PREFACE

I am honoured to introduce the Royal Scottish Pipe Band Association’s Structured Learning Book 3. This Publication marks the culmination of a project which has spanned three years. Throughout this time the views and ideas of devoted, talented musicians have fused together resulting in a new series of music education manuals.

Increasing sales volumes at home and overseas are evidence of the acceptance of Books 1 and 2 and there is an assured feeling that Book 3 will prove to be well sought after.

The Royal Scottish Pipe Band Association is grateful to all who have contributed to the completion and presentation of the series and wishes success to all who will make use of the Structured Learning Books.

E. Sturgeon

PRESIDENT, 1998 to 1993

SECOND EDITION 1995
Introduction

The publication of Book 3 in Structured Learning Series, covering the revised curriculum of the Advanced Certificate Course, marks a significant milestone in the progress of the Music Board of the Royal Scottish Pipe Band Association.

The evolution and development of our musical culture is a fundamental feature of the Association's objectives. The Structured Learning material contained in Books 1, 2 and 3 makes available the most up-to-date educational material relevant to the instruction of piping and drumming. This will ensure that the development of our musical culture is based on the highest standards of musical theory and practice.

Every effort has been made to present the lessons in as logical a manner as possible, with the overriding emphasis on clarity and consistency of presentation.

The Music Board is indebted to Jim Wark, John Kennedy and John MacInnes for providing their original source material freely for the purposes of this project.

A unique record was established on the completion of this series of instruction manuals in that John K. MacAllister now has the distinction of having participated in the production of the original Tutor & Text Books Volumes 1 & 2 and also the complete Structured Learning Series. This involvement has spanned a total of 40 years and is indeed a remarkable achievement worthy of recording in this introduction.

An immense debt of gratitude is due to Iain Duncan for his contribution in lesson layout and graphical presentation and to the members of the working group listed below who researched and generated the full work.

Thomas Andrews
Iain Duncan - Graphics and Presentation Co-ordinator
John Kennedy
John K. MacAllister
Robert McFie
John MacInnes
James Wark
Wilson Young - Group Co-ordinator

As in the previous publications, a special thanks must be given to Sandra Sutherland for her dedicated work in typing all the documentation associated with this book.

Finally, for invaluable support in all aspects of reprographics throughout the Structured Learning Series, we are indebted to Christine Ross.

The Music Board commends this publication to the membership and all who wish to further their musical knowledge and skill in piping and drumming.

Wilson Young
Music Board Curriculum Development Convener
Structured Learning

The authors and compilers:

STANDING: Left to Right
Jim Wark  Glasgow
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John MacInnes  Dunblane
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John K MacAllister  Shotts
Wilson Young  Strathaven
Bob McFie  Glasgow

(Not in picture, David Clark, Symington, was a co-author/compiler of Book 1, 1989-1999)
STRUCTURED LEARNING – BOOK 3
THE ADVANCED CERTIFICATE

It is essential that prior to reading this tutor, all students should have familiarised themselves with the content of *Structured Learning*, Books 1 and 2.
TECHNIQUES OF STUDY

Whether in the formal class situation or working at home it is important that the student develops a responsible attitude to learning and study which suits their particular circumstances. Study is difficult and demanding work but it can also be very enjoyable and personally rewarding as your knowledge and practical ability develop.

A feature of this presentation is that students can progress through the theory or practical aspects of the work at a pace which is consistent with their particular level of ability in each area, thereby avoiding the frustration of being held back say in the practical side because their theoretical knowledge does not match their practical ability, or vice versa.

In order that full advantage may be taken of these features it is suggested that the following broad guide-lines be adopted in approach to effective study.

1. Plan in advance how you intend to progress through the theory part of the curriculum. i.e.; sequentially – Lesson 1 followed by Lesson 2 etc. or perhaps in some other arrangement to suit your level of knowledge.

2. Organise your study and practice to avoid the trap of wasting time. Ask yourself whether you are really learning or thinking – or are you merely frittering away your time?

3. Understanding is the key to learning and remembering. If you understand a principle, it is easy to remember it and apply it in developing your practical musicianship.

4. In memorising details of musical theory, put your books aside from time to time and test yourself. This will help you to identify the point which are most difficult to recall and allow you to give them special attention.

5. Make a note of the points on which you are not clear and discuss them with your instructor or with an experienced piper or drummer.

6. Do remember that to write neat and clear musical notation takes practice so make sure that you spend sufficient time on this important aspect of your studies.

7. An instructor may find it beneficial to ask the student to study certain theory lessons at home at their own pace and concentrate on practical instruction in the classroom situation. Where this is done it is important that the instructor tests the understanding of the student on these particular theory lessons at the next formal teaching session and clarify any points of doubt.

8. Both pipers and drummers should study musical theory together and only when it comes to practical instruction should they be treated separately.

Not all these suggestions are necessarily suitable for every student, each person must develop the technique of study and practice which suits them best. But it is important to consider from time to time whether your study methods are most effective for you.

The Music Board wishes you every success in your studies.
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3.1. Scales (Part 1)  
Tetrachords, the Diatonic Scale, Major and Minor Thirds

3.2. Tonality (Part 1)  
Major Scales and Minor Scales (accidentals)

3.3. Relative Scales

3.4. Tonality  
Major scales and Minor Scales (upward and downward movement).  
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3.5. Scales (Part 2)  
The Chromatic Scale

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The Whole-tone Scale, the pentatonic Scale, the Diatonic Scale.

3.7. Scales (Part 4)  
The Bagpipe scale

3.8. Scales (Part 5)  
Harmonic and Melodic Minor Scales.

3.9. Intervals

3.10. Inversions

3.11. Transposition

3.12. The constituents of Music  
Rhythm; Melody (forms, phrases, motifs, cadences), Harmony.

3.13. Musical Form

3.14. Ensemble

3.18.1 to 3.18.10 Structured Learning Index  
This index is a comprehensive listing of musical terms as found in the Lessons in Structured Learning, Books 1, 2 and 3.
# Structured Learning – The Advanced Certificate

## Piping and Drumming Practical

### The Great Highland Bagpipe

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3.17.6)
SCALES (PART 1)

The earliest scales consisted of four notes called Tetrachords (tetra, meaning four). These were developed by the ancient Greeks. Each tetrachord had a different arrangement of sounds or mode. The modes were named after Greek sects.

i.e. Dorian, Ionian, Lydian, Aeolian.

The modes or scales were developed to become the foundation of music typical of Western Culture.

An example of this development was the combining of two tetrachords to form an eight note scale.

Tetrachords

The two tetrachords are separated by either a tone or a semitone. This is referred to as the ‘Interval of Disjunction’.

First, or Second, or

‘Interval of Disjunction’.

