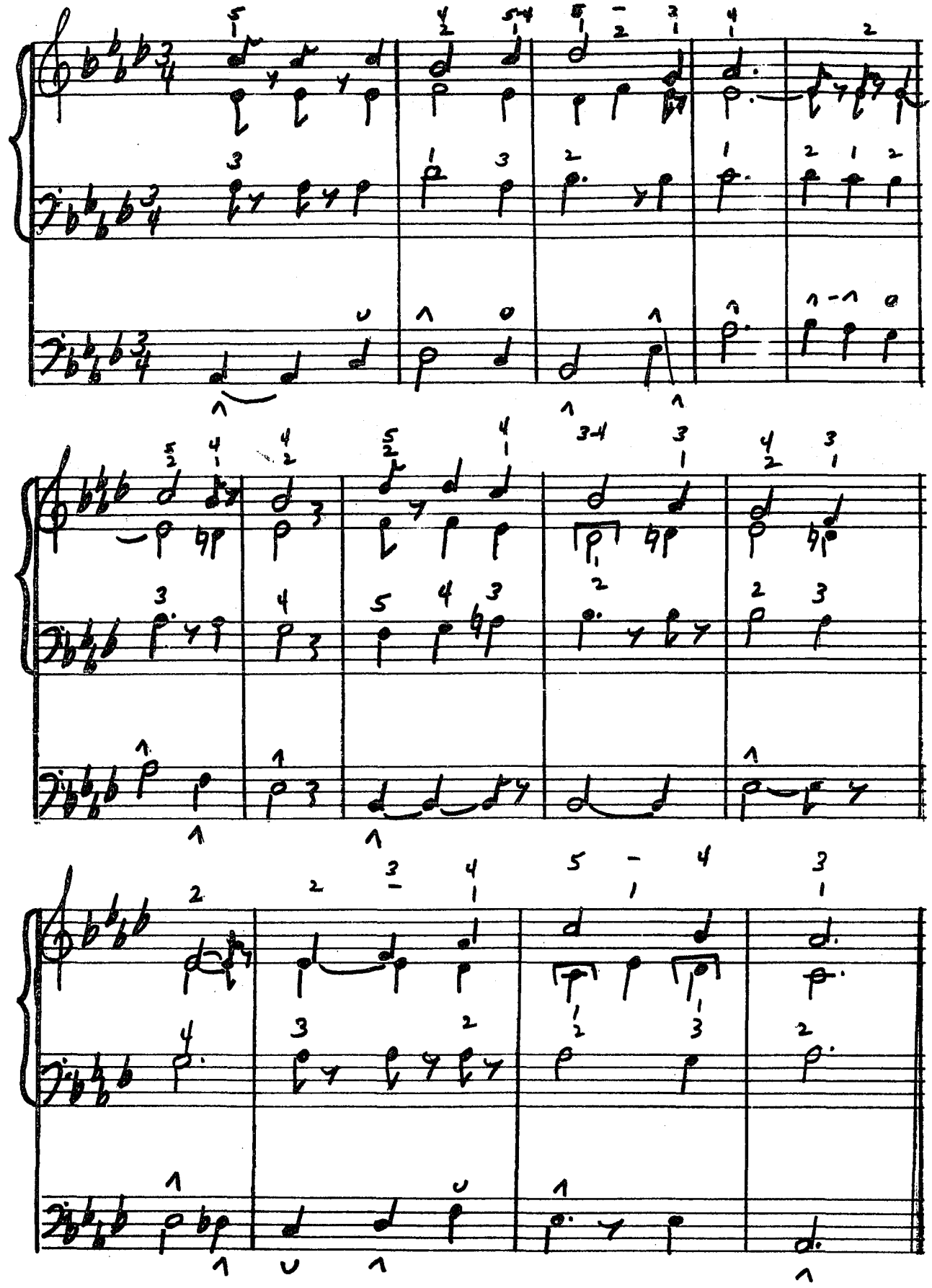
LESSON X

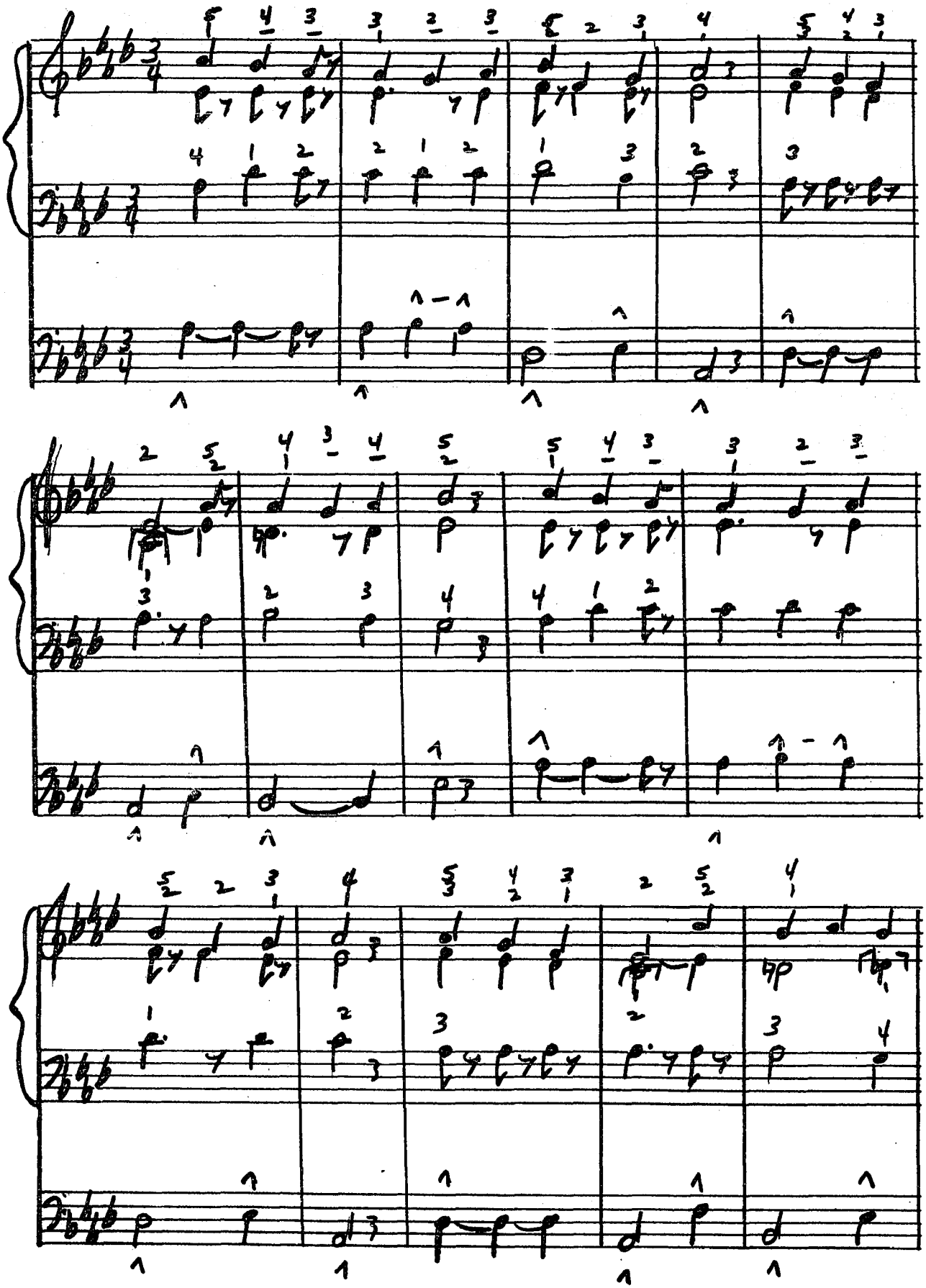
ST. AGNES John B. Dykes

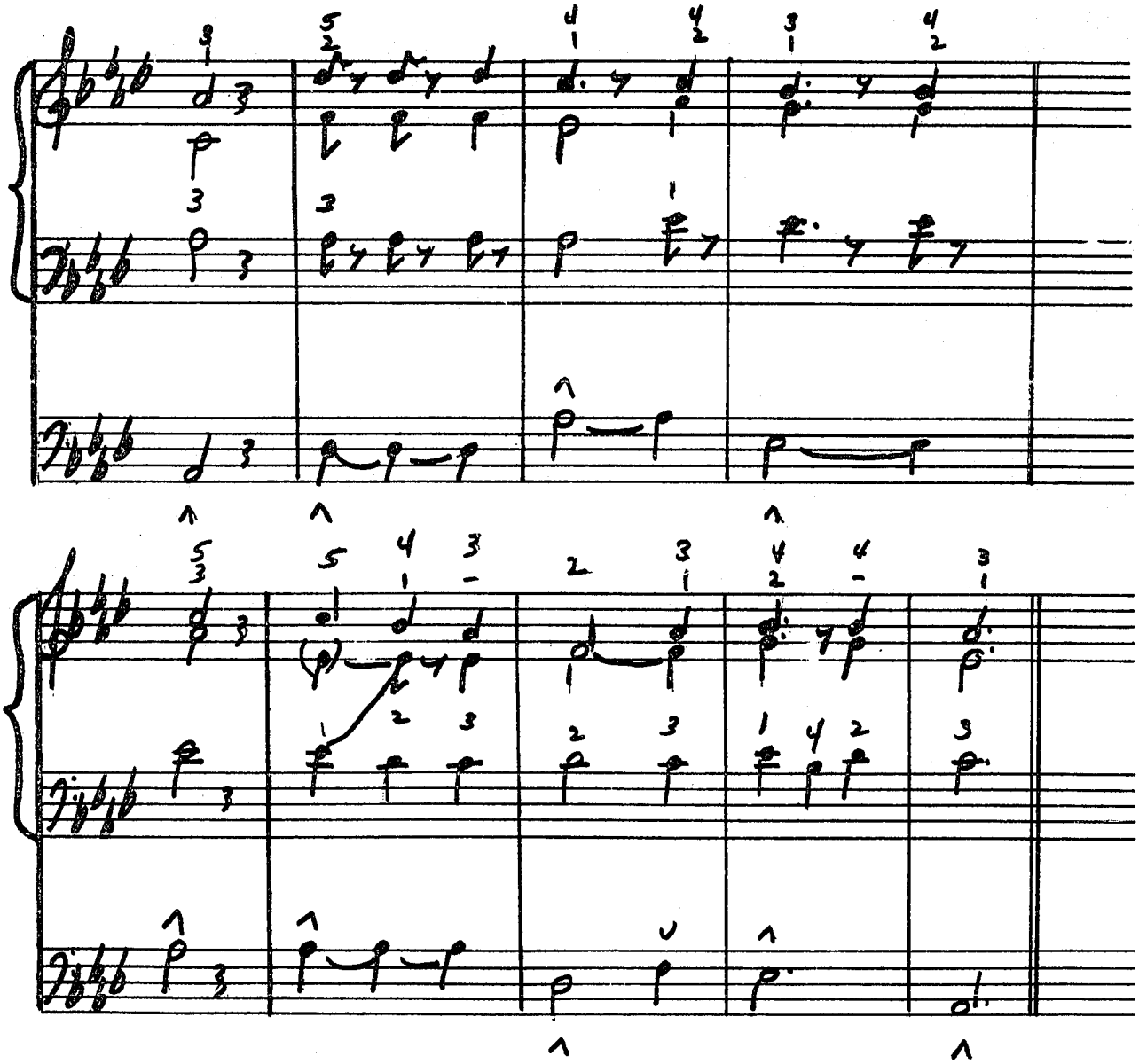
S. A. T. B.



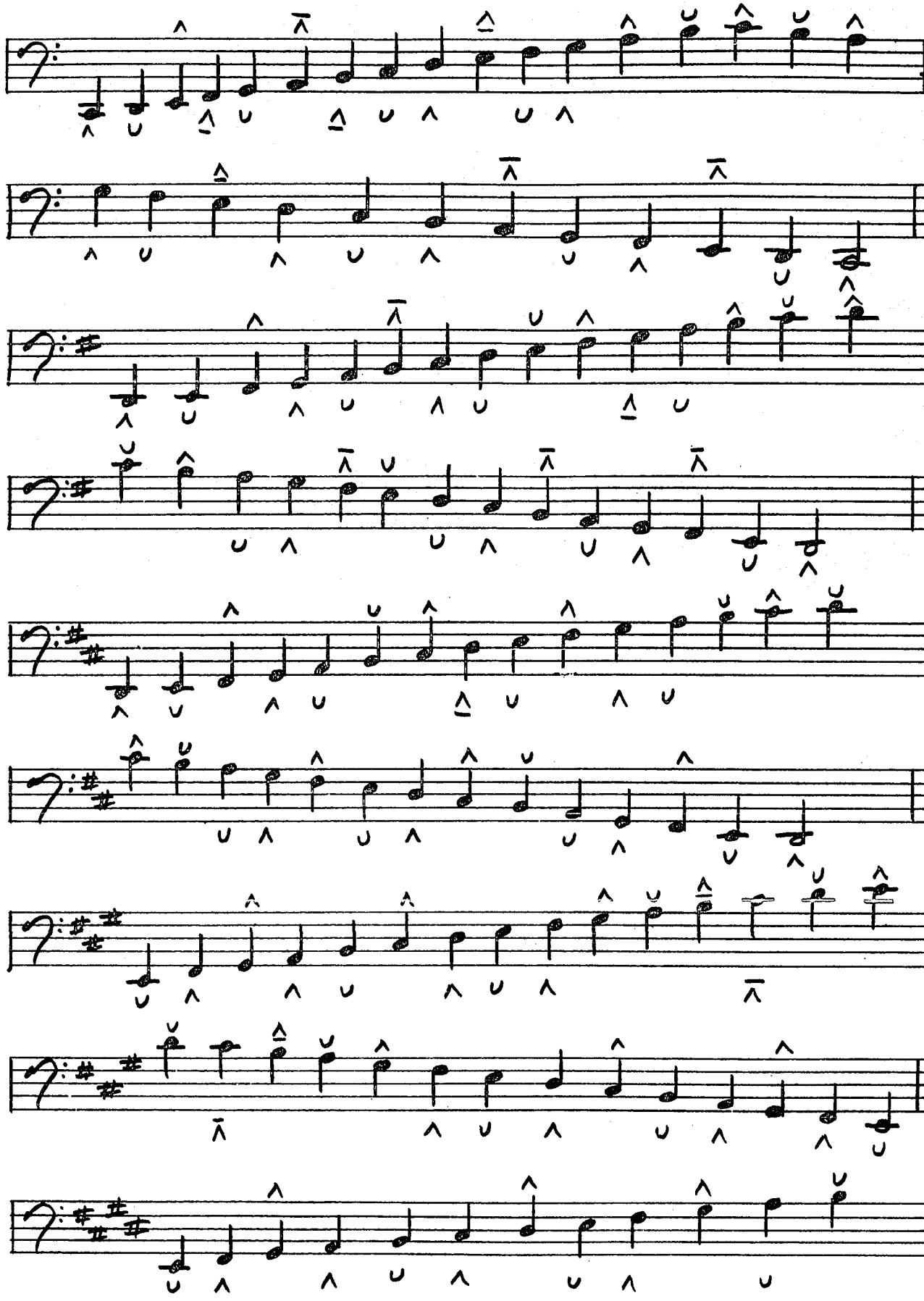
ST. CATHERINE H. F. Hemy

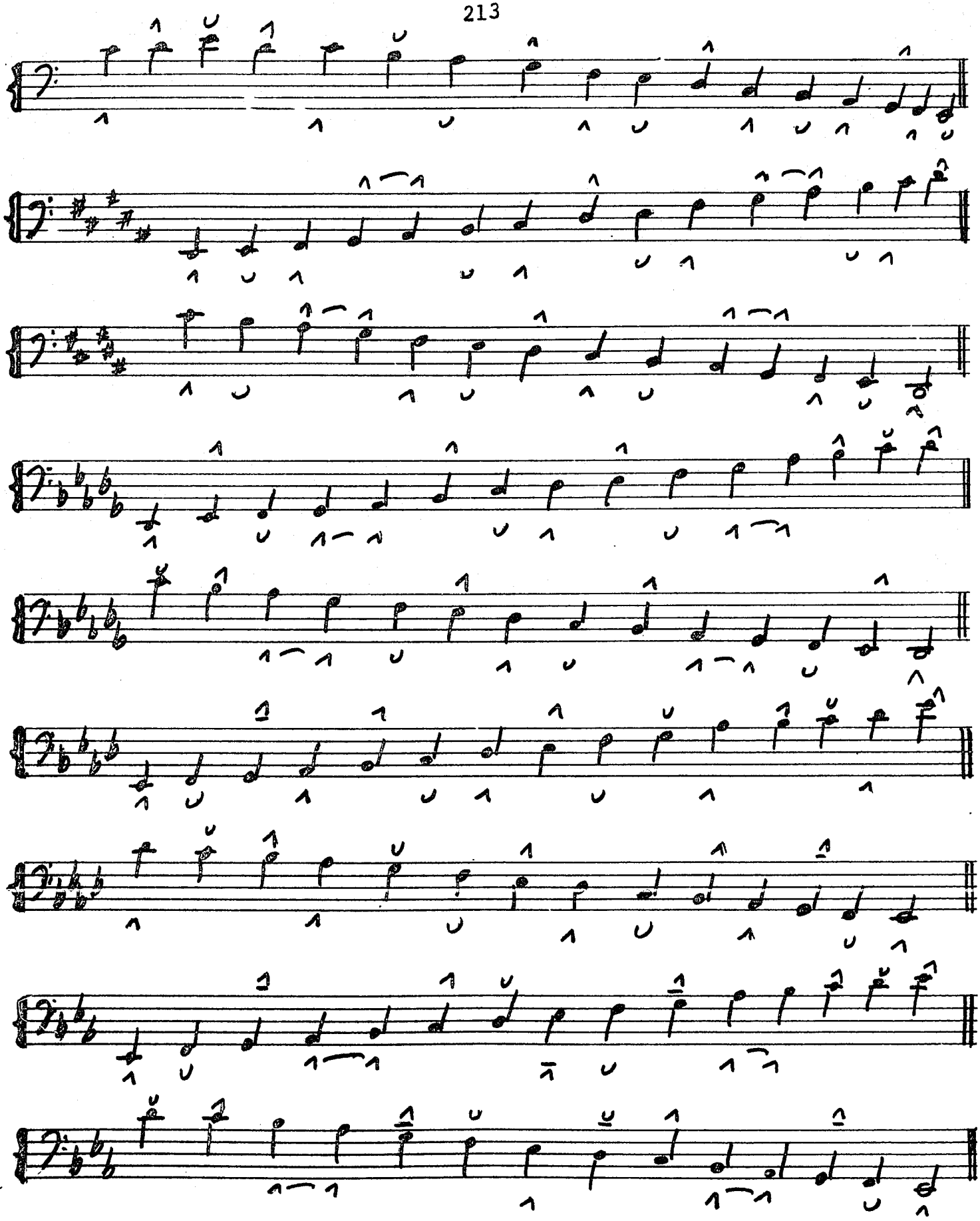
S. A. T. B.

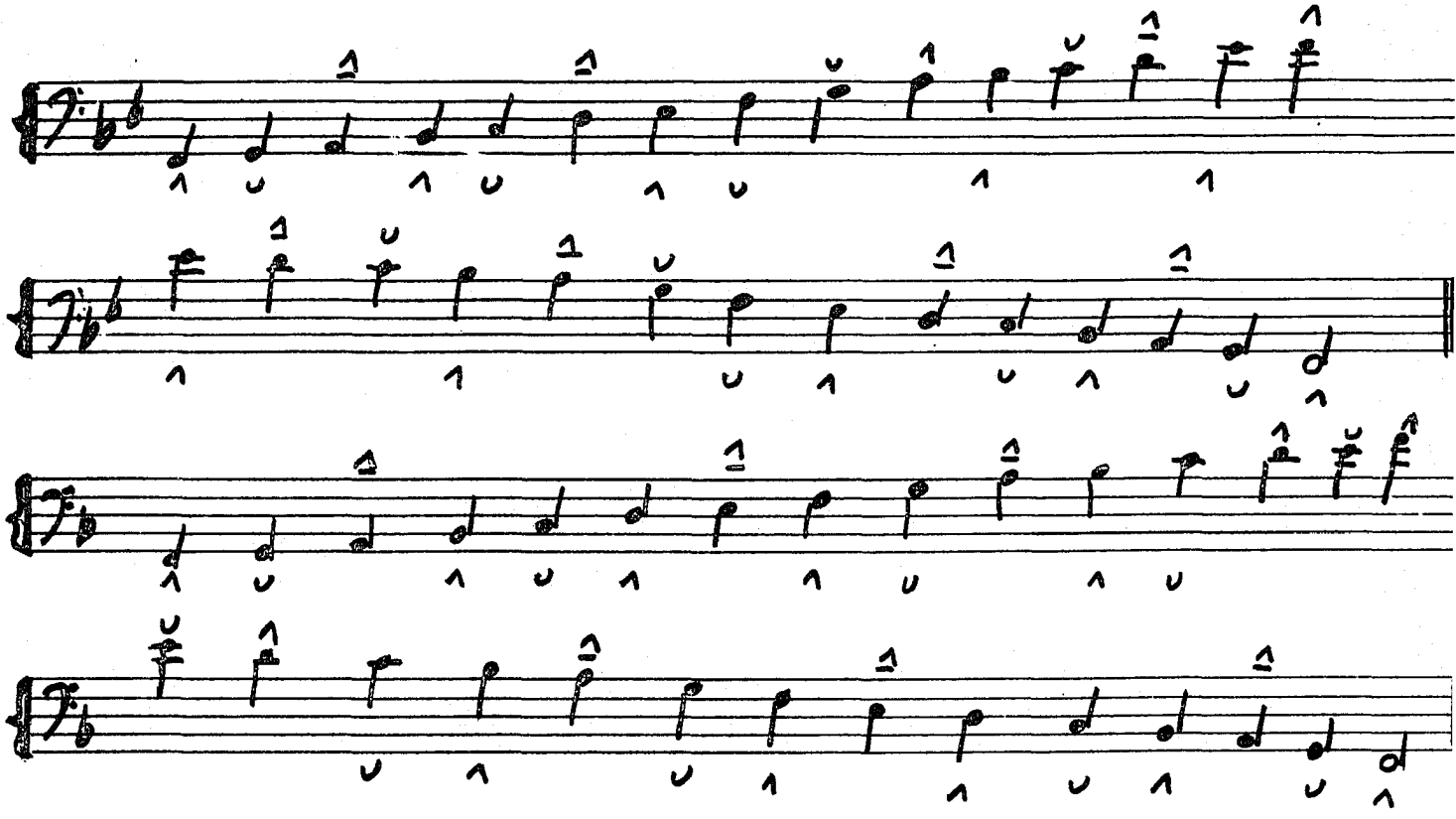




Major Scales in 2 octaves



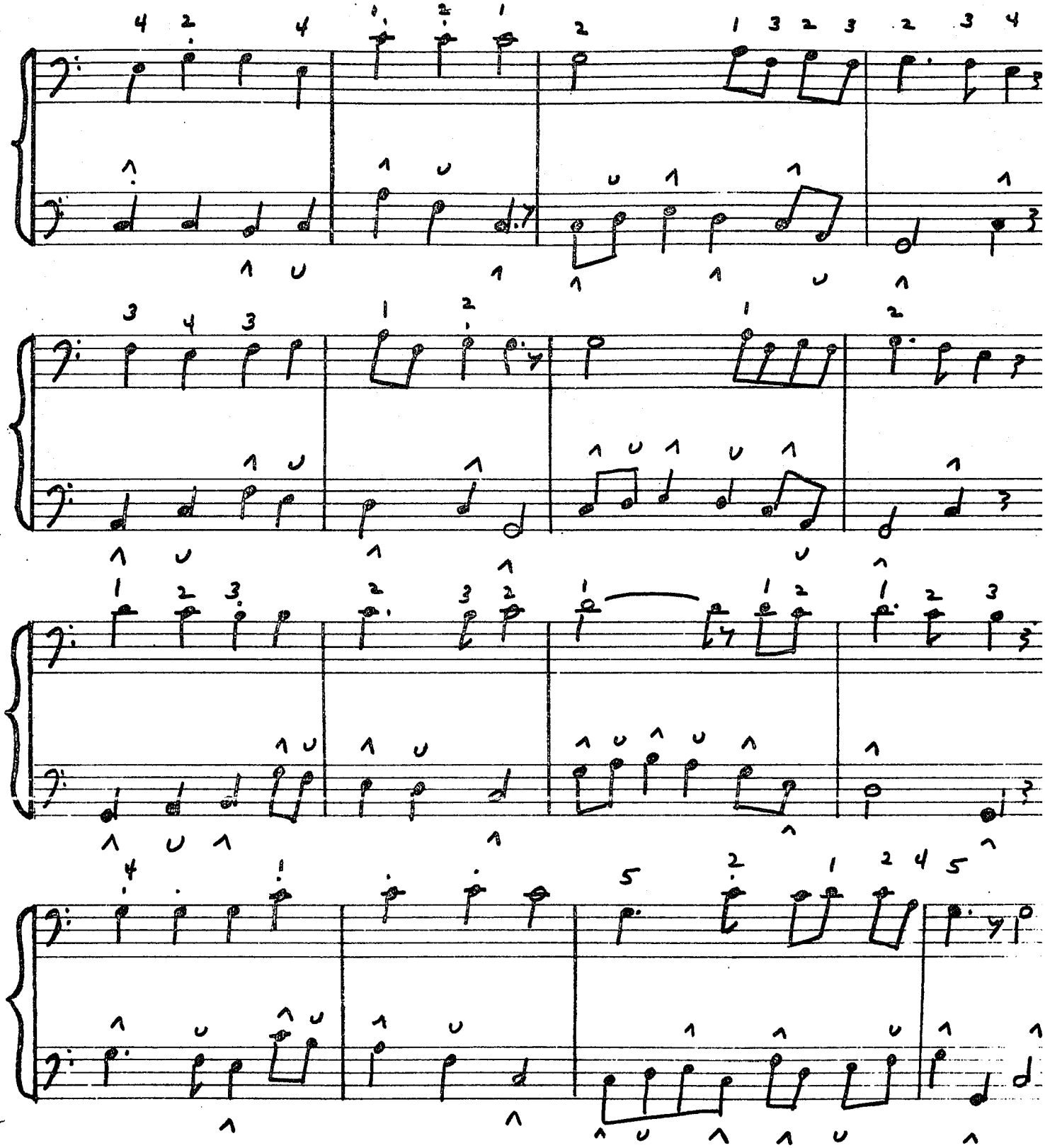


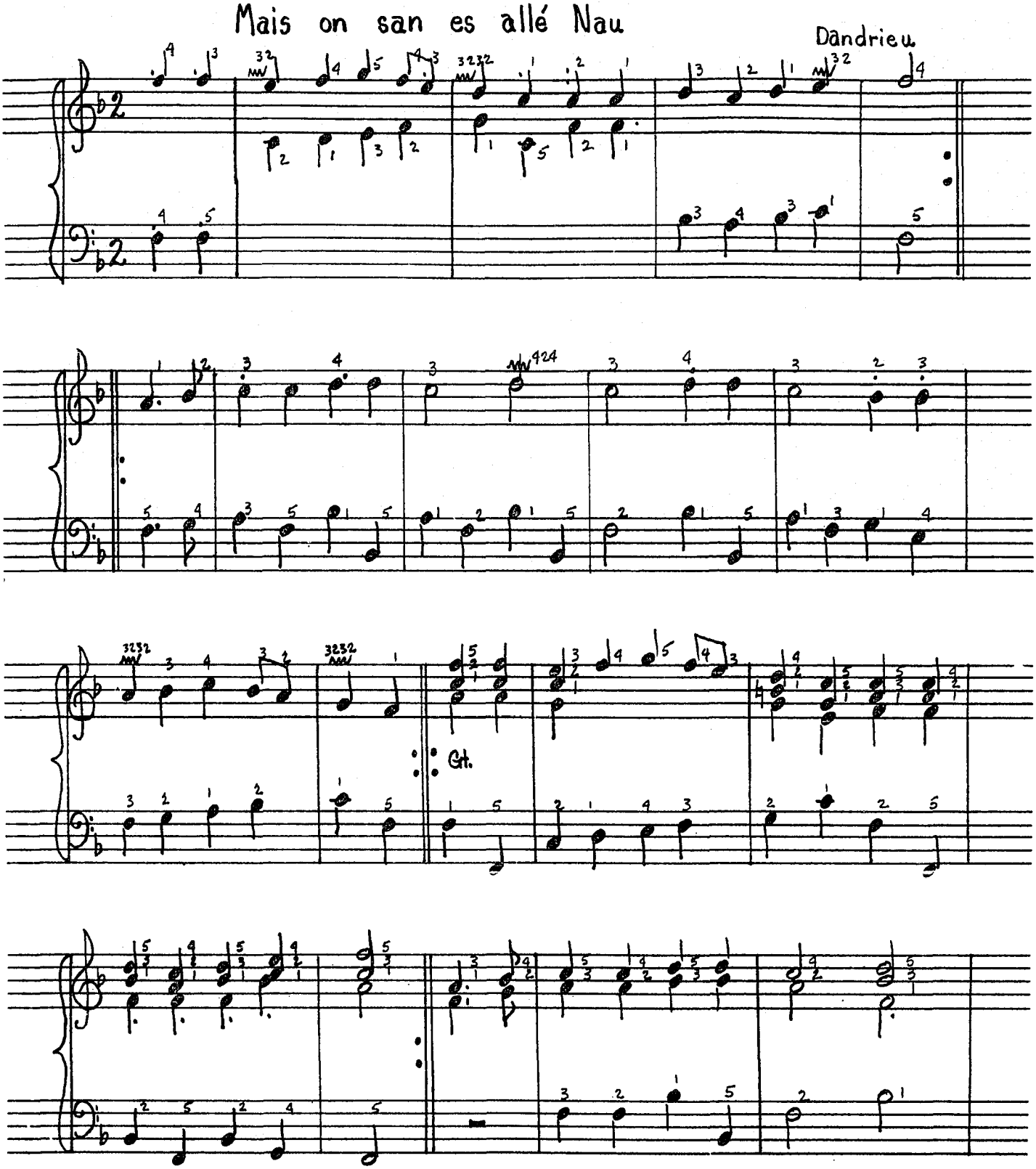


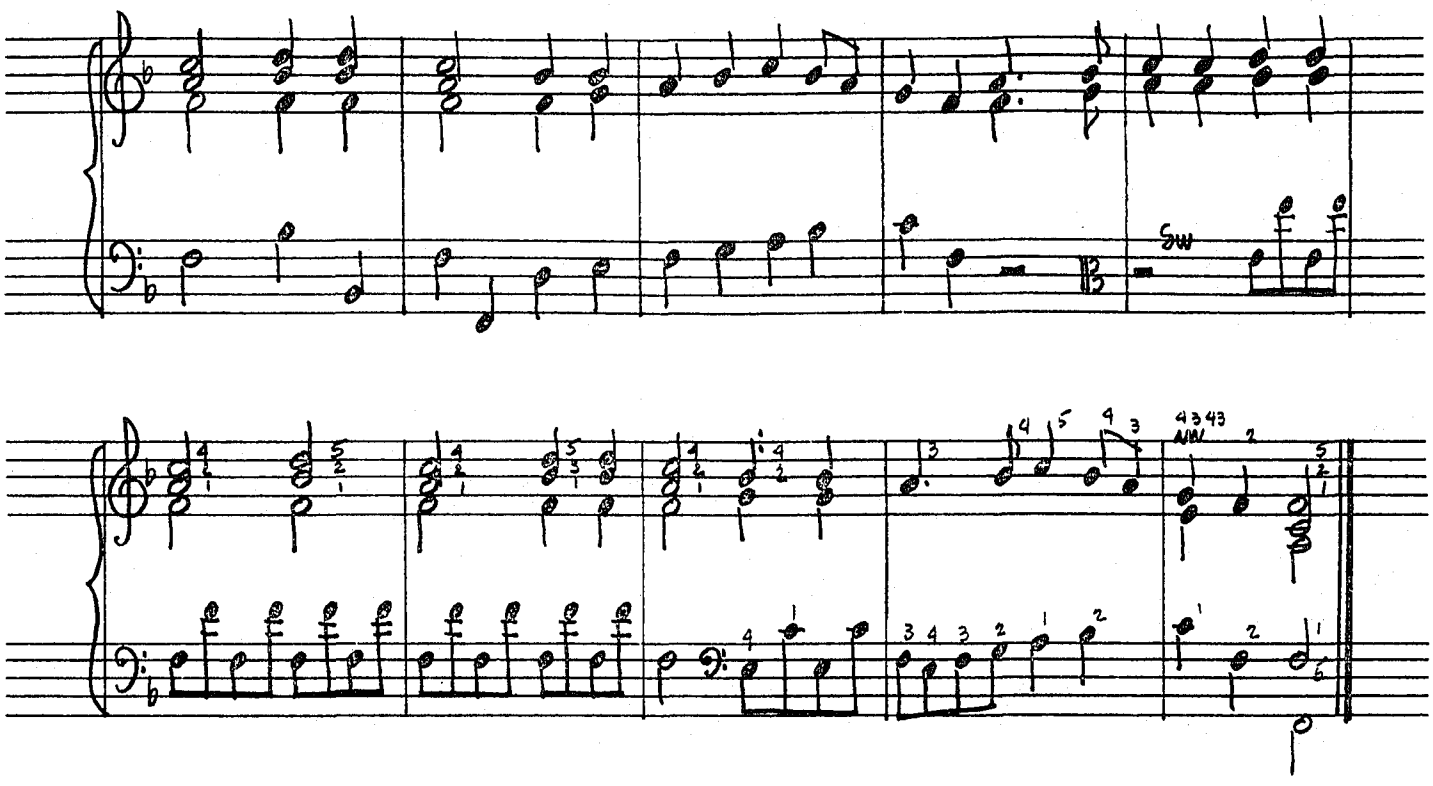
Assignment: XLIII. "Jesus Christ, our Saviour"
XV. "Christ Jesus who maketh us glad",
The Seventy-Nine Chorales For The Organ by
Marcel Dupré, H. W. Gray Co.