Many different scales are in use, the more common being the diatonic, chromatic, whole-tone and pentatonic.
3.1.2

The Diatonic Scale

The diatonic scale consists of an arrangement of eight notes separated by tones and semitones within the octave and can be divided into two different groups as follows:

Major (T T S T T T S) Ionian Mode

C Major Scale (both tetrachords have the same pattern)

Minor (T S T T S T T) Aeolian Mode

A minor scale (both tetrachords have different patterns)

In the above illustrations, the particular pattern of tones and semitones shown, are the features which give major and minor scales their distinctive characteristics. Major music may be generally described as bright, light-hearted or extroverted.

Minor music may be similarly described as dark, sad or introverted.

These are extreme comparisons as composers have identified new qualities in music by drawing Major and Minor Music closer together.

When playing a scale on the white keys of a keyboard instrument ascending from ‘C’, a pattern of intervals consisting of T T S T T T S is obtained. This is known as the ‘Natural’ major scale.
3.1.3

When playing a scale on the white keys of a keyboard instrument ascending from ‘A’, a pattern of intervals consisting of T S T T S T T is obtained. This is known as the ‘natural’ minor scale.

The C major scale, and the A minor scale are said to be relative to each other because both contain no sharps or flats.

**Major and Minor Thirds**

It should be observed that the distinction between major and minor scales is the characteristic interval between the first and third degrees as illustrated below.

![Major and Minor Thirds](image)

The major third has four semitones. i.e. 2 tones

The minor third has three semitones i.e. 1 ½ tones

The major and minor patterns must be understood and memorised as they are very important in relation to later lessons on tonality.

**Tonality** may be defined as the ordered arrangement of tones and semitones form the tonic to which all other notes relate.
LESSON 1 WORKSHEET

ORAL WORK

1. What is a tetrachord?

2. What names are given to the Tetrachords of an eight note scale?

3. What is the name of the interval which separates the Tetrachords?

4. What is a Diatonic Scale?

5. What is the pattern of tones and semitones in the following :-
   a) The Major Scale?
   b) The Minor Scale?

6. What is the pitch name of the following :-
   a) The Natural Major Scale?
   b) The Natural Minor Scale?

7. What characteristics distinguish major scales from minor scales?

8. How many semitones are there in the following :-
   a) A major third?
   b) A minor third?
Written Work

1. Draw a blank staff and then illustrate the following:
   a) The treble clef and the C major scale using minims.
   b) Show the pattern of intervals by the use of the letters T (tone) and S (semitone) placed between each note as appropriate.
   c) Using brackets, show the tetrachords.

2. Draw a blank staff and illustrate the following:
   a) The bass clef and the A minor scale using crotchets.
   b) Show the pattern of intervals by the use of the letters T (tone) and S (semitone) placed between each note as appropriate.
   c) Using brackets, show the tetrachords.

3. Compare the tetrachords in the diagrams produced from Questions 1 and 2, and write a short answer to describe ‘similar’ and ‘dissimilar’ tetrachords.
3.2.1

LESSON 2

TONALITY (PART 1)

Introduction

Major and minor diatonic scales provide the basis for music typical of Western culture. Prior to the mid-17th Century, enharmonic notes such as C♯ and D♭ were not of the same pitch and consequently keyboard instruments were bulky and unwieldy.

To reduce the number of keys on keyboard instruments, the modern scale was created, and became known as the *mean tempered scale*. During the 18th century, J.S. Bach, using the mean tempered scale, produced a series of ‘piano pieces’ which were structured so that in each, a different semitone was used as the tonic. The ‘piano pieces’ were written in both major and minor modes.

Using the different semitones as the tonic, means that the pattern of tones and semitones within the scale changes from one tonic to another. In order that the correct tone and semitone patterns are established, particular notes have to be adjusted by means of accidentals. These must apply throughout the duration of the music. The number of accidentals required varies, depending on the tonic selected.
3.2.2

Major Scales (Incorporating Sharps)

Using C major (the natural major scale) no accidentals are required.

The C major scale would have the following pattern of tones and semitones:

![C Major Scale Pattern]

However, the scale with B as the tonic, would have the following incorrect pattern of tones and semitones:

![Incorrect B Major Scale Pattern]

This would require accidentals to restore the major scale pattern as shown below.

![Correct B Major Scale Pattern]

Resulting in the scale of B major (B is the tonic, major is the mode).

In the case of B major, five sharps must be used. As a result of these requirements, the staff can become complicated and inevitably cluttered with symbols. To reduce the possible confusion and to ease interpretation, a procedure for simplifying the placement of accidentals was developed.
3.2.3

To avoid writing these sharps every time they occur in a scale which has B as its keynote, the sharps are placed in a group on the staff after the clef, but before the time signature, forming a key signature. This indicates that in the B major scale all F’s, C’s, G’s, D’s, and A’s are to be played sharp.

The above diagram illustrates the B major scale with its five sharps forming the key signature correctly positioned following the clef sign.

The key signature determines the pitch of a composition within the compass of a particular clef.

The process of positioning accidentals in Key Signature formation is explained in greater detail commencing on Page 3.4.1
Minor Scales (Incorporating Sharps)

Using A minor (the natural minor scale) no accidentals are required.

The A minor scale would have the following pattern of tones and semitones:

However, the scale with G# as the tonic would have the following incorrect pattern of tones and semitones:

This would require accidentals to restore the minor scale pattern as shown below.

Resulting in the scale of G# minor, five sharps must be used. To avoid writing these sharps every time they occur in a scale which has G as its keynote, the sharps are placed in a group on the staff after the clef, but before the time signature, forming the key signature. This indicates that in the G# minor scale, all F’s, C’s, G’s, D’s and A’s are played sharp.
3.2.5

Examination of the key signature reveals that G is affected by a sharp and for that reason the scale is known as G\textsuperscript{7} minor.

\[ \begin{array}{c}
\text{G}\text{7}
\end{array} \]

The above diagram featuring the key signature, illustrates the G\textsuperscript{7} minor scale with its given sharps correctly positioned immediately following the clef sign.
3.2.6

Major Scales (Incorporating Flats)

The C major scale would have the following pattern of tones and semitones:

![Tone](Tone | Tone | Semi-Tone | Tone | Tone | Semi-Tone)

However, the scale with D♭ as the tonic would have the following incorrect pattern of tones and semitones:

![Tone](Tone | Semi-Tone | Semi-Tone | Tone | Tone | Tone)

This would require accidentals to restore the major scale pattern as shown below.

![Tone](Tone | T | T | S | T | T | T | S)

Resulting in the scale of D♭ major (D♭ is the tonic, major is the mode).

In the case of D♭ major, five flats must be used.

To avoid writing these flats every time they occur in a scale which has Db as its keynote, the flats are placed in a group on the staff after the clef, but before the time signature, forming the key signature. This indicates that in D♭ major scale **all** B’s, E’s, A’s, D’s and G;s are to be played flat.
Examination of the key signature reveals that D is affected by a flat and for that reason the scale is known as D♭ major.