EASTER HYMN From Lyra Davidica

L. H. and Pedal



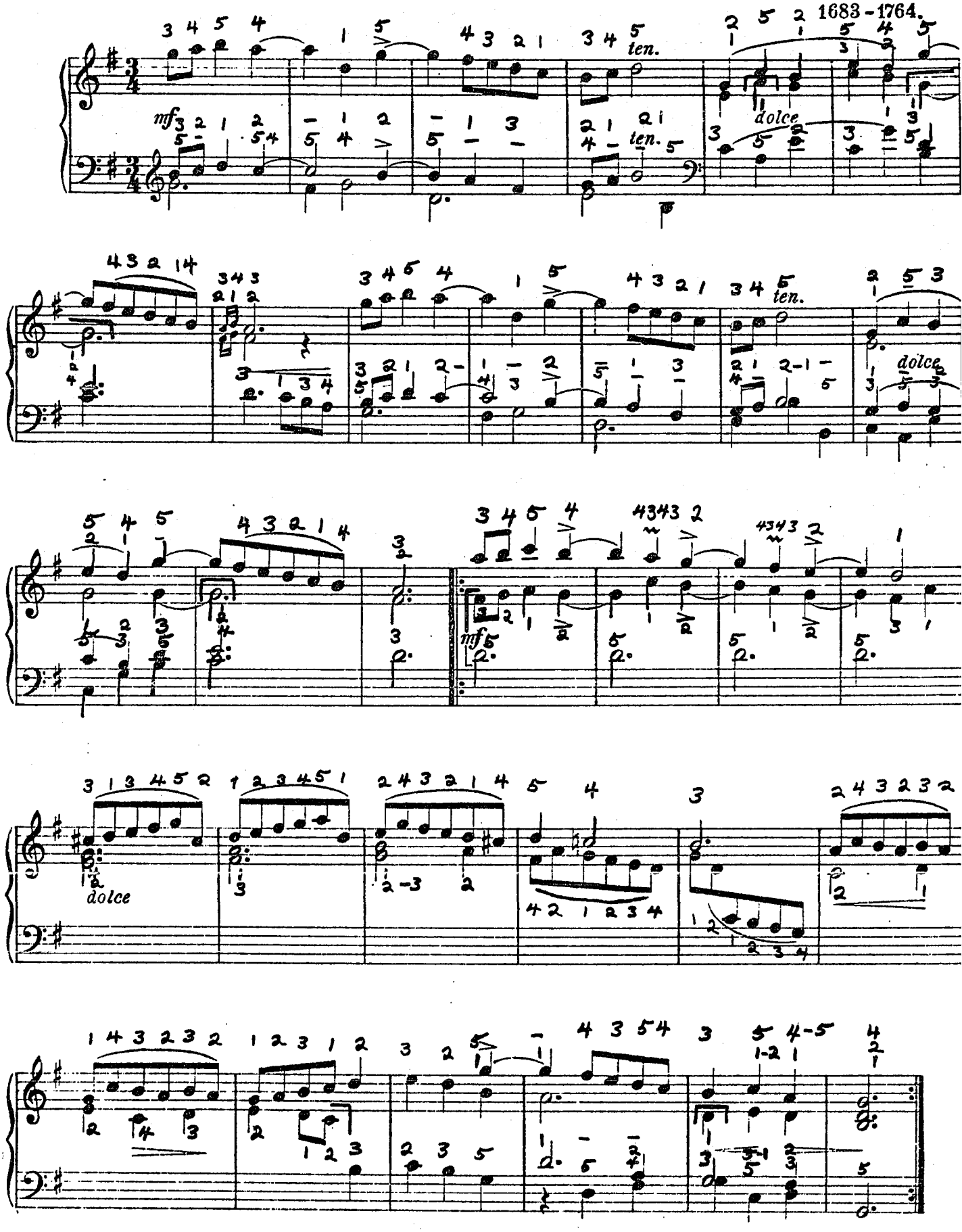

Mais on san es allé Nau
Dandrieu
Gt.



LESSON XI

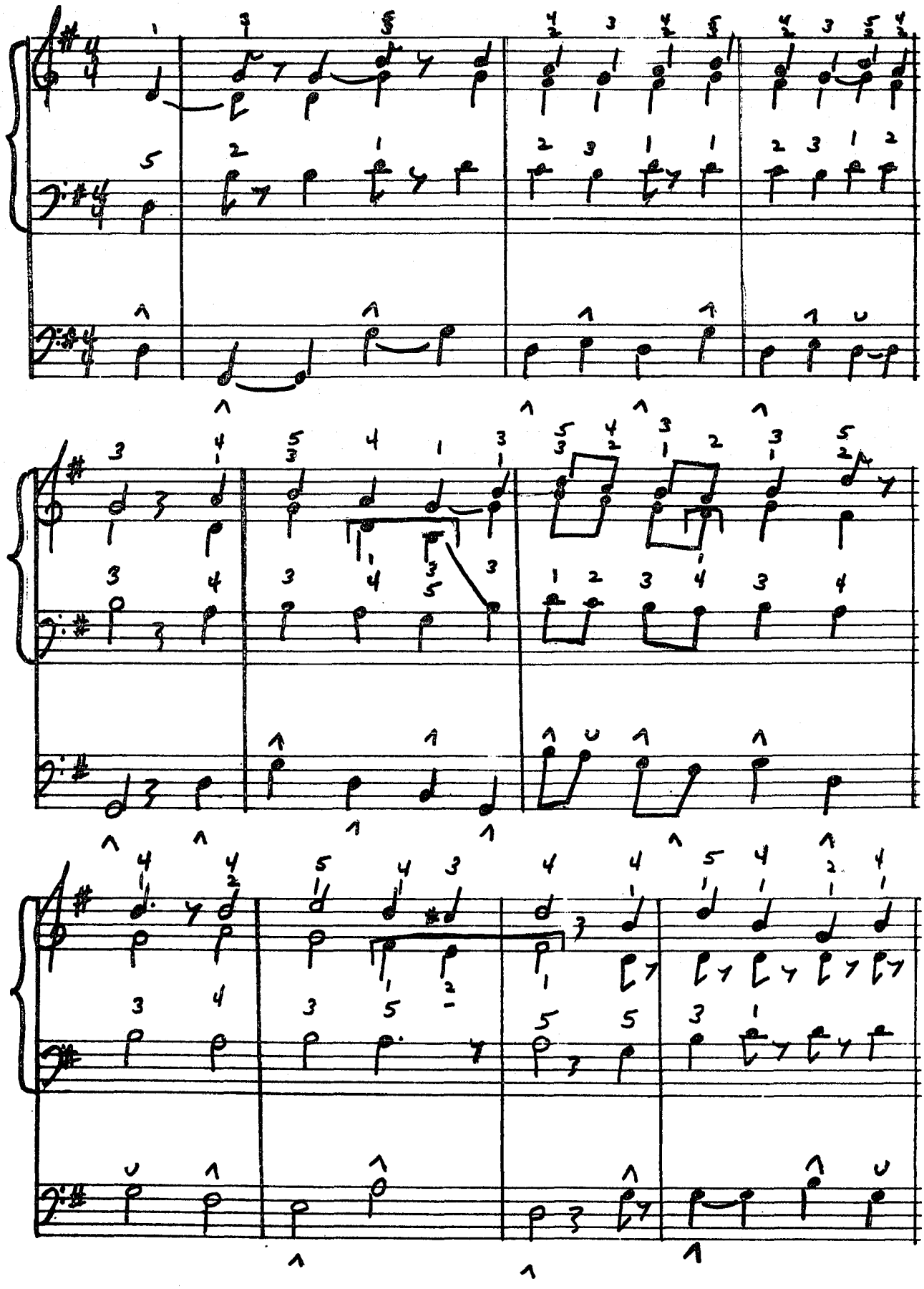
Andante

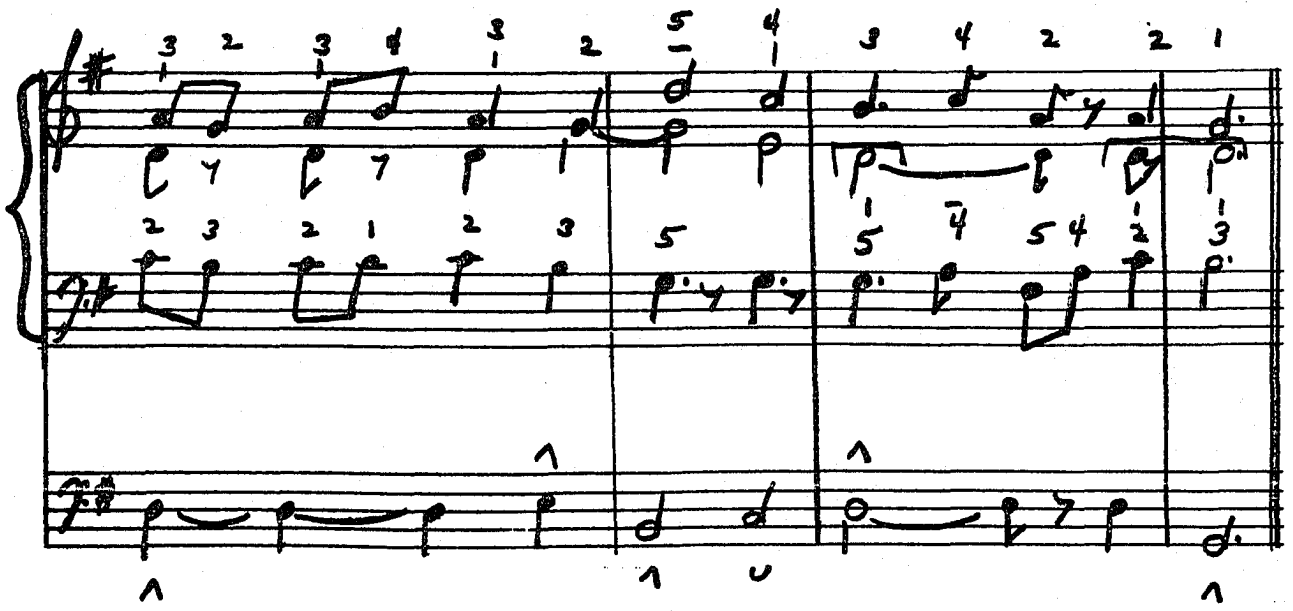
J. P. RAMEAU.
1683-1764.



CORONATION Oliver Holden

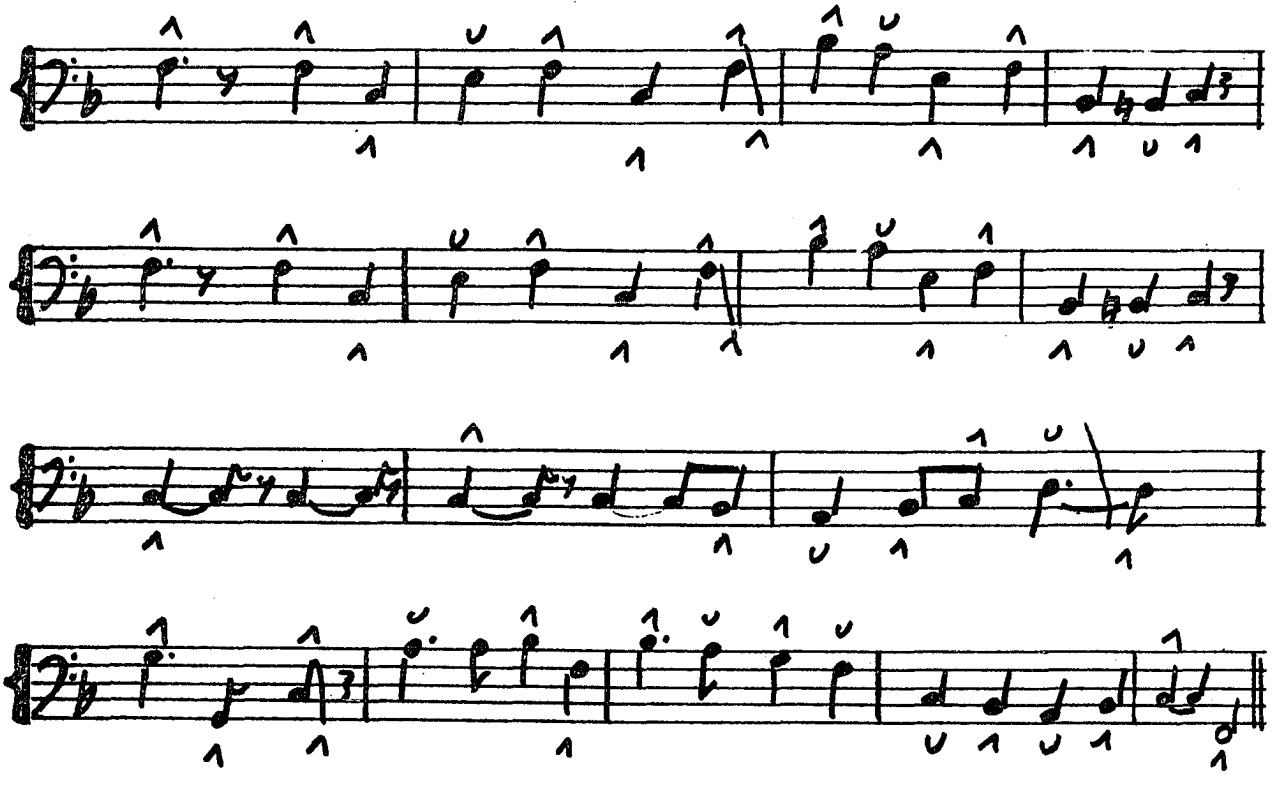
S. T. B.





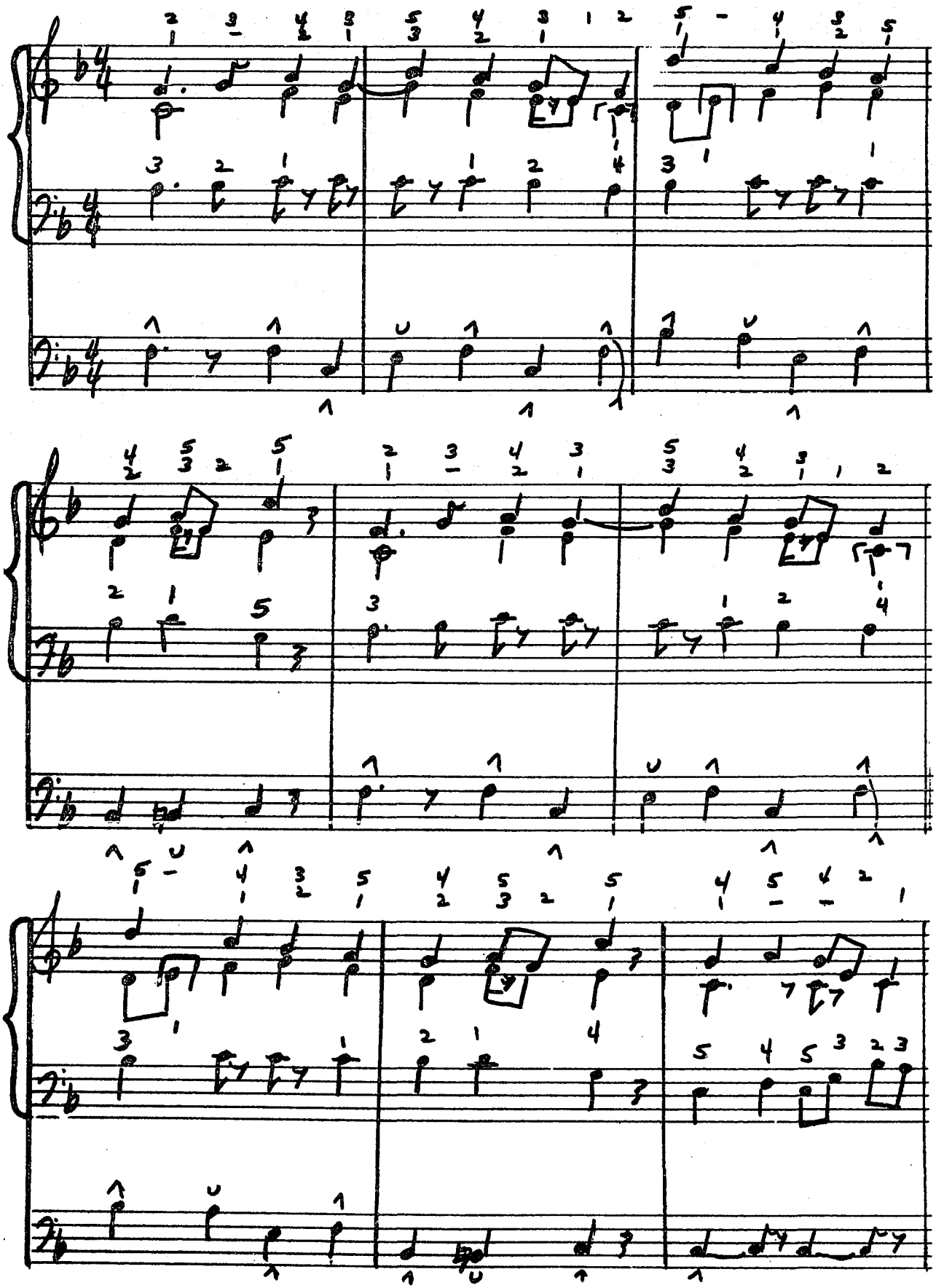
AUSTRIAN HYMN Franz J. Haydn

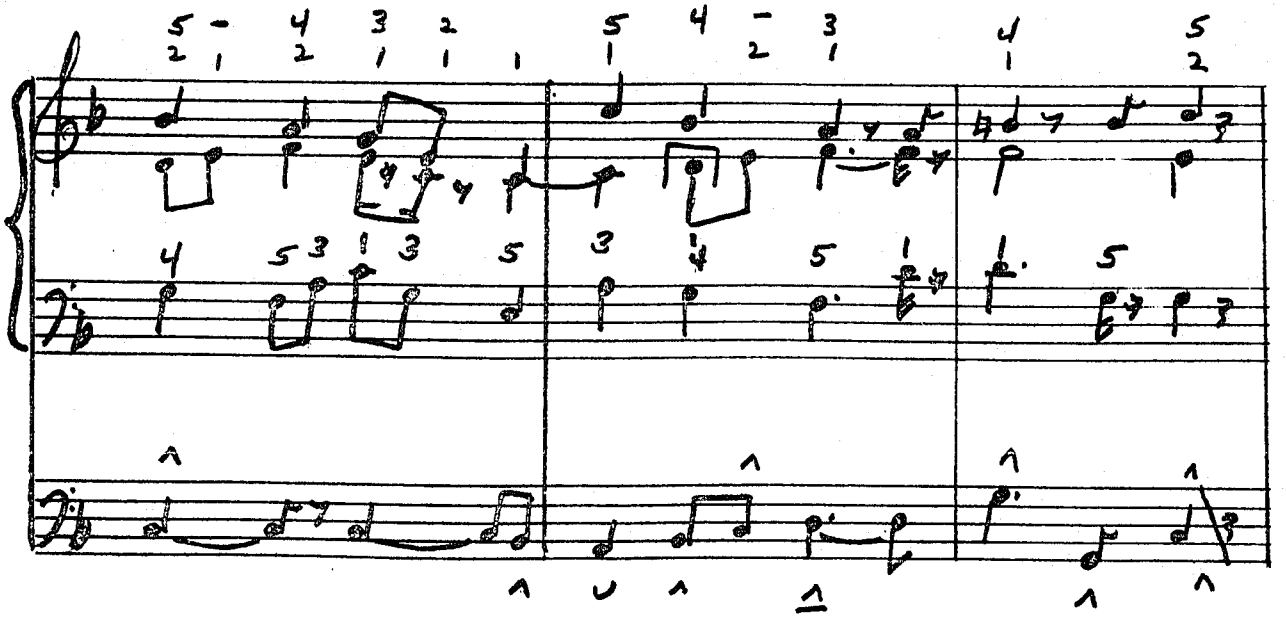
Pedal part

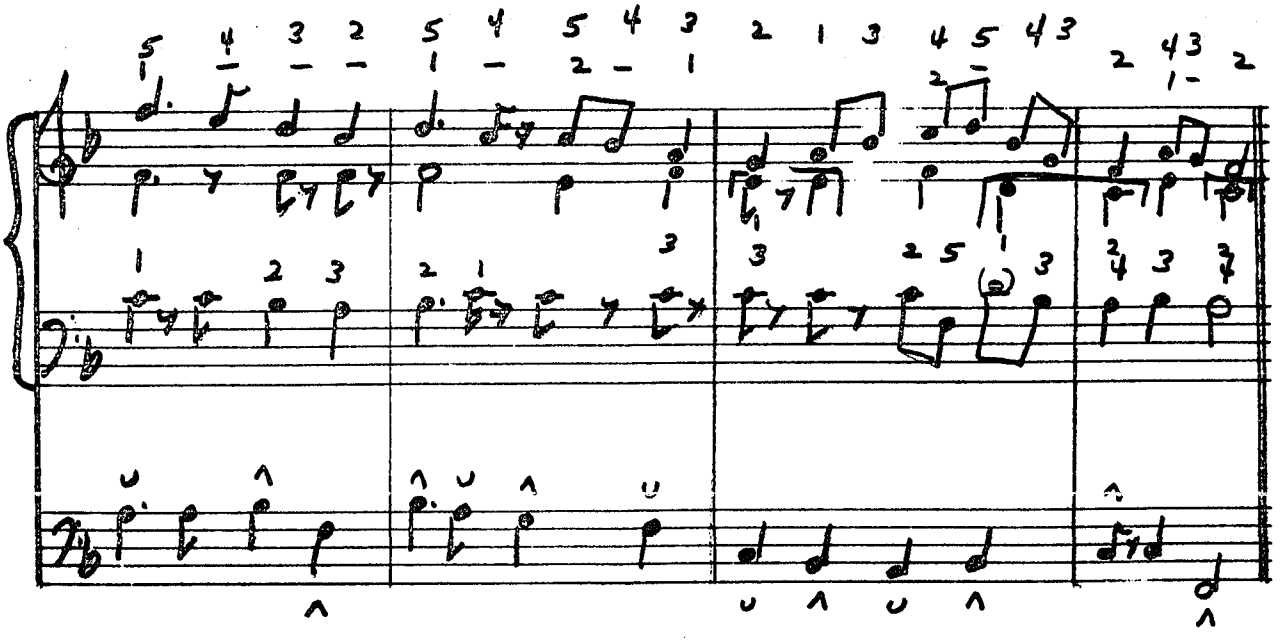


AUSTRIAN HYMN Franz J. Haydn

S.A.T.B.



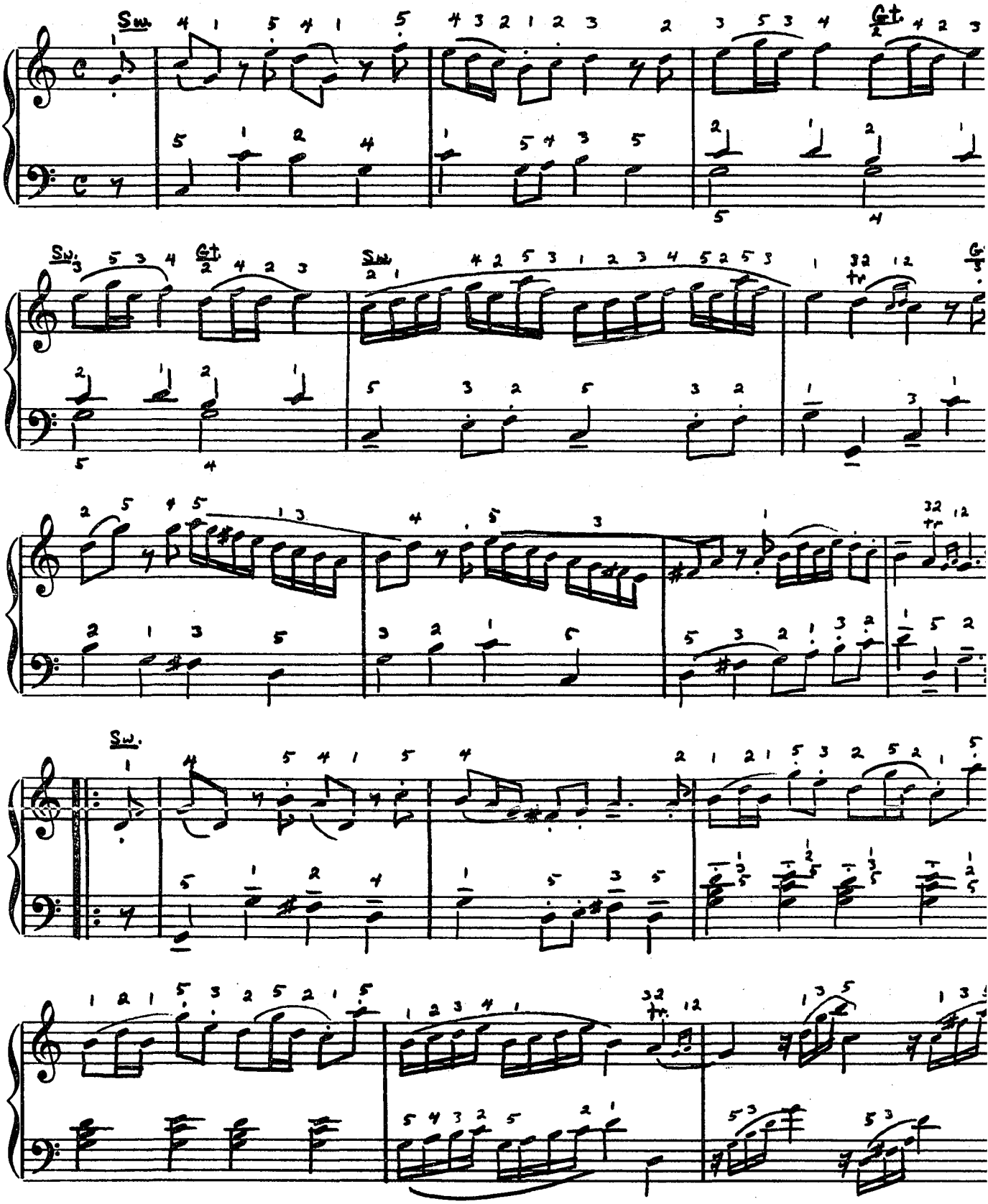


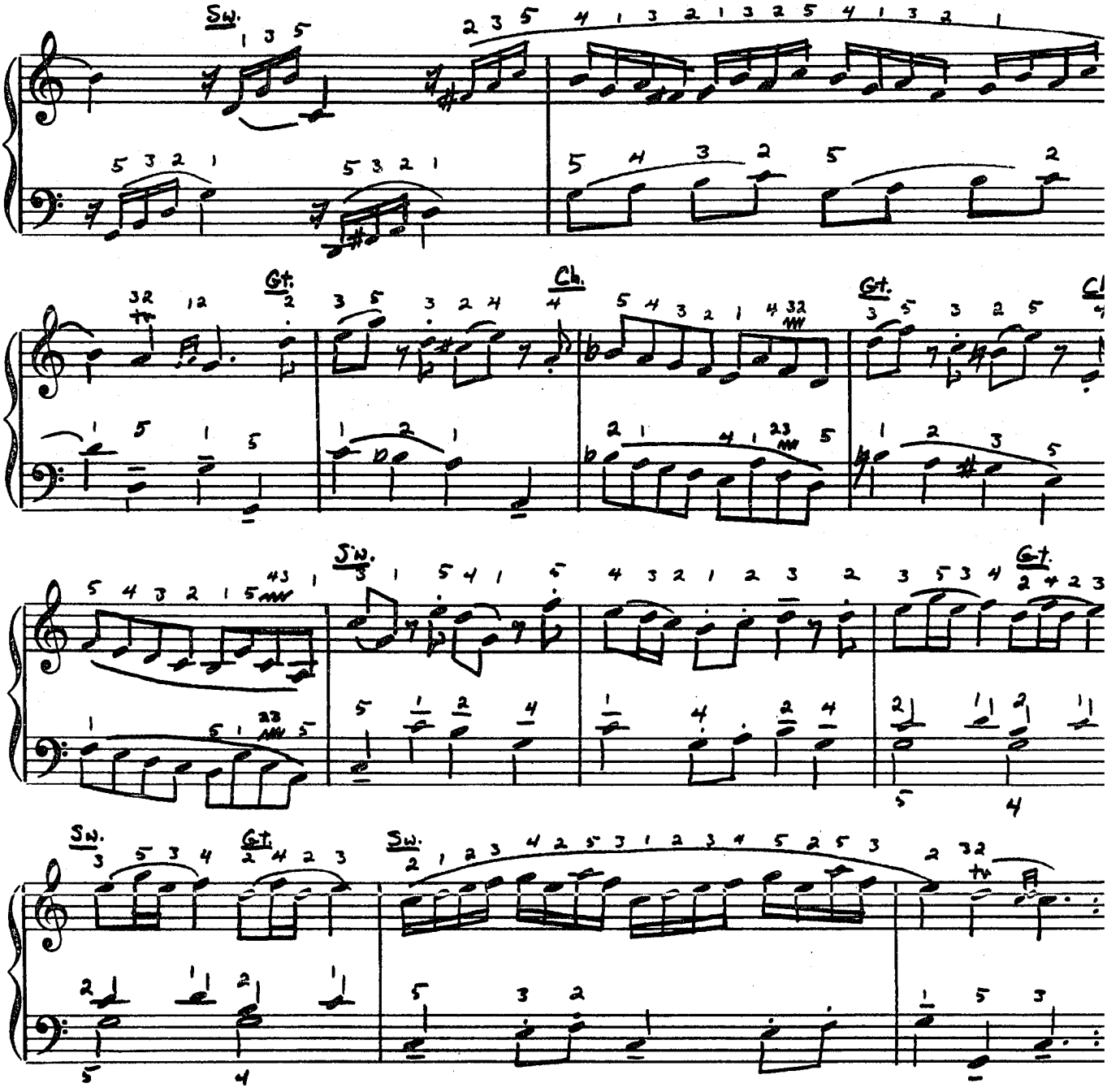


Assignment: IX. "O Christ who art the Light of the World"
II. "O Lord my God", The Seventy-Nine Chorales For The Organ by Marcel Dupre, H. W. Gray Co.