The above diagram shows the scale of D♭ major with its key signature correctly positioned.
3.2.8

**Minor Scales (Incorporating Flats)**

The A minor scale would have the following pattern of tones and semitones:

- Tone | Tone | Tone | Tone | Tone | Tone |

However, the scale with B as the tonic would have the following incorrect pattern of tones and semitones:

- Tone | Tone | Tone | Tone | Tone | Semitone |

This would require accidentals to restore the minor pattern as shown below.

- T
  - T | S | T | S | T | T

Resulting in the scale of B minor (B is the tonic, minor is the mode).

In the case of B minor, five flats must be used.

To avoid writing these flats every time they occur in a scale which has B as its keynote, the flats are played in a group on the staff after the clef, but before the time signature, forming the key signature. This indicates that in the B minor scale all B’s, E’s, A’s, D’s and G’s are to be played flat.
Examination of the key signature reveals that B is affected by a flat and for that reason the scale is known as B♭ minor.

The above diagram shows the scale of B♭ minor with its key signature correctly positioned.
3.2.10

Major Scales – Accidentals

The diagrams which follow show the progression and placement of accidentals in common usage in major scales.

Name of Key

<table>
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<th>Major</th>
<th>Number of Sharps</th>
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<td>4</td>
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<tr>
<td>F# Maj</td>
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<tr>
<td>C# Maj</td>
<td>7</td>
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Number of Sharps

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<tr>
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<tr>
<td>D Maj</td>
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Name of Key

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<td>Db Maj</td>
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<td>Gb Maj</td>
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Number of flats

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**Minor Scales - Accidentals**

The diagrams which follow show the progression and placement of accidentals in common usage in **minor scales**.

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<td>F# Min</td>
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<tr>
<td>C# Min</td>
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<td>A# Min</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of Key</th>
<th>Number of Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>D Min</td>
<td>1</td>
</tr>
<tr>
<td>G Min</td>
<td>2</td>
</tr>
<tr>
<td>C Min</td>
<td>3</td>
</tr>
<tr>
<td>F Min</td>
<td>4</td>
</tr>
<tr>
<td>Bb Min</td>
<td>5</td>
</tr>
<tr>
<td>Eb Min</td>
<td>6</td>
</tr>
<tr>
<td>Ab Min</td>
<td>7</td>
</tr>
</tbody>
</table>
LESSON 2 WORKSHEET

ORAL WORK

1. What is meant by the ‘Mean Tempered Scale’?

2. What is an accidental, and what is its function?

3. Define ‘Keynote’.

4. Explain the term ‘mode’ as it applies to music.

5. What is tonality?

6. What is a key signature, and what is its function?
LESSON 2 – WORKSHEET (CONT’D)

Written Work

Prepare four blank (barred) staffs using the example illustrated as a model.

1. A) On the first blank staff, draw the treble clef, and in each bar, using sharps, enter each key signature from C major to C♯ Major.
   B) Write the name of each key signature under the appropriate bar.

2. A) On the second blank staff, draw the bass clef, and in each bar, using flats, enter each key signature from C major to C♭ major.
   B) Write the name of each key signature under the appropriate bar.

3. A) On the third blank staff, draw the treble clef, and in each bar, using sharps, enter each key signature from A minor to A♯ minor.
   B) Write the name of each key signature under the appropriate bar.

4. A) On the fourth blank staff, draw the treble clef, and in each bar, using flats, enter each key signature from A minor to A♭ minor.
   B) Write the name of each key signature under the appropriate bar.
3.3.1

LESSON 3

Relative Scales

A comparison of the diagrams in Lesson 2 indicates that both major and minor scales may use the same key signatures.

These are known as relative scales.

Typical examples of major keys with their relative minor keys are shown below:

```
<table>
<thead>
<tr>
<th>C Major</th>
<th>G Major</th>
<th>D Major</th>
<th>A Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>♭</td>
<td>♯</td>
<td>♯♯</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A Minor</th>
<th>E Minor</th>
<th>B Minor</th>
<th>F# Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>♭</td>
<td>♯♯</td>
<td>♯</td>
</tr>
</tbody>
</table>
```

It may be observed that the submediant (or sixth degree) of a major scale is also the tonic of its relative minor scale.

Conversely, the mediant (or third degree) of a minor scale is the tonic of its relative major scale.

As C major and A minor are relative scales, so also are those scales which share the same key signature.
Figures 1 and 2 show fifteen major scales and fifteen minor scales in common use.

Students must familiarise themselves with all relative key signatures. A simple method of memorising the sequence of sharps and flats as they are shown on the staff forming the key signature, is by using the following phrase :-

1. **Few Can Gain Distinction And Escape Blame**
   
   i.e. For Sharps – **F C G D A E B**

   ![Diagram of major and minor keys with sharps](image1)

   It may be observed from the above diagrams that six of these keys are enharmonic in that they share the same tonic (i.e. 3 major and 3 minor).

   The enharmonic major keys
   
   C♯ and D♭, F♯ and G♭, B and C♯.

   The enharmonic minor keys
   
   A♭ and B♭, D♭ and E♭, G♭ and A♭.

   ![Enharmonic major keys diagram](image2)

   ![Enharmonic minor keys diagram](image3)
A table of Major Keys with their Relative Minors in the Treble Staff

<table>
<thead>
<tr>
<th>C Major</th>
<th>G Major</th>
<th>D Major</th>
<th>A Major</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A Minor</th>
<th>E Minor</th>
<th>B Minor</th>
<th>F♯ Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E Major</th>
<th>B Major</th>
<th>F♯ Major</th>
<th>C♯ Major</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C♯ Minor</th>
<th>G♯ Minor</th>
<th>D♯ Minor</th>
<th>A♯ Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F Major</th>
<th>B♭ Major</th>
<th>E♭ Major</th>
<th>A♭ Major</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D minor</th>
<th>G minor</th>
<th>C Minor</th>
<th>F Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D♭ Major</th>
<th>G♭ Major</th>
<th>C♭ Major</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B♭ Minor</th>
<th>E♭ Minor</th>
<th>A♭ Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.3.4

A table of Minor Keys with their Relative Majors in the Bass Staff

<table>
<thead>
<tr>
<th>C Major</th>
<th>G Major</th>
<th>D Major</th>
<th>A Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Minor</td>
<td>E Minor</td>
<td>B Minor</td>
<td>F# Minor</td>
</tr>
<tr>
<td>E Major</td>
<td>B Major</td>
<td>F# Major</td>
<td>C# Major</td>
</tr>
<tr>
<td>C# Minor</td>
<td>G# Minor</td>
<td>D# Minor</td>
<td>A# Minor</td>
</tr>
<tr>
<td>F Major</td>
<td>Bb Major</td>
<td>Eb Major</td>
<td>Ab Major</td>
</tr>
<tr>
<td>D minor</td>
<td>G minor</td>
<td>C Minor</td>
<td>F Minor</td>
</tr>
<tr>
<td>Db Major</td>
<td>Gb Major</td>
<td>Cb Major</td>
<td></td>
</tr>
<tr>
<td>Bb Minor</td>
<td>Eb Minor</td>
<td>Ab Minor</td>
<td></td>
</tr>
</tbody>
</table>
LESSON 3 WORKSHEET

ORAL WORK

1. When written as letters of the alphabet, how are the major and minor key signatures distinguished from each other?

2. Explain what is mean by ‘Relative Scales’.

3. Name the major keys which contain the following :-
   a) Three flats
   b) Four sharps
   c) One sharp
   d) No flats

4. Name the minor keys which contain the following :-
   a) Two sharps
   b) Two flats
   c) No sharps
   d) One flat

5. What is meant by ‘Enharmonic Keys’?
LESSON 3 – WORKSHEET (CONT’D)

Written Work

Prepare a blank (barred) staff on the basis of the example illustrated here.

1. On the blank staff, draw the treble clef and in the bars enter each of the following key signatures :
   a)  D major
   b)  B Major
   c)  F Major
   d)  G Major
   e)  F Major

2. Name the relative minor key signatures for the following key signatures :
   a) D major
   b) B Major
   c) F Major
   d) G Major
   e) F Major

3. Prepare a blank staff then carry out the following :
   a) Enter the alto clef on the staff
   b) Enter the C major scale. Use semibreves.
   c) Indicate the position of the semitone intervals by using ‘slurs’.
3.4.1

LESSON 4

Tonality Part 2

Major Scales

To simplify the allocation of a key signature when constructing major or minor scales, the procedure of using fifths, either upward from the tonic, or downward from the octave is applied.

Upward Movement (Major scales)

When movement is upward from the tonic, a key sign consisting of sharps is used.

The following text and diagrams illustrate an example of the construction of a major scale upward from the tonic.

1.1

Diagram 1.1 shows the C major scale. Observe that this scale has no sharps or flats. The dominant, or fifth upward from the tonic in this scale is G.

1.2

To construct the scale in G, take the dominant of the C scale (i.e. G) and make this the tonic of the new scale. The scale pattern as shown in diagram 1.2 is incorrect because the upper semitone should appear between the seventh and the octave.
To maintain the correct pattern of tones and semitones, the seventh or leading note must be augmented or sharpened as shown in diagram 1.3.

Diagram 1.4 illustrates the G major scale with its single sharp correctly positioned immediately following the clef sign.

The next scale in the upward sequence is D. The note D being the fifth or dominant of the G scale.

Diagram 1.5 shows a scale with D as the tonic with the upper semitone incorrectly positioned. The upper semitone should appear between the seventh and the octave.
To maintain the correct pattern of tones and semitones, the seventh or leading note must be augmented or sharpened as shown in diagram 1.6.

Diagram 1.7 illustrates the D major scale with its two sharps correctly positioned immediately following the clef sign.

The above diagrams illustrate an important law that from the **DOMINANT of any major scale**, a new scale can be built which needs only one note from the previous scale altered.

**This note is always the LEADING NOTE of the new scale.**

**N.B. This applies to the upward movement in major scales.**

By continuing this process, we may successfully form the scales of A, E, B, F♯ and C♯.
3.4.4

Tonality Part 3

Downward Movement (Major scales)

When movement is downward from the octave, a key sign consisting of flats is used. The following text and diagrams illustrate an example of the construction of A major scale downward from the octave.

2.1

Diagram 2.1 shows the C major scale. Observe that this scale has no sharps or flats. The subdominant, or fifth downward form the octave in this scale is F.

2.2

To construct the scale in F, take the subdominant of the C scale, (i.e. F) and make this the tonic of the new scale. The scale pattern as shown in diagram 2.2 is incorrect because the lower semitone should appear between the third and fourth interval.
To maintain the correct pattern of tones and semitones, the fourth or subdominant note must be diminished or flattened as shown in diagram 2.3.

Diagram 2.4 illustrates the F major scale with its single flat correctly positioned immediately following the clef sign.
The next scale in the **downward** sequence is B. The note B being the fifth **downward**, or subdominant of the F scale.

**Diagram 2.5** shows a scale with B as the tonic, with the lower semitone incorrectly positioned. The lower semitone should appear between the third and fourth intervals.

To maintain the correct pattern of tones and semitones, the fourth or subdominant must be diminished or flatted as shown in diagram **2.6**

**Diagram 2.7** illustrates the B major scale with its two flats correctly positioned immediately following the clef sign.
Examination of the key signature reveals that B is affected by a flat and for that reason the scale is known as B♭ major.

The above diagrams illustrate an important law that from the SUBDOMINAT of any major scale, a new scale can be built which needs only one note from the previous scale altered.

This note is always the SUBDOMINANT of the new scale.

N.B this applies to the downward movement in major scales.

By continuing the process as previously described we may form successively, the major scales of E♭, A♭, Db, G♭ and C♭.
**TONALITY PART 4**

**Minor Scales**

To simplify the allocation of a key signature when constructing major or minor scales, the procedure of using **fifths**, either upward from the tonic, or downward from the octave is applied.

**Upward Movement (Minor scales)**

When movement is upward from the tonic, a key sign consisting of sharps is used.

The following text and diagrams illustrate an example of the upward movement from the tonic using sharps.

**Diagram 3.1** shows the A minor scale. Observe that this scale has no sharps or flats. The dominant, or fifth upward from the tonic in this scale is E.

To construct the scale in E, take the dominant of the A scale (i.e., E) and make this the tonic of the new scale. The scale pattern as shown in diagram **3.2** is incorrect. The lower semitone should appear between the second and third notes.
To maintain the correct pattern of tones and semitones, the second note, or supertonic of the new scale must be augmented or raised by a semitone by using a sharp as shown in diagram 3.3.

Diagram 3.4 shows the E minor scale with its one sharp correctly positioned immediately following the clef sign.

The next scale in the upward sequence is B. The note B being the fifth or dominant upward from the tonic of the E minor scale.

Diagram 3.5 shows a scale with B as the tonic with the lower semitone incorrectly positioned. The lower semitone should appear between the second and third notes.
To maintain the correct pattern of tones and semitones, the second note, or supertonic of the new scale must be augmented or raised by a semitone by using a sharp as shown in diagram 3.6.

Diagram 3.7 shows the B minor scale with its two sharps correctly positioned immediately following the clef sign.

The above diagrams illustrate an important law that from the **DOMINANT of any minor scale**, a new scale can be built which needs only one note from the previous scale altered.