A Lesson

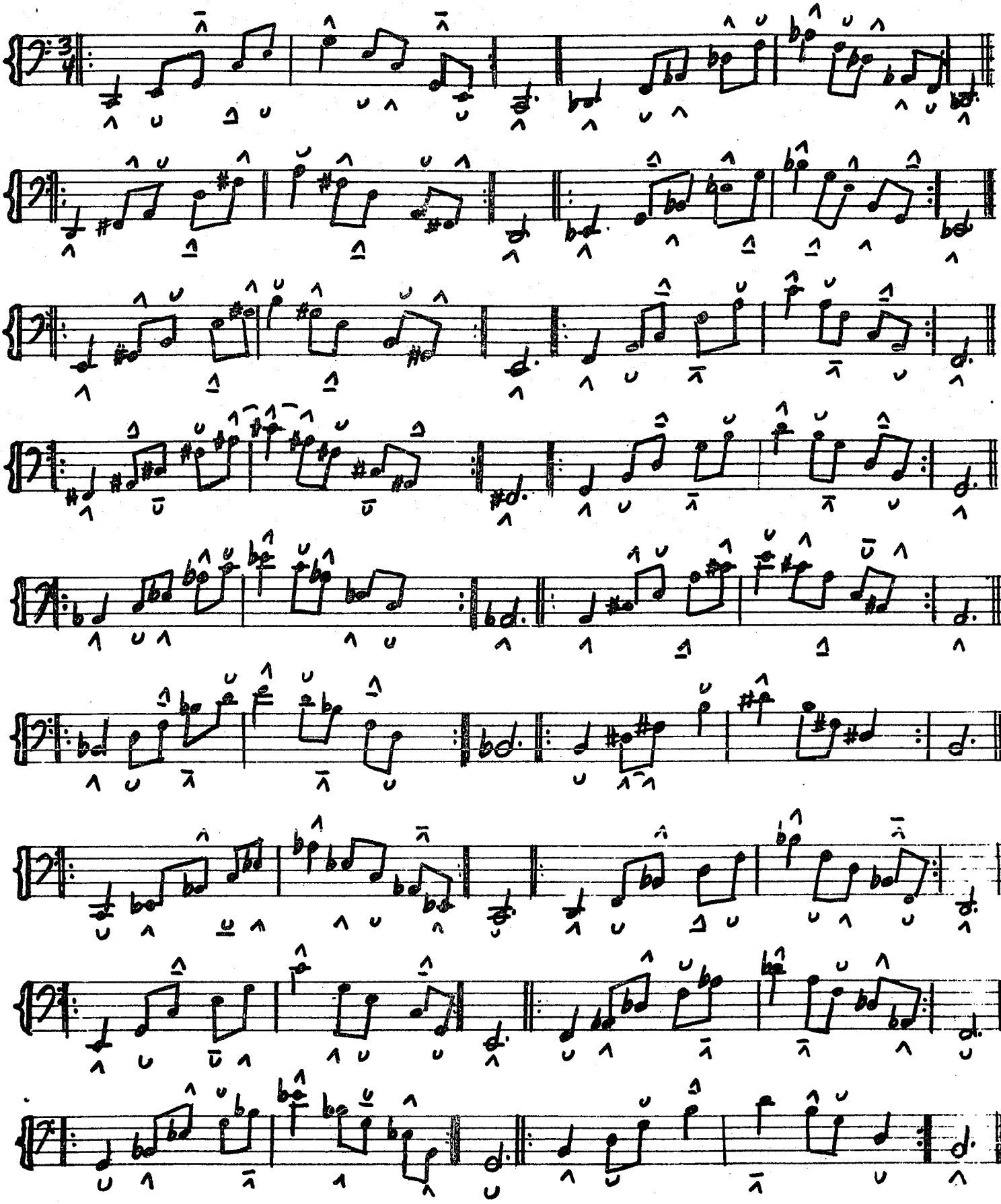
William Selby




Sw.
Gt.
Ch.
Gt.
Sw.
Gt.
Sw.
Gt.
Sw.