**This note is always the SUPERTONIC of the new scale.**

**N.B. This applies to the upward movement in minor scales.**

By continuing this process, we may successfully form the scales of F, C, G, and A minor.
LESSON 4 (PARTS 2-5) WORKSHEET

ORAL WORK

1. What are the interval numbers of the following notes:

   (e.g. Octave = 8\textsuperscript{th})

   a) Dominant
   b) Leading Note
   c) Tonic
   d) Subdominant
   e) Supertonic
   f) Submediant

2. What is the pattern of Tones and Semitones in a major scale?

3. At what intervals in the Minor Scale do the semitones occur?

4. Which note of one scale becomes the tonic of the next when constructing scales:

   a) Upward from the tonic?
   b) Downward from the octave?

5. State whether a key signature will consist of sharps or flats when constructing scales from:

   a) The subdominant
   b) The Dominant
LESSON 4 (PARTS 2-5) WORKSHEET (CONT’D)

WRITTEN WORK

1. Draw two blank staffs.
   
   a) On the first blank staff, enter the treble clef and use semibreves to show the natural major scale.

   b) Using the dominant of that scale, construct a new scale on the second blank staff.

   c) Name the new scale.

2. Draw two blank staffs.

   a) On the first blank staff, enter the treble clef and use semibreves to show the scale of C major.

   b) Using the subdominant of that scale, construct a new scale on the second blank staff.

   c) Name the new scale.

3. Name the relative minor keys to those identified in questions 1a, 1b, 2a and 2b.
3.4.13

**Tonality Part 5**

**Downward Movement (Minor scales)**

When movement is downward from the octave, a key sign consisting of flats is used.

The following text and diagrams illustrate an example of the downward movement from the octave using flats.

**Diagram 4.1** shows the A minor scale. Observe that this scale has no sharps or flats. The subdominant, or fifth downward from the tonic in this scale, is D.

**Diagram 4.2** is incorrect. The upper semitone should appear between the fifth and sixth notes.
To maintain the correct pattern of tones and semitones, the sixth note, or submediant must be diminished, or lowered by a semitone by using a flat as show in diagram 4.3.

Diagram 4.4 shows the D minor scale with its one flat correctly positioned immediately following the clef sign.

The next scale in the downward sequence is G. The note G being the fifth or subdominant downward from the octave of the D minor scale.

Diagram 4.5 shows a scale with G as the tonic with the upper semitone incorrectly positioned. The upper semitone should appear between the fifth and sixth notes.
To maintain the correct pattern of tones and semitones, the sixth note, or submediant, must be diminished or lowered by a semitone by using a flat as shown in diagram 4.6.

Diagram 4.7 illustrates the G minor scale with its two flats correctly positioned immediately following the clef sign.

The above diagrams illustrate an important law that from the SUBDOMINANT of any minor scale, a new scale can be built which needs only one note from the previous scale altered.

This note is always the SUBMEDIANT of the new scale.

N.B. This applies to the downward movement in minor scales.

By continuing this process, we may successfully form the scales of C, F, B♭, E♭ and A♭.
TONALITY (PART 6)

**Major scale construction using tetrachords**

The eight notes of major scales are divided into two groups of four known as tetrachords.

**Upward Movement (Major scales)**

5.1

![Diagram 5.1](image)

Diagram 5.1 shows the C major scale. Observe that the semitones lie in the same position within each tetrachord and that these semitones are marked with a slur.

The interval between the third and fourth notes, and between the seventh and eighth notes, in all major scales are semitones. The second or upper tetrachord of the scale of C major is shown as the first or lower tetrachord of a major scale starting on G. The second or upper tetrachord of the G scale is added.

5.2

![Diagram 5.2](image)

In diagram 5.2 observe that the second or upper tetrachord does not have a semitone between its third and fourth notes.

5.3

![Diagram 5.3](image)

In diagram 5.3 a sharp is placed before the note F, augmenting, or raising the note by a semitone to maintain the correct pattern of tones and semitones.
Diagram 5.4 shows the G major scale with its single sharp correctly positioned immediately following the clef sign.

**Downward movement**

In diagram 5.5, observe that the semitones lie in the same position within each tetrachord and that these semitones are marked with a slur.

The interval between the third and fourth notes, and between the seventh and eighth notes, in all major scales, are semitones.

In diagram 5.6, the first or lower tetrachord of the scale of C major is shown as the second or upper tetrachord of a major scale starting on F, and the second or upper tetrachord of the F scale is added. Observe that the first tetrachord does not have a semitone between its third and fourth notes.
In diagram 5.7, a flat is placed before the note B, diminishing or lowering it by a semitone to maintain the correct pattern of tones and semitones.

Diagram 5.8 shows the F major scale with its single flat correctly positioned immediately following the clef sign.
**TONALITY (PART 7)**

**Minor Scale construction using tetrachords**

The eight notes of the minor scales are divided into two groups of four known as *tetrachords*.

**Upward Movement (Minor scales)**

6.1

![Diagram 6.1 showing the A minor Scale. Observe that the semitones are in different positions within each tetrachord. These semitones are marked with a slur.](image)

The interval between the second and third notes and between the fifth and sixth notes in minor scales are semitones.

6.2

![Diagram 6.2 showing the second or upper tetrachord of the scale of A minor is shown as the first or lower tetrachord of A minor scale starting on E. The second or upper tetrachord of the E scale is added. Observe that the first or lower tetrachord does not have a semitone between its second and third notes.](image)

In diagram 6.2 the second or upper tetrachord of the scale of A minor is shown as the first or lower tetrachord of A minor scale starting on E. The second or upper tetrachord of the E scale is added. Observe that the first or lower tetrachord does not have a semitone between its second and third notes.

6.3

![Diagram 6.3 showing the re-establishment of the correct pattern of tones and semitones by placing a sharp before the note F augmenting or raising it a semitone as shown in diagram 6.3.](image)

In order to re-establish the correct pattern of tones and semitones a sharp is placed before the note F augmenting or raising it a semitone as shown in diagram 6.3.
Diagram 6.4 shows the E minor scale with its single sharp correctly positioned immediately following the clef sign.

**Downward Movement (Minor Scales)**

In diagram 6.5 observe that the semitones are in different positions within each tetrachord. These semitones are marked with a slur.

The interval between the second and third notes and between the fifth and sixth notes in minor scales are semitones.

In diagram 6.6 the first or lower tetrachord of the scale of A minor (as shown in diagram 6.5) becomes the second or upper tetrachord. The first, or lower tetrachord is added as shown with the D note becoming the new tonic. Observe that the upper tetrachord does not have a semitone between the fifth and sixth notes.
In order to establish the correct pattern of tones and semitones, a flat is placed before the note B diminishing or lowering it a semitone as shown in diagram 6.7.