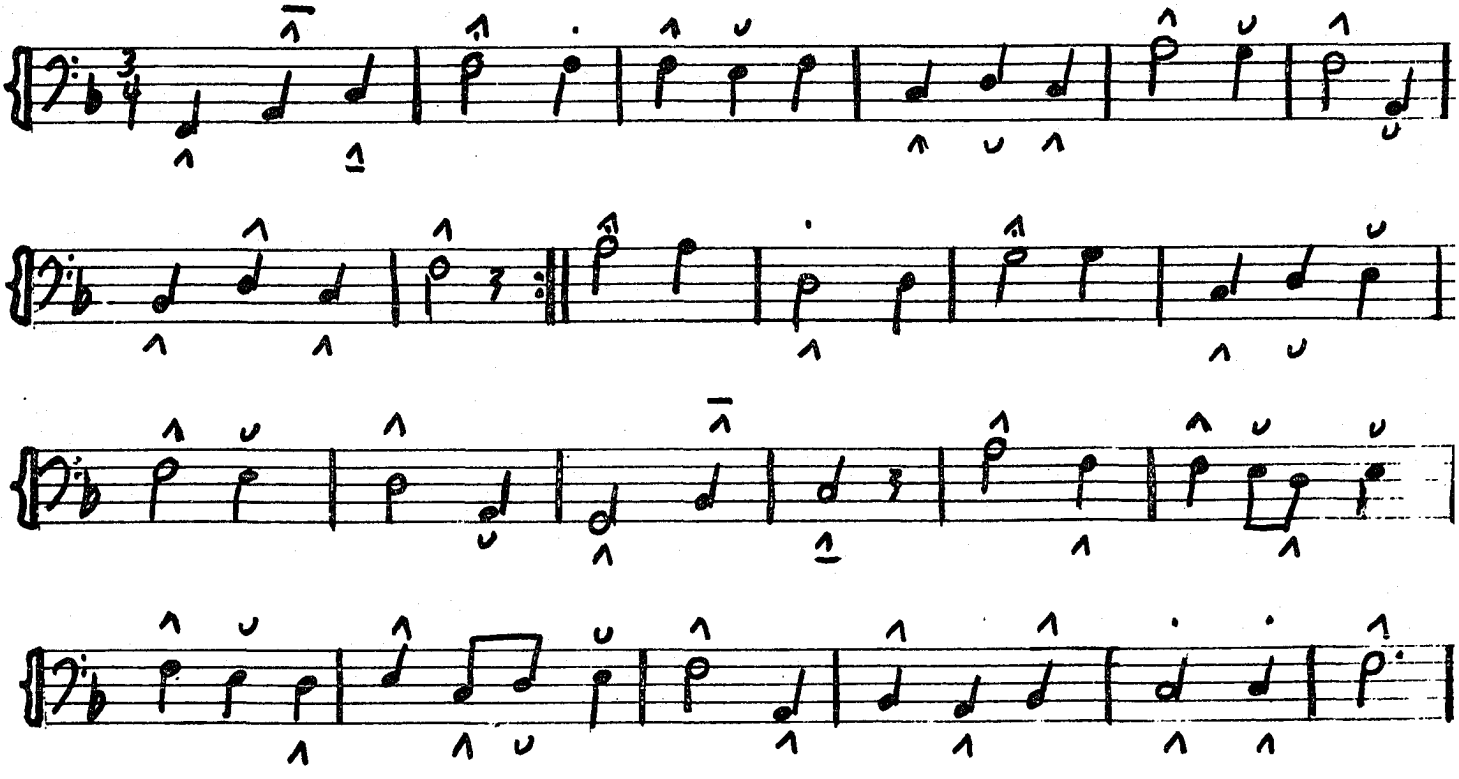
LESSON XII

Arpeggios



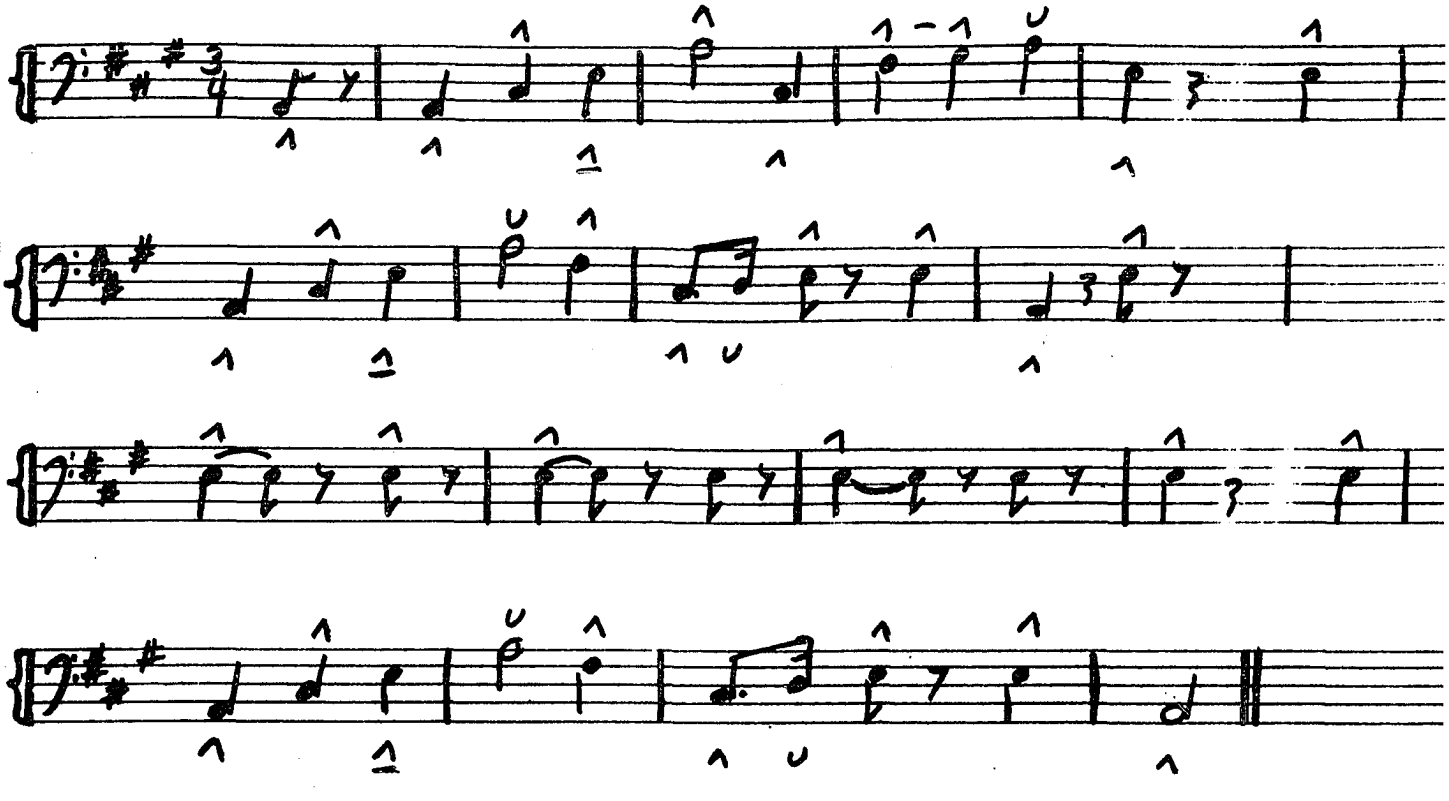
HYFRYDOL R. H. Prichard

Pedal part



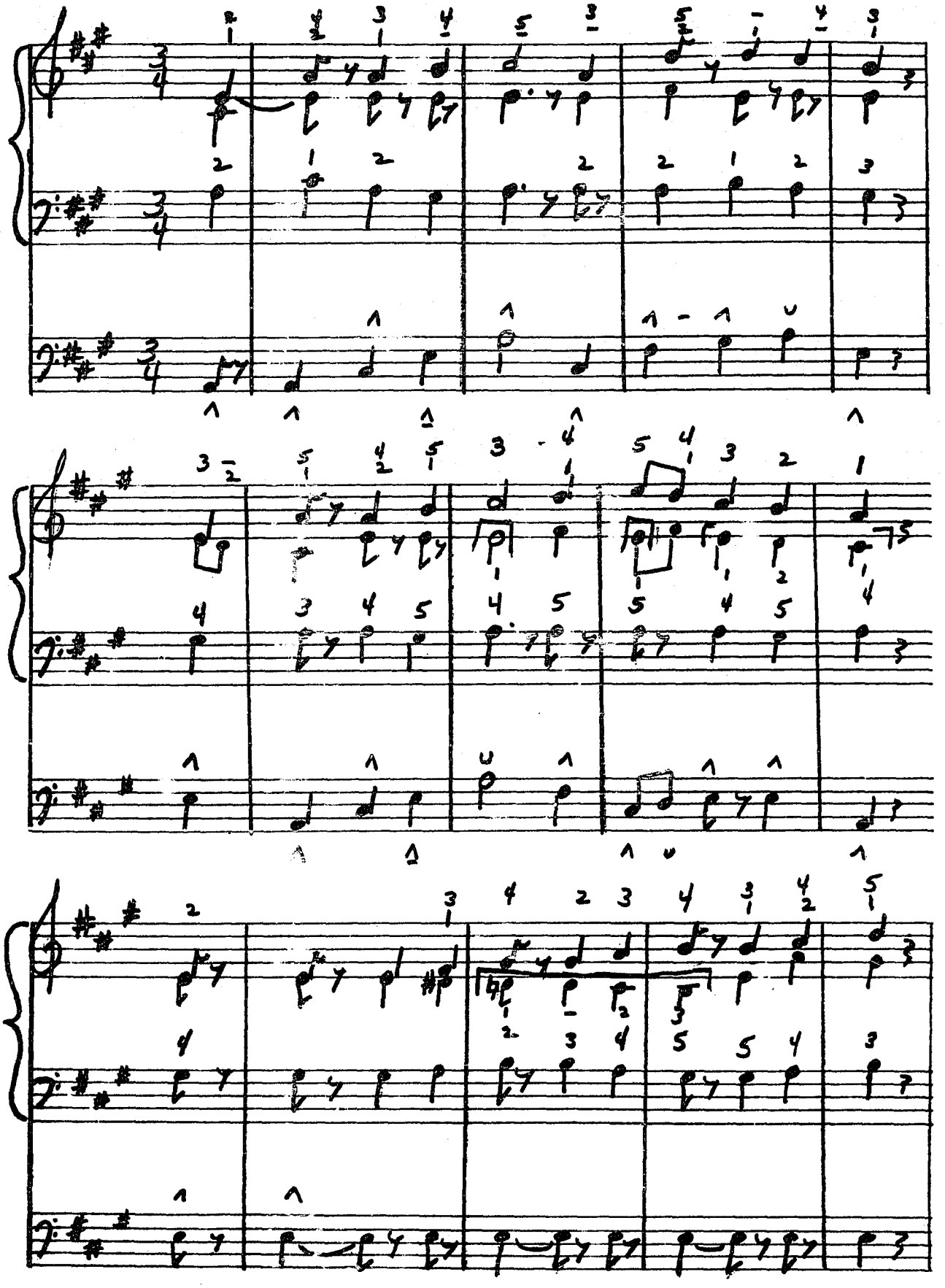
LYONS J. M. Haydn

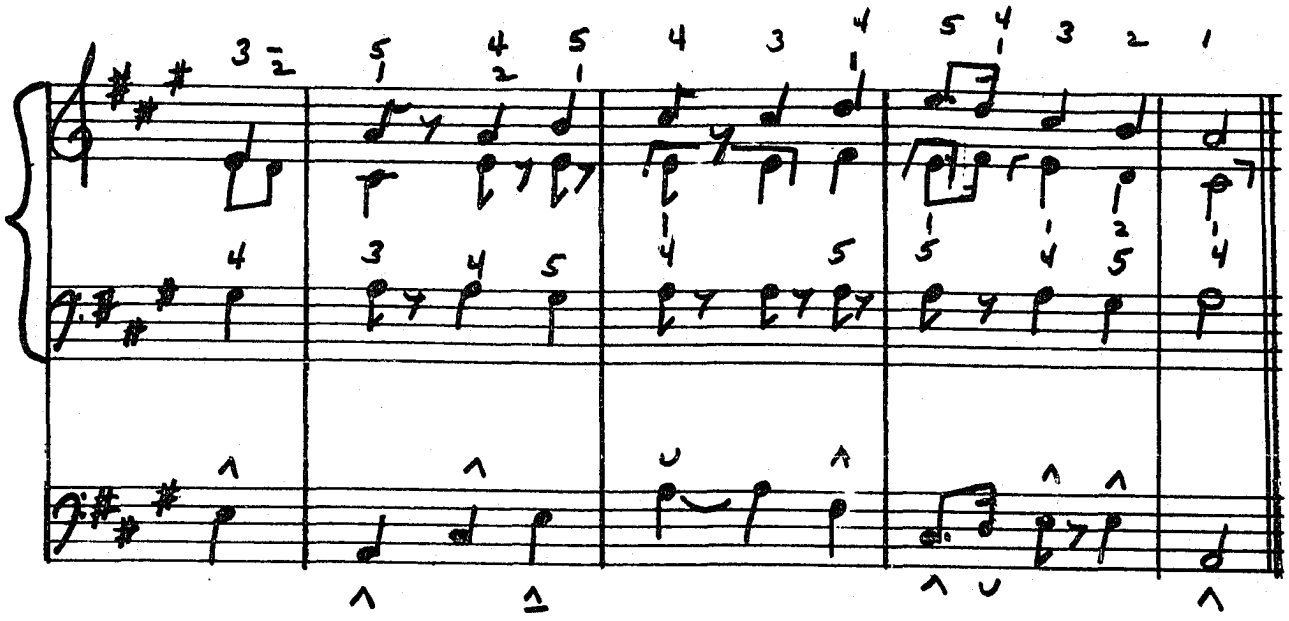
Pedal part



LYONS J. M. Haydn

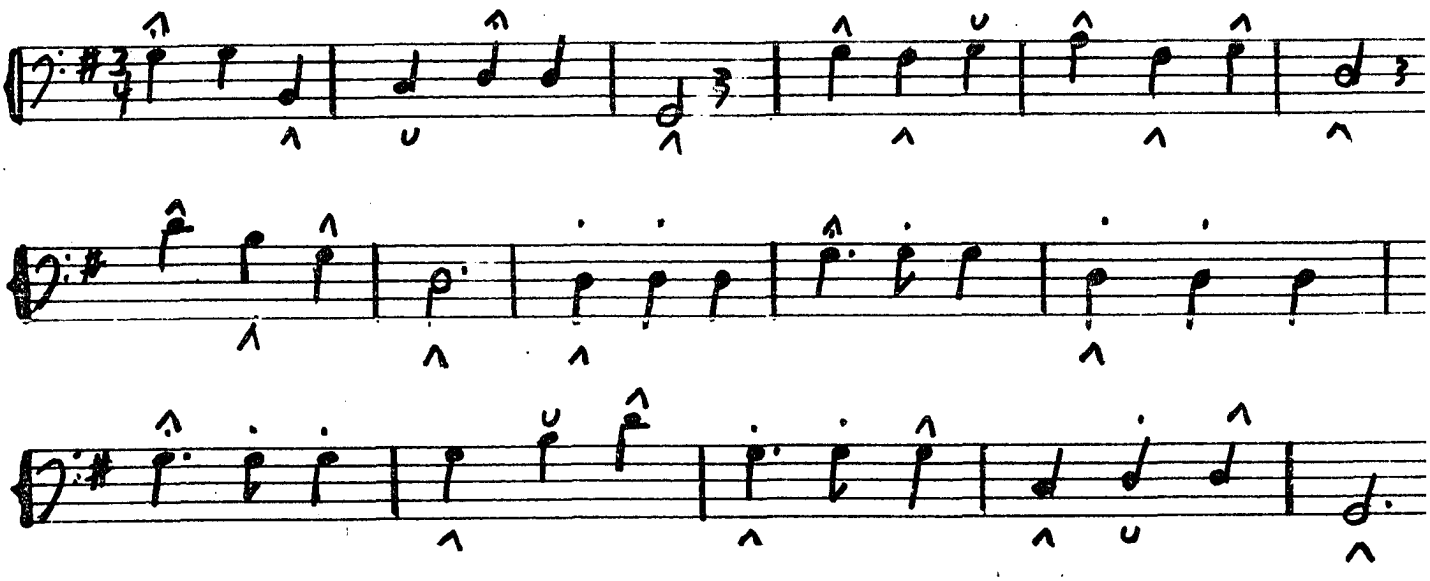
S.A.T.B.





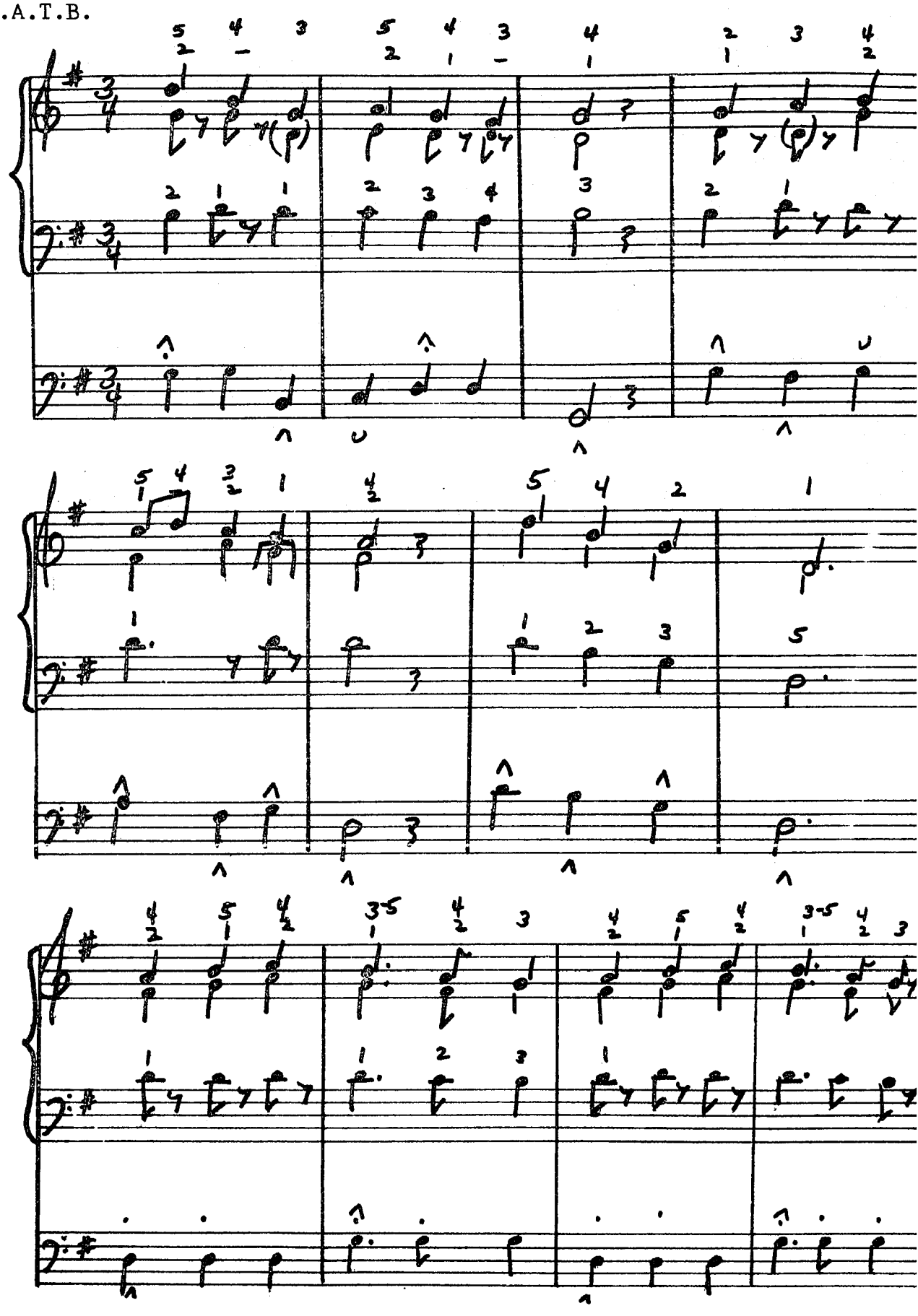
ITALIAN HYMN (TRINITY) F. De Giardini

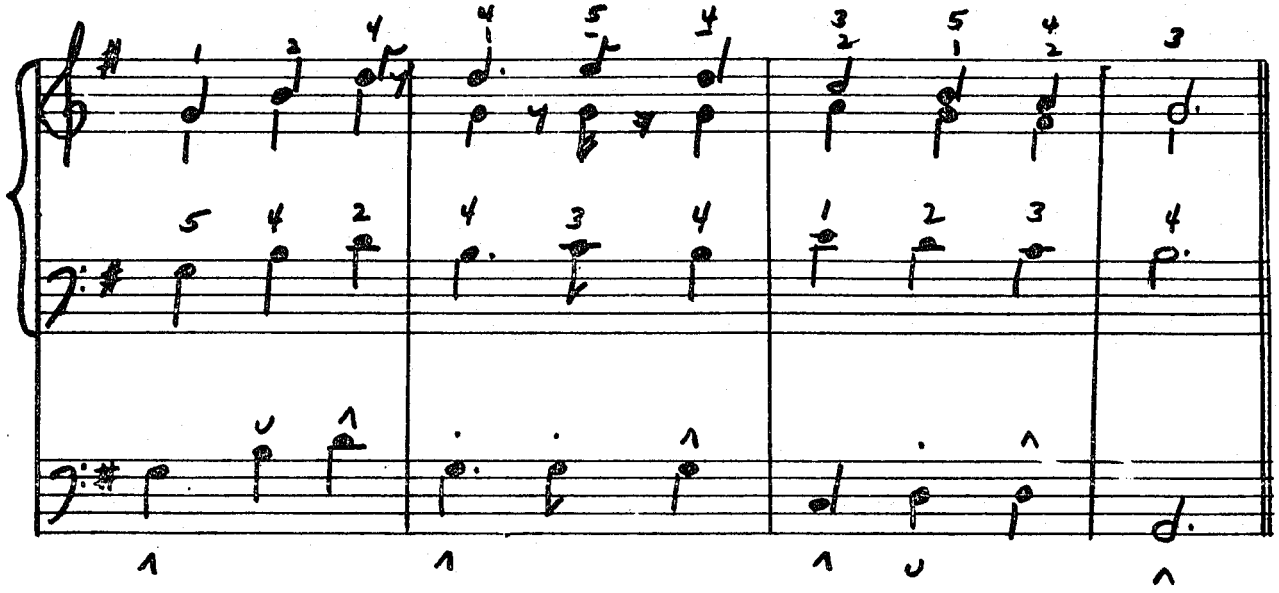
Pedal part



ITALIAN HYMN (TRINITY) F. De Giardini

S.A.T.B.

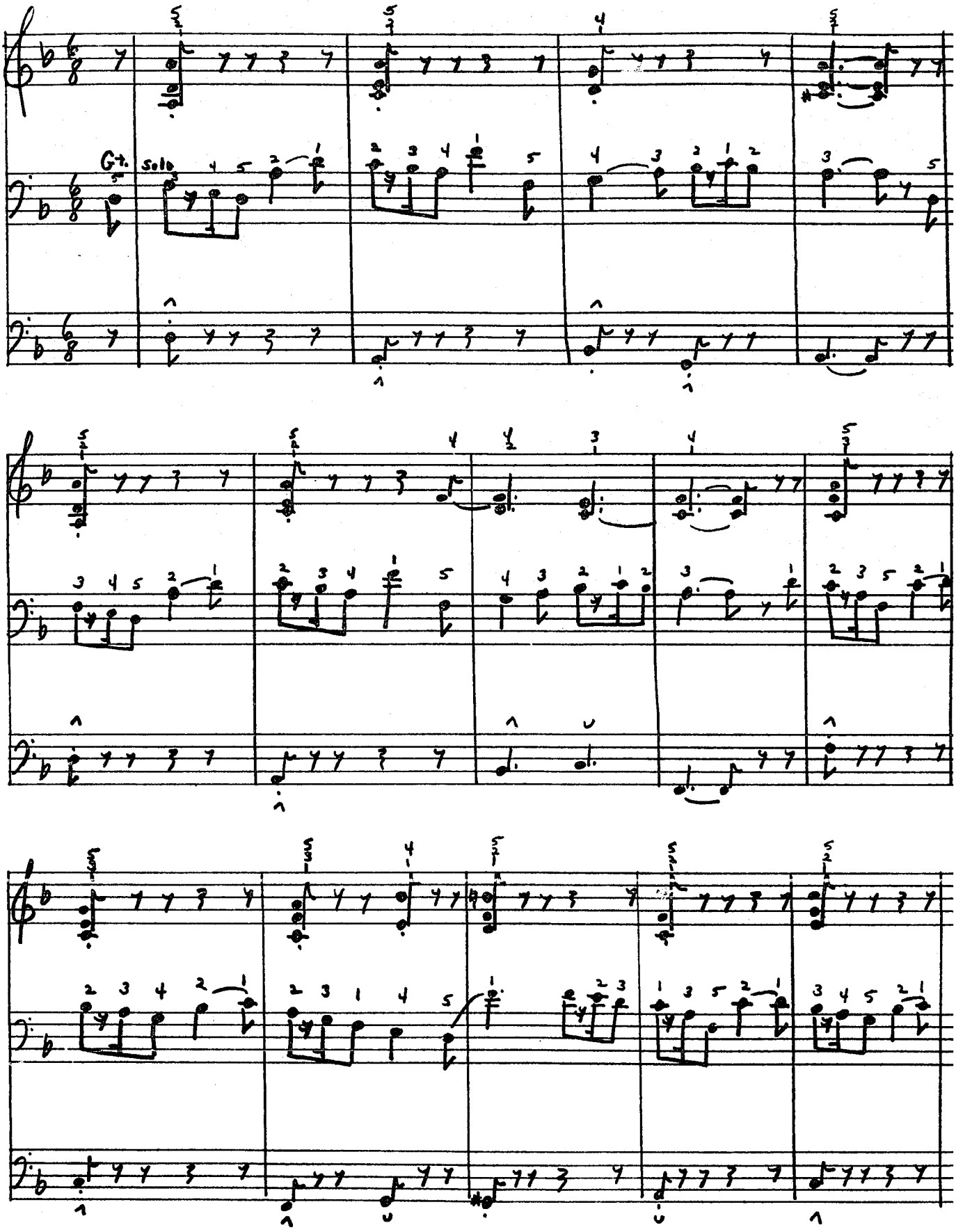


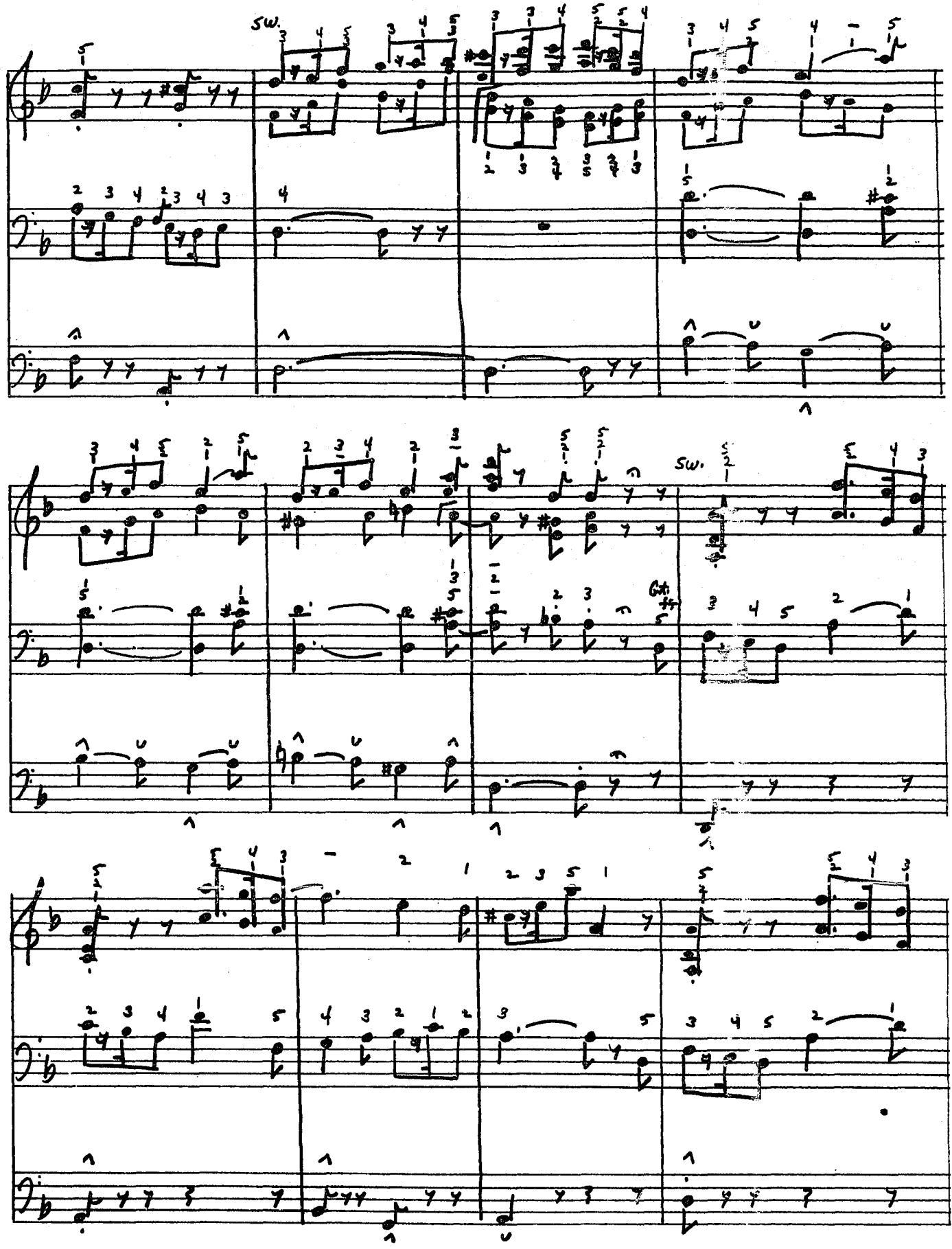


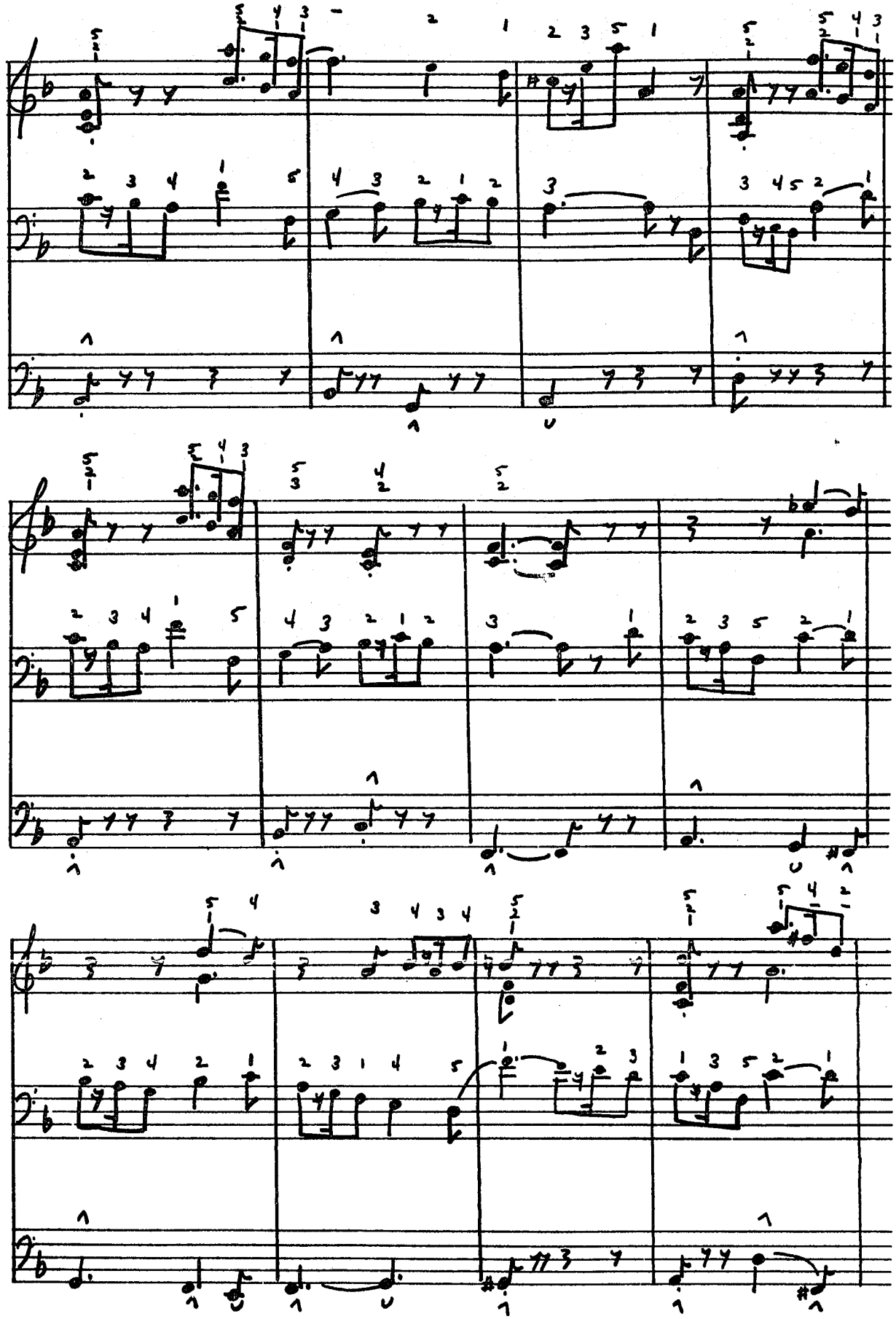
Assignment: XLII. "Jesus my joy"
LXXVII. "We all believe in one God", The Seventy-Nine Chorales For The Organ by Marcel Dupre, H. W. Gray Co.

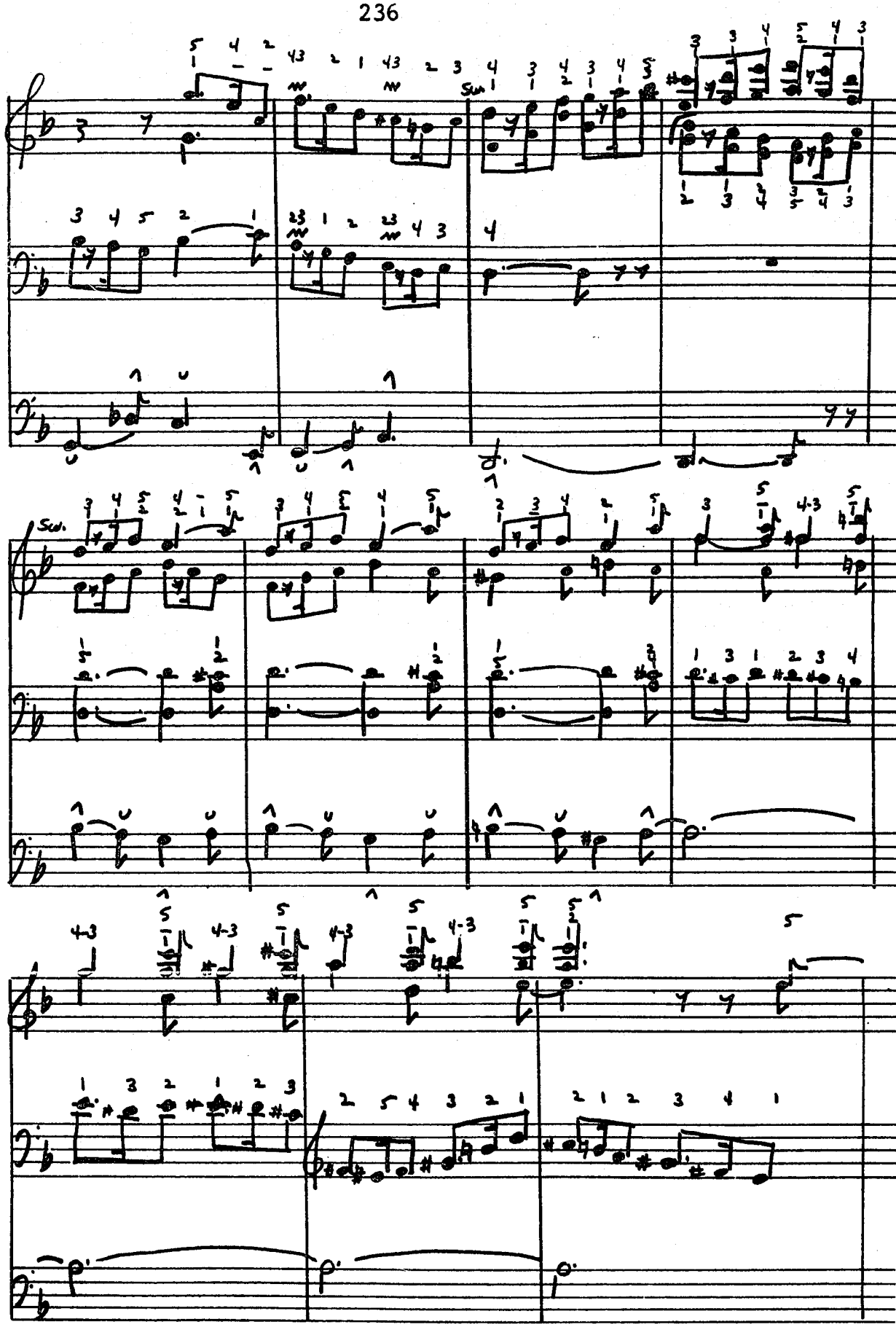
A Rare Song In Praise Of Christmas

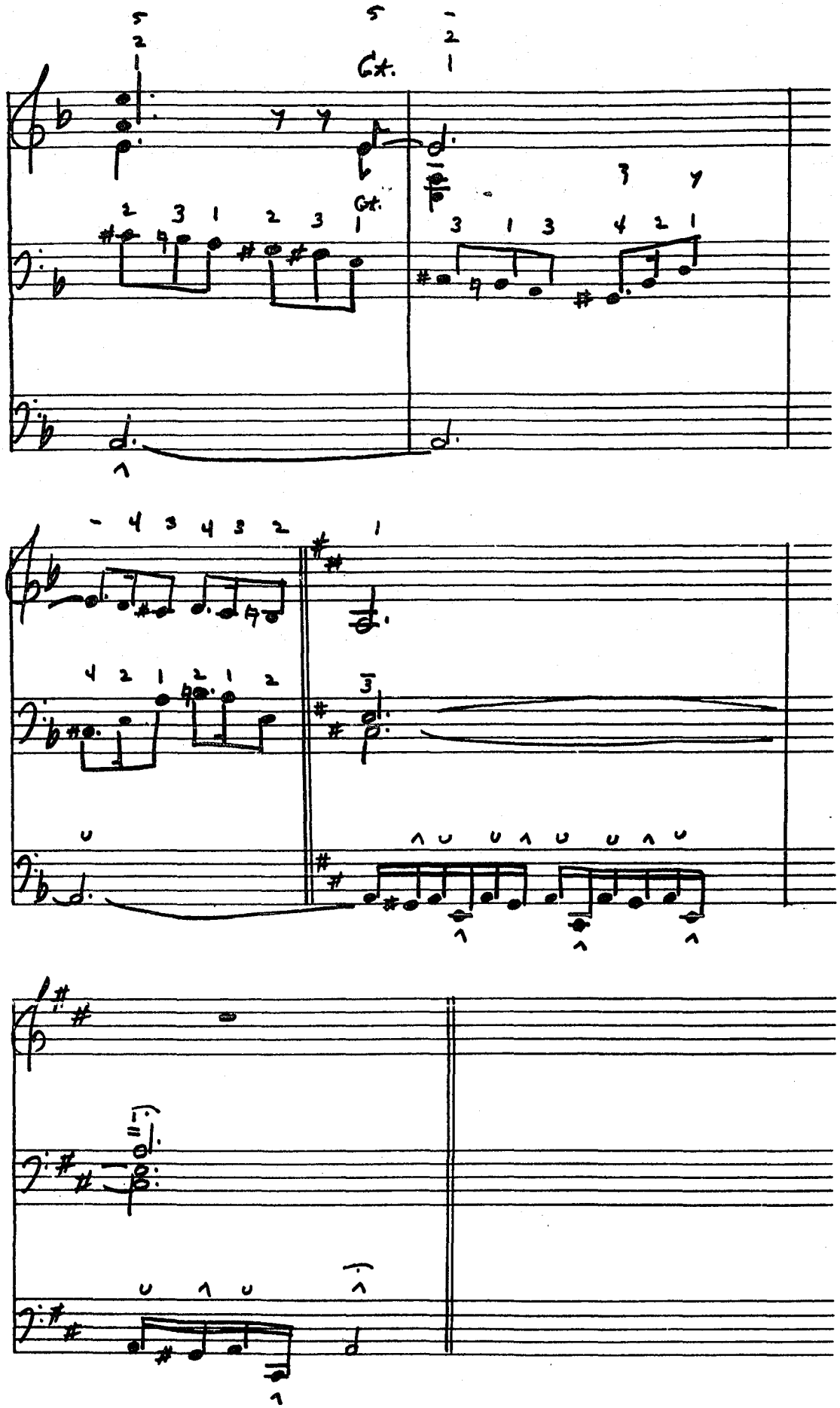
W. T. Best




sw.
sw.






Gt.
Gt.