Diagram 6.8 shows the D minor scale with its single flat correctly positioned immediately following the clef sign.
Tonality Part 8

The Circle of Fifths

The relationship of the major and relative minor keys may be demonstrated by the Circle of Fifths in the diagram below. The keys are arranged in order of ascending and descending fifths, starting with C major (A minor).

The order of sharp keys moves in fifths, clockwise from C major (A minor), the dominant of one key becoming the tonic of the next.

The diagram also illustrates the enharmonic keys previously mentioned in Lesson 3.
ORAL WORK

1. What is a tetrachord?

2. How are the Tetrachords of an eight note scale named?

3. What is significant about the major scale Tetrachords?

4. In the natural major scale, what are the pitch names of the notes on which the tetrachords begin?

5. What is the pattern of tones and semitones of the major scale?

6. State whether the resulting key signature will consist of sharps or flats when constructing scales using :-
   a) The upper tetrachord.
   b) The lower tetrachord.

7. What is meant by the ‘Circle of Fifths’?
LESSON 4 (PART 6-8) WORKSHEET

WRITTEN WORK

1. Draw two blank staffs.
   a) On the first staff, enter the treble clef, then show the scale of D major as semibreves
   b) Mark the positions of both tetrachords.
   c) On the second blank staff, construct a new scale using the lower tetrachord.
   d) Name the new scale.

2. Draw two blank staffs.
   a) On the first staff, enter the treble clef, then show the scale of E major as semibreves
   b) Mark the positions of both tetrachords.
   c) On the second blank staff, construct a new scale using the upper tetrachord.
   d) Name the new scale.

3. Name the relative minor keys to the four diagrams in your answers to question 1 and 2.
3.5.1

LESSON 5

Scales Part 2

When the black and white keys on a keyboard are played in pitch order, from C to C’, a scale consisting of twelve semitones is produced.

This is the Chromatic Scale.

A chromatic scale ascends or descends entirely by semitones and produces twelve sounds or steps between any note and its octave or tonic.

**Ascending**

```
C  C#  D  D#  E  F  F#  G  G#  A  A#  B  C
```

**Descending**

```
C  B  Bb  A  Ab  G  Gb  F  E  Eb  D  Db  C
```

To achieve the above, sharps or flats are used, as shown in the diagrams.

Observe that the natural semitones shown by the slurs are neither sharpened or flattened by the use of accidentals.

Observe further, that there are seven letters of the alphabet used for naming these twelve notes, five of the letters are used twice and remaining two letters once.
**3.5.2**

**Diatonic and Chromatic Semitones**

A **diatonic semitone** is one which the two notes are a semitone apart and have different letter names (e.g. E to F and B to C in the C major scale).

A **chromatic semitone** is one in which the two notes are a semitone apart and have the same letter name, with the exception of the natural semitones, E - F and B – C (e.g. A to A and G to G in the C major scale).

**Tonality and Atonality**

**Tonality** may be defined as the ordered arrangement of tones and semitones from the tonic to which all other notes relate.

**Tonality** is linked with the concept of a diatonic scale in which the notes, intervals and chords are contained in set patterns (e.g. tonic, dominant, subdominant).

The development of chromaticism as a scale in its own right, freed composers of the restrictions of tonality and resulted in the creation of a new musical form or field, termed **Atonality**.

The chromatic scale is also referred to as the **dodecaphonic** scale. (i.e. It consists of twelve equal notes or sounds each separated by a semitone).

Atonality is the abandoning of the use of key signatures within the major and minor tonal systems. The composition is organised without reference to a musical key and by the impartial use of notes from the chromatic scale.
LESSON 5 WORKSHEET

ORAL WORK

1. What is meant by ‘Chromatic Scale’?

2. How many semitones are there in an octave?

3. What is unique about the use of accidentals in a chromatic scale when:
   a) Ascending?
   b) Descending?

4. What type of music developed from the use of the chromatic scale?

5. Explain the term ‘Atonality’.

6. What other name is the chromatic scale known by?

7. What is the difference between a diatonic semitone and a chromatic semitone?

8. Using the C major scale, illustrate one example of:
   a) Diatonic semitone
   b) Chromatic semitone
LESSON 5 WORKSHEET (CONT’D)

WRITTEN WORK

On a blank staff, enter the F clef, and using the octave starting on C, show each note of the chromatic scale ascending and descending as semibreves.

Carefully place the accidentals as required and show the position of the diatonic semitones by using legato marks.
Scales Part 3

The Whole-Tone Scale

The intervals in this scale, as suggested by its name, consists of whole-tones only.

There is no implicit relationship between the notes of the scale (as in the diatonic scale – e.g. tonic, dominant, subdominant etc.). Basically there are two whole-tone scales, one starting on C and the other on C# (or its enharmonic equivalent – i.e. Db). There is a similarity between the music produced using this scale and ‘atonal music’.

The Whole-Tone Scale - C

\[ \text{N.B} \quad \text{Note B missing} \]

The Whole-Tone Scale – C#

\[ \text{N.B} \quad \text{Note E missing} \]

The Whole-Tone Scale – D\^1

\[ \text{N.B} \quad \text{Note C missing} \]
The Pentatonic Scale

The Pentatonic Scale is the name given to what is probably the most ancient musical scale. It may be easily produced using in sequence the five black keys of a keyboard instrument commencing with F♯. The scale consists of the first, second, third, fifth and sixth degrees of a modern Diatonic Scale. The result of this construction is that the smallest interval is a tone and the largest consists of a tone plus a semitone.

The Diatonic Scale

The above diagrams illustrate the relationship between the Diatonic and Pentatonic Scales. For simple comparison, the scales are shown with C as the tonic.

The existence of the large intervals are the reason why this scale is sometimes known as the ‘gapped scale’.

The following pentatonic scales are capable of being sounded within the compass of the bagpipe scale :-

N.B Available octave notes are shown in brackets, as above.
The following are well known examples of pentatonic music,

Auld Lang Syne

Ye Banks and Braes

Bugle Horn

The Campbells are Coming
ORAL WORK

1. How many Tone Intervals are contained in an octave

2. a) What is the name of the scale using Tone Intervals?
   b) How many notes are produced by this scale?

3. What type of music is developed using the Whole-Tone scale?

4. In the C major scale, what note is enharmonic with C♯?

5. What is a Pentatonic Scale?

6. What is the smallest interval in a Pentatonic Scale?

7. By what other name is the Pentatonic Scale known?

8. How many pentatonic scales can be sounded on the bagpipe chanter?

9. Name four tunes which are pentatonic.
LESSON 6 WORKSHEET (CONT’D)

WRITTEN WORK

1. a) On a blank staff, enter the F clef, and commencing on C, use crotchets to show a whole-tone scale.
   
   b) Insert the appropriate accidentals.

2. a) On a blank staff, enter the bass clef, and commencing on C, use minims to show the pentatonic scale.
   
   b) Show the pattern of intervals.

3. On a blank staff, enter the treble clef.

   Use semibreves to show all of the possible pentatonic scales which can be sounded on the bagpipe chanter.
LESSON 7

Scales Part 4

The Bagpipe Scale

Notation for the Great Highland Bagpipe is written indicating a pitch different to that of the actual sound produced. This identifies it as a TRANSPOSING INSTRUMENT.

In all transposing instruments (such as the Great Highland Bagpipes and most woodwind and brass instruments), the written notes represent the fingering as opposed to the pitch of the sounds produced.

Examination of compositions based on the bagpipe scale reveals that the most commonly used tonics in the written form are A and D.

In most cases, a bagpipe melody has the tonic as its final, or last note (i.e. the note on which the key signature is based).

In the written form, where low A is the tonic, as in diagram 1, the notation includes a diminished seventh and represents the A major scale as appropriate for the bagpipe.

1.

Observe the use of a ‘natural’ sign at high G (low G is also affected by the natural sign).

Written bagpipe music therefore requires a modified major key signature. (i.e. the third sharp – G- of the A major scale is replaced by a natural sign). This eliminates the need to show the A major key signature and a natural sign at every G note. This is illustrated in diagram 2.

2.
3.7.2

**When sounded** however, the scale produced by the bagpipe approximates to that of B♭ Major, with a **diminished seventh**, (i.e. as shown in diagram 3.

3.

![Diagram 3](image)

Observe that the tonic now occupies the position of B♭ and that the seventh is affected by the flat.

This scale may be described as a ‘**Mixolydian Mode** with a tonic of Bb.’ (The ‘Mixolydian Mode’ is derived from the ‘Lydian Mode’).

In the **written** form, where D is the tonic of a bagpipe composition, it conforms to the general tone-semitone pattern of a Major Diatonic Scale. This is illustrated in diagram 4.

4.

![Diagram 4](image)

When a bagpipe melody is **written** with D as its tonic, the melody is in the key of D major.

**When sounded**, however, the scale produced approximates to that of E♭ major (i.e. as shown in diagram 5).

5.

![Diagram 5](image)

Observe that the tonic now occupies the position of E♭.

Again, the scale may be described as a ‘Mixolydian Mode with a tonic of E♭.’

Diagrams 6.1 and 6.2 show the notional transposition of the scales of the commonly used tonics A and D. the diagrams also show the **actual sounds** produced. These approximate to the B♭ Major and E♭ Major respectively as previously described.
3.7.3

6.1 **Written Notation**  
**Actual Sound**

N.B Observe that the tone-semitone pattern does not wholly conform to a major diatonic scale, but that of the Mixolydian Mode.

6.2 **Written Notation**  
**Actual Sound**

N.B Observe that the general tone-semitone pattern conforms to that of a major diatonic scale.
Examples of music to illustrate the **transposing effect** of the Great Highland Bagpipe are given below:

### 7.1 Written Notation

The last two bars of ‘Scotland the Brave’ showing low A as the ‘final’ or tonic. (Observe the key signature).

![Musical notation]

### 7.2 Actual Sound

The actual sound showing B as the ‘final’. (Observe they key signature).

![Actual sound]

### 8.1 Written Notation

The last four bars of ‘The Earl of Mansfield’ showing D as the ‘final’ or tonic. (Observe the key signature).

![Musical notation]

### 8.2 Actual Sound

The actual sound showing E as the ‘final’. (Observe the key signature).

![Actual sound]
The variety of modes and pentatonic scales available for the composition of bagpipe music requires the careful examination of each melody to identify its particular key. It should be stressed that composition, written using key signatures other than A major and D major do exist, although these are uncommon.

It should be noted that due to the limitations of the bagpipe scale, it has become common practice to omit key signatures.
LESSON 7 WORKSHEET

ORAL WORK

1. What is a ‘transposing’ instrument?

2. Which are the two most common tonics when bagpipe music is sounded?

3. Which are the two most commonly used key signatures in the written form of bagpipe music?

4. Why does the bagpipe scale (where A is the tonic in written form, or B♭ when sounded) require a modified key signature?

5. What is the arrangement of tones and semitones when:
   a) A (or B♭) is the tonic?
   b) D (or E♭) is the tonic?

6. Which of the ancient musical modes is similar to a major scale with a diminished 7th?

7. What information regarding the pitch of a melody is generally given by its ‘final’?

8. Examine the practical piping exercises numbers 1 to 8 on pages 3.15.1 to 3.15.3 inclusive and identify their tonics when sounded on the bagpipe.

9. Why are key signatures not usually shown in notated bagpipe music?
LESSON 7 WORKSHEET (CONT’D)

WRITTEN WORK

Following familiarisation of the written notation/actual sound examples 7.1 to 8.2 on page 3.7.4, use a separate blank staff to re-write the following practical piping exercises in their actual pitch, inserting the treble clef, key signature and time signature as required:

1. From page 3.15.1 Exercise 2 – Top Hand and D doubling (March Rhythm).
   
   (This melody is in the key of B\textsuperscript{♭} major).

   \textbf{N.B} Observe that the 7\textsuperscript{th} must be diminished.

2. From page 3.15.2 exercise 3 – C, B and Low A Doublings (strathspey Rhythm).
   
   (This melody is in the key of E\textsuperscript{♭} Major).

3. From page 3.15.2 Exercise 4 – Grips and Taorluath (March Rhythm).
   
   (This exercise is in the key of C minor).
LESSON 8

Scales Part 5

Harmonic and Melody Minor Scales

The natural pattern of minor scales was developed to suit the needs of ‘minor music’ (page 3.1.2 refers), and in consequence, the Harmonic and Melodic Minor Scales evolved.

**Natural minor scale pattern**

![Natural minor scale pattern diagram](image)

**The melodic minor scale**

![Melodic minor scale diagram](image)

When played, the Melodic Minor Scale has the sixth and seventh augmented on ascending and reverts to natural pitch on descending.

**The harmonic minor scale**

![Harmonic minor scale diagram](image)

The Harmonic Minor Scale was developed to provide harmony within minor music. When played the Harmonic Minor Scale has an augmented seventh.

3.8.2
LESSON 8 WORKSHEET

ORAL WORK

1. What is the pattern of tones and semitones of the natural minor scale?

2. How does the melodic minor scale differ from the natural minor scale?

3. Between which degrees of the melodic minor scale do the semitone intervals occur?

4. How does the harmonic minor scale differ from the melodic minor scale?

5. How are the sixth and seventh degrees affected when the melodic minor scale is PLAYED?
LES SON 8 − WORKSHEET (CONT’D)

WRITTEN WORK

1. On a blank staff, place the treble clef.

   Show the A minor scale and indicate the position of the semitone intervals.

   Place an accidental which alters the A minor scale to the harmonic minor scale.