APPENDIX B

EXPERIMENTAL GROUP TEACHERS

		Number of Beginning Students
DOROTHY ADDY	Wichita, Kansas	2
Organ professor, Friends College		
LORITTA BAXTER	Oklahoma City, Oklahoma	2
Organist, Highland Hills Baptist Church		
JAN BIRTCIL	Tulsa, Oklahoma	1
Organist, First Baptist Church		
JAMES BULLOCK	Norman, Oklahoma	2
Graduate organ assistant, University of Oklahoma		
ILAH DIXON	Springfield, Missouri	1
Organ professor, Southwest Missouri State College		
ANTONE GODDING	Oklahoma City, Oklahoma	2
Organ professor, Oklahoma City University		
SHARON LYON	Nashville, Tennessee	1
Organist, First Baptist Church		
CAROLYN ORBIN	Overland Park, Kansas	2
Organist, Overland Park Baptist Church		
VIRGINIA RIDENHOUR	Tulsa, Oklahoma	2
Organist, Brookside Baptist Church		
DONN ROWLETT	Seminole, Oklahoma	1
Organist, First Methodist Church		

CONTROL GROUP TEACHERS

		Number of Beginning Students
TOMMI COX	Shawnee, Oklahoma	1
Organist, First Presbyterian Church		
JOANNE CURNUTT	Stillwater, Oklahoma	6
Organ professor, Oklahoma State University		
ELIZABETH FARRIS	Edmond, Oklahoma	2
Organ professor, Central State University		
CAROL SUE FRANKLIN	Shawnee, Oklahoma	1
Senior organ student, Oklahoma Baptist University		
JOYCE LINTON	Shawnee, Oklahoma	1
Organ major, Oklahoma Baptist University		
RUBY MOFFITT	Springfield, Missouri	2
Private organ studio		
JOHN SMITH	Putnam City, Oklahoma	2
Organist, Putnam City Baptist Church		
MRS. A LeROY TAYLOR	Bethany, Oklahoma	1
Organ professor, Bethany Nazarene College		
TED WILBANKS	Moore, Oklahoma	1
Organ professor, Hillsdale Free Will Baptist College		

TEACHER EVALUATION OF ORGAN STUDY

Name _____

Address _____

1. Instructional material includes the necessary beginning techniques?

   (underline one)

   Yes
   Most
   Some
   No

2. Provides for gradual development of the basic fundamentals?

   Yes
   Usually
   Sometimes
   No

3. Repertoire interesting and advantageous for the student?

   Yes
   Usually
   Sometimes
   No

4. Can be adjusted to the individual student?

   Yes
   Usually
   Sometimes
   No

5. Prepares the student for playing simple hymns?

   Yes
   Usually
   Sometimes
   No

TEACHER EVALUATION
EXPERIMENTAL METHOD

1. Instructional material includes the necessary beginning techniques?

TEACHER NUMBER	YES	MOST	SOME	NO
E 01	X			
E 02		X		
E 03	X			
E 04	X			
E 05	X			
E 06		X		
E 07	X			
E 08	X			
E 09	X			
E 10		X		

TEACHER EVALUATION
EXPERIMENTAL METHOD

2. Provides for gradual development of the basic fundamentals?

TEACHER NUMBER	YES	USUALLY	SOMETIMES	NO
E 01	X			
E 02		X		
E 03	X			
E 04	X			
E 05	X			
E 06		X		
E 07	X			
E 08	X			
E 09	X			
E 10	X			

TEACHER EVALUATION
EXPERIMENTAL METHOD

3. Repertoire interesting and advantageous for the student?

TEACHER NUMBER	YES	USUALLY	SOMETIMES	NO
E 01	X			
E 02		X		
E 03		X		
E 04	X			
E 05		X		
E 06			X	
E 07	X			
E 08		X		
E 09	X			
E 10		X		

TEACHER EVALUATION
EXPERIMENTAL METHOD

4. Can be adjusted to the individual student?

TEACHER NUMBER	YES	USUALLY	SOMETIMES	NO
E 01	X			
E 02	X			
E 03	X			
E 04	X			
E 05		X		
E 06			X	
E 07	X			
E 08		X		
E 09	X			
E 10		X		

TEACHER EVALUATION
EXPERIMENTAL METHOD

5. Prepares the student for playing simple hymns?

TEACHER NUMBER	YES	USUALLY	SOMETIMES	NO
E 01	X			
E 02	X			
E 03	X			
E 04	X			
E 05	X			
E 06		X		
E 07	X			
E 08	X			
E 09	X			
E 10	X			

STUDENT EVALUATION OF ORGAN STUDY

Name _____

Address _____

Grade in School _____ Age _____

1. Are you now playing the organ for church services?
   (underline one) Regularly / Occasionally / None

2. How do you plan to apply your organ study?
   Professional organist or teacher
   Part-time church organist
   Play only for fun or amusement
   Not continue playing

3. Would you recommend this course of study to a friend?
   Yes
   No

4. Underline the words that best describe these lessons.

Challenging	Enjoyable
Boring	Interesting
Fun	Absurd
Ridiculous	Inconsistent
Easy	Intriguing

STUDENT EVALUATION
EXPERIMENTAL METHOD

1. Are you now playing the organ for church services?

Student Number	Regularly	Occasionally	None
02			X
07			X
09			X
11		X	
12			X
15		X	
19			X
22			X
23			X
25			X
26			X
27			X
28		X	
30			X
31		X	
32			X

STUDENT EVALUATION
EXPERIMENTAL METHOD

2. How do you plan to apply your organ study?

STUDENT NUMBER	PROFESSIONAL ORGANIST OR TEACHER	PART-TIME CHURCH ORGANIST	ONLY FOR FUN OR AMUSEMENT	NOT CONTINUE PLAYING
02		X	X	
07			X	
09		X		
11		X	X	
12		X	X	
15		X	X	
19		X	X	
22			X	
23		X		
25			X	
26	X			
27		X		
28	X			
30	X	X	X	
31	X			
32		X		

STUDENT EVALUATION
EXPERIMENTAL METHOD

3. Would you recommend this course of study to a friend?

STUDENT NUMBER	YES	NO
02	X	
07	X	
09	X	
11	X	
12	X	
15	X	
19	X	
22	X	
23	X	
25	X	
26	X	
27	X	
28		X
30	X	
31	X	
32	X	

STUDENT EVALUATION
EXPERIMENTAL METHOD

4. Underline the words that best describe these lessons.

	02	07	09	11	12	15	19	22	23	25	26	27	28	30	31	32
Challenging	X		X	X	X	X	X	X	X		X	X			X	X
Boring													X		X*	
Fun														X		
Ridiculous																
Easy																
Enjoyable	X					X		X	X		X			X		X
Interesting	X	X	X			X		X	X	X	X	X		X	X	X
Absurd																
Inconsistent							X		X				X			
Intriguing															X	

*31 First four lessons boring because I already had most of the material. Starting with the fourth lesson the material was new and intriguing.

ORGAN SOLO INTERPRETATION STUDY
PERFORMANCE RATING SHEET

Instructions: Rate each performer in five categories: 1) musical interpretation; 2) rhythmic accuracy; 3) note accuracy; 4) fluency of technique; 5) over-all effect. Check at any point along the graduated scale, using the following guide: 1--a poor performance; 2--a below-average performance; 3--an average performance; 4--a good performance; 5--an excellent performance.

No.	Rating	Category Scores	Composite Score

Musical Interpretation

0.5 1 2 3 4 5 5.5

Rhythmic Accuracy

0.5 1 2 3 4 5 5.5

Note Accuracy

0.5 1 2 3 4 5 5.5

Fluency of Technique

0.5 1 2 3 4 5 5.5

Over-all Effect

0.5 1 2 3 4 5 5.5

Judge's Signature _____

TABLE 7

ORGAN JURY EVALUATION

RANDOM NUMBER	PUPIL NUMBER	O J 1	O J 2	O J 3	O J 4	O J 5	AVERAGE RATING	
1	29	1.75	4.2	3.55	3.2	2.9	3.12	
2	26	2.8	5.0	4.35	3.8	3.65	3.92	X
3	27	3.7	5.0	4.5	3.4	4.3	4.18	X
4	05	2.6	4.4	4.8	4.2	3.95	3.99	
5	18	2.9	3.6	3.85	2.6	2.85	2.76	
6	13	1.75	4.2	3.7	3.2	3.3	3.23	
7	08	1.4	3.0	2.05	2.0	2.4	2.09	
8	09	1.8	3.2	2.8	2.0	2.7	2.50	X
9	04	2.05	3.8	3.8	2.0	2.0	2.73	
10	22	2.65	5.5	3.7	4.5	3.3	3.93	X
11	17	1.35	3.0	1.5	1.8	2.4	2.01	
12	28	4.0	5.4	5.0	5.0	4.45	4.77	X
13	23	3.3	3.4	3.2	3.8	4.0	3.54	X
14	19	4.0	4.0	2.7	4.0	3.8	3.70	X
15	30	3.5	5.5	4.25	4.8	3.8	4.37	X
16	14	2.9	5.5	4.1	3.6	3.8	3.98	
17	07	2.7	3.4	4.15	3.2	2.7	3.23	X

X = EXPERIMENTAL METHOD STUDENT

TABLE 7 - Continued

ORGAN JURY EVALUATION

RANDOM NUMBER	PUPIL NUMBER	O J 1	O J 2	O J 3	O J 4	O J 5	AVERAGE RATING	
18	03	2.45	4.2	2.55	2.5	3.3	3.00	
19	16	2.55	5.0	3.6	3.8	3.9	3.75	
20	33	.95	2.4	.90	1.0	1.25	1.30	
21	15	2.95	5.0	3.7	3.1	2.6	3.47	X
22	20	2.7	4.2	2.45	4.0	3.3	3.33	
23	06	.95	3.4	2.45	3.0	2.5	2.46	
24	21	3.05	4.0	4.15	4.4	4.0	3.92	
25	11	2.90	5.0	2.5	2.8	3.1	3.26	X
26	10	2.3	3.4	2.25	2.5	2.65	2.62	
27	12	2.75	3.4	1.75	2.1	2.65	2.53	X
28	02	3.75	5.0	1.6	4.0	3.95	3.66	X
29	25	3.75	3.8	3.25	3.7	4.0	3.70	X
30	24	2.85	2.8	2.5	2.1	2.35	2.52	
31	01	3.45	2.8	2.6	2.0	2.5	2.67	
32	32	1.85	2.8	2.0	1.75	2.75	2.23	X
33	31	3.9	5.0	3.8	4.98	3.7	4.28	X

TABLE 8

RESEARCH JURY EVALUATION

RANDOM NUMBER	PUPIL NUMBER	R J 1	R J 2	R J 3	R J 4	R J 5	AVERAGE RATING	
1	29	3.6	1.5	4.0	3.0	2.0	2.82	
2	26	4.2	2.2	2.6	3.2	2.95	3.03	X
3	27	3.6	3.2	4.9	2.2	2.85	3.35	X
4	05	4.2	2.5	1.3	2.35	3.55	2.78	
5	18	2.6	2.6	3.15	2.05	3.6	2.80	
6	13	3.0	2.7	1.75	2.9	4.15	2.90	
7	08	2.0	2.25	.80	1.6	1.3	1.59	
8	09	3.0	2.25	2.65	1.75	1.6	2.25	X
9	04	2.8	1.8	2.8	1.45	2.7	2.31	
10	22	4.0	3.5	3.75	1.9	4.2	3.47	X
11	17	1.0	1.8	.50	1.65	.80	1.15	
12	28	5.0	3.95	4.4	4.1	5.0	4.49	X
13	23	4.0	2.2	2.95	2.0	2.45	2.72	X
14	19	4.4	3.05	3.75	2.15	3.0	3.27	X
15	30	3.4	2.75	3.3	3.2	4.5	3.43	X
16	14	3.4	3.0	4.75	2.8	3.0	3.39	
17	07	3.0	2.85	3.25	2.6	3.05	2.95	X

TABLE 8 - Continued

RESEARCH JURY EVALUATION

RANDOM NUMBER	PUPIL NUMBER	R J 1	R J 2	R J 3	R J 4	R J 5	AVERAGE RATING	
18	03	3.8	2.45	1.45	2.05	3.2	2.59	
19	16	3.4	3.05	3.0	3.1	3.4	3.19	
20	33	1.0	1.0	.50	1.0	.60	.82	
21	15	3.4	3.0	3.0	3.2	3.65	3.25	X
22	20	3.4	2.3	2.55	2.2	4.65	3.02	
23	06	3.2	2.35	1.65	2.5	3.25	2.59	
24	21	3.4	3.5	3.1	3.4	4.85	3.65	
25	11	4.0	2.9	3.8	3.75	2.8	3.45	X
26	10	3.2	2.1	3.0	1.25	2.8	2.47	
27	12	3.5	2.8	3.65	2.88	2.65	3.10	X
28	02	3.2	2.8	2.15	1.42	2.6	2.43	X
29	25	4.4	3.65	3.25	3.83	3.55	3.74	X
30	24	3.1	1.9	1.2	2.15	1.0	1.87	
31	01	3.1	2.2	2.8	2.3	2.25	2.53	
32	32	3.5	1.5	3.0	2.5	2.65	2.63	X
33	31	4.1	3.95	4.75	4.0	4.65	4.29	X

TABLE 9

COMPARISON OF AGE GROUPS

HIGH SCHOOL AND UNDER				COLLEGE AND ADULT			
EXPERIMENTAL GROUP		CONTROL GROUP		EXPERIMENTAL GROUP		CONTROL GROUP	
STUDENT NUMBER	AVERAGE RATING	STUDENT NUMBER	AVERAGE RATING	STUDENT NUMBER	AVERAGE RATING	STUDENT NUMBER	AVERAGE RATING
07	3.09	01	2.60	02	3.04	03	3.79
11	3.36	04	2.52	09	2.38	05	3.39
12	2.82	13	3.07	15	3.36	06	2.53
25	3.72	21	3.79	19	3.49	08	1.84
26	3.48	29	2.97	22	3.70	10	2.55
30	3.90			23	3.13	14	3.69
31	4.29			27	3.77	16	3.47
				28	4.63	17	1.58
				32	2.43	18	2.78
						20	3.18
						24	2.20
						33	1.06
TOTAL	24.66		14.95		29.93		32.06
MEAN	3.52		2.99		3.33		2.67

TABLE 10

KENDALL COEFFICIENT OF CONCORDANCE: W

	STUDENT NUMBERS										
JURY	1	2	3	4	5	6	7	8	9	10	11
R J 1	11.5	4.5	11.5	24.5	30	27	31	27	29	8	32.5
R J 2	31.5	25	6	18	17	16	22.5	29.5	4.5	4.5	29.5
R J 3	5	23	1	29	13	26	31	22	20.5	7.5	32.5
R J 4	10	7	19.5	17	23.5	11	29	27	30	26	28
R J 5	28	18	19	10.5	9	7	30	29	22	6	32
O J 1	28.5	16	6	21	13	28.5	30	27	25	20	31
O J 2	14.5	11	11	12	21	14.5	28.5	27	19.5	2	28.5
O J 3	16	4	3	2	9	13	28	19	10.5	13	32
O J 4	17	11	15	6	22	17	28.5	28.5	28.5	4	31
O J 5	19	13	2	6.5	20	15.5	29.5	22.5	32	15.5	29.5
TOTAL	181.0	132.5	94.0	126.5	177.5	175.5	288.0	251.5	246.5	106.5	306.5
MEAN	18.1	13.2	9.4	12.6	17.8	17.6	28.8	25.2	24.6	10.6	30.6

TABLE 10 - Continued

KENDALL COEFFICIENT OF CONCORDANCE: W

	STUDENT NUMBERS										
JURY	12	13	14	15	16	17	18	19	20	21	22
R J 1	1	8	2.5	17.5	17.5	27	10	17.5	32.5	17.5	17.5
R J 2	1.5	25	7.5	15	9.5	12	19	7.5	33	9.5	21
R J 3	4	19	7.5	10	2.5	11.5	28	16.5	32.5	16.5	24
R J 4	1	25	21.5	7	13	14	23.5	9	33	7	19.5
R J 5	1	26	16.5	5	16.5	15	14	12	33	8	3.5
O J 1	1.5	9	1.5	7	13	18.5	23	22	32.5	11	18.5
O J 2	7	24	17.5	2	2	24	14.5	11	33	11	14.5
O J 3	1	18	20	5	8	6.5	22	15	33	13	25.5
O J 4	1	11	8	3	14	17	23.5	11	33	19	8
O J 5	1	4	10	10	10	22.5	15.5	8	33	26	15.5
TOTAL	20.0	169.0	112.5	81.5	106.0	168.0	193.0	129.5	325.5	138.5	167.5
MEAN	2.0	17.0	11.2	8.2	10.6	16.8	19.3	13.0	32.6	13.8	16.8

TABLE 10 - Continued

KENDALL COEFFICIENT OF CONCORDANCE: W

	STUDENT NUMBERS										
JURY	23	24	25	26	27	28	29	30	31	32	33
R J 1	22	17.5	8	22	13.5	22	2.5	24.5	24.5	13.5	6
R J 2	20	4.5	11	27	13.5	13.5	3	28	25	31.5	1.5
R J 3	27	14	6	16.5	9	25	11.5	30	20.5	16.5	2.5
R J 4	15.5	5	4	32	12	31	3	21.5	18	15.5	2
R J 5	13	2	20.5	20.5	23.5	25	10.5	31	27	23.5	3.5
O J 1	32.5	10	13	24	17	4.5	4.5	15	8	26	3
O J 2	24	17.5	11	24	24	11	19.5	31	31	31	11
O J 3	25.5	6.5	23.5	27	30	31	17	23.5	21	29	10.5
O J 4	20	5	2.1	23.5	25.5	8	13	25.5	28.5	32	2
O J 5	27.5	4	18	24.5	24.5	6.5	4	31	27.5	21	12
TOTAL	227.0	86.0	117.1	241.0	192.5	177.5	88.5	261.0	231.0	239.5	54.0
MEAN	22.7	8.6	11.7	24.1	19.2	17.8	8.8	26.0	23.1	24.0	5.4