2. On a blank staff, place the treble clef.

   Show the melodic minor scale in the key of A minor as it is played when ascending and descending.
**LESSON 9**

*Intervals*

When each note of the Diatonic Scale is played either successively, or simultaneously with the tonic, intervals of different quality occur, depending on the number of semitones within the interval.

The Intervals within Major Scales are as follows:

<table>
<thead>
<tr>
<th>Interval</th>
<th>Semitones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfect 1st (or Tonic)</td>
<td>0</td>
</tr>
<tr>
<td>Major 2nd</td>
<td>2</td>
</tr>
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<td>Major 3rd</td>
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<td>Perfect 4th</td>
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<tr>
<td>Perfect 5th</td>
<td>7</td>
</tr>
<tr>
<td>Major 6th</td>
<td>9</td>
</tr>
<tr>
<td>Major 7th</td>
<td>11</td>
</tr>
<tr>
<td>Perfect 8th (or Octave)</td>
<td>12</td>
</tr>
</tbody>
</table>

The Intervals within Minor Scales are as follows:

<table>
<thead>
<tr>
<th>Interval</th>
<th>Semitones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfect 1st (or Tonic)</td>
<td>0</td>
</tr>
<tr>
<td>Major 2nd</td>
<td>2</td>
</tr>
<tr>
<td>Minor 3rd</td>
<td>3</td>
</tr>
<tr>
<td>Perfect 4th</td>
<td>5</td>
</tr>
<tr>
<td>Perfect 5th</td>
<td>7</td>
</tr>
<tr>
<td>Minor 6th</td>
<td>8</td>
</tr>
<tr>
<td>Minor 7th</td>
<td>10</td>
</tr>
<tr>
<td>Perfect 8th (or Octave)</td>
<td>12</td>
</tr>
</tbody>
</table>

The Perfect and Major 2nd Intervals are present in both major and minor scales.

3.9.2
LESSON 9

INTERVALS (CONT’D)

When the upper note of an interval is affected by an accidental, its name and quality changes.

Intervals affected by sharps

Perfect and major intervals when sharpened, become augmented intervals

1. 

Perfect 4th Augmented 4th

The perfect fourth has five semitones. When affected by a sharp, the interval is increased to six semitones to produce an augmented fourth.

2. 

Minor 6th Augmented 6th

The major sixth has nine semitones. When affected by a sharp, the interval is increased to ten semitones to produce an augmented sixth.

Minor intervals when sharpened, become major intervals.

3. 

Minor 6th Major 6th

The minor sixth has eight semitones. When affected by a sharp, the interval is increased to nine semitones to produce a major sixth.
INTERVALS (CONT’D)

Intervals affected by flats

Perfect and minor intervals when flattened, become diminished intervals.

4.

Perfect 5\textsuperscript{th}  
\begin{tikzpicture}[baseline={([yshift=-.5ex]current bounding box.center)}]
\node (f) at (0,0) {F};
\node (g) at (1,0) {G};
\end{tikzpicture}

Diminished 5th

The perfect fifth has seven semitones. When affected by a flat, the interval is decreased to six semitones to produce a diminished fifth.

5.

Minor 3\textsuperscript{rd}  
\begin{tikzpicture}[baseline={([yshift=-.5ex]current bounding box.center)}]
\node (f) at (0,0) {F};
\node (g) at (1,0) {G};
\end{tikzpicture}

Diminished 3rd

The minor third has three semitones. When affected by a flat, the interval is decreased to two semitones to produce a diminished third.

Major intervals when flattened, become minor intervals.

6.

Major 7\textsuperscript{th}  
\begin{tikzpicture}[baseline={([yshift=-.5ex]current bounding box.center)}]
\node (f) at (0,0) {F};
\node (g) at (1,0) {G};
\end{tikzpicture}

Minor 7th

The major seventh has eleven semitones. When affected by a flat, the interval is increased to ten semitones to produce a minor seventh.
LESSON 9 WORKSHEET

ORAL WORK

1. In major scales, how many semitones are contained in the following intervals:
   a) Major 3rd?  b) Major 7th  c) Perfect 4th

2. Which major interval appears in major and minor scales?

3. In minor scales, how many semitones are contained in the following intervals:
   a) Minor 3rd?  b) Minor 6th  c) Perfect 4th

4. Which two kinds of intervals are known as ‘augmented’ intervals when sharpened?

5. What do minor intervals become known as when sharpened?

6. Which two kinds of intervals are known as ‘diminished’ intervals when flattened?

7. What do major intervals become known as when flattened?

8. In major scales how many semitones are contained in the following intervals:
   a) Minor 3rd?  b) Minor 6th  c) Diminished 4th

3.9.5
LESSON 9 WORKSHEET (CONT’D)

WRITTEN WORK

1. Draw a blank staff, and using the natural major scale, show the following intervals with the note ‘middle C’ as root :-

   a) Major 3rd
   b) Augmented 7th
   c) Perfect 4th
   d) Minor 2nd
   e) Augmented 5th

2. Draw a blank staff, and using the natural minor scale, show the following intervals with the note A as root :-

   a) Major 2nd
   b) Major 7th
   c) Diminished 4th
   d) Diminished 8th
   e) Perfect 5th
LESSON 10

Inversions

When the relative position of two notes is inverted by placing one of them an octave lower or higher, the lower note becomes the upper, or the upper note becomes the lower, the new interval formed is said to be an inversion.

Upward Inversion

1. 

Perfect 5\textsuperscript{th} \hspace{1cm} \text{Perfect 4\textsuperscript{th}}

The above diagram (1) shows a perfect fifth (C to G).

Placing C above G, the inverted interval forms a perfect fourth (G to C).

It may be observed in the above, an interval of a fifth when inverted becomes a fourth. Also, the sum of the numerical values of the two intervals is nine.

Downward Inversion

2. 

Minor 3\textsuperscript{rd} \hspace{1cm} \text{Major 6\textsuperscript{th}}

The above diagram (2) shows a minor third (D to F).

Placing F below D, the inverted interval forms a major sixth (F to D).

Again it may be observed in the above, an interval of a third when inverted becomes a sixth. Also, the sum of the numerical values of the two intervals is nine.
INVERSIONS (CONT’D)

General rules for Inversion

1. Perfect intervals remain perfect intervals when inverted.

2. Major intervals become minor intervals when inverted.

3. Minor intervals become major intervals when inverted.

4. Augmented intervals become diminished intervals when inverted.

5. Diminished intervals become augmented intervals when inverted.
### Intervals and their respective inversion

#### INTERVALS AND THEIR RESPECTIVE INVERSION

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#### INTERVALS

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#### OCTAVES

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3.10.4

LESSON 10 WORKSHEET

ORAL WORK

1. Define the term ‘chord’.

2. Which term describes the lowest note of a chord?

3. Define the term ‘inversion’.

4. In which two directions may inversions be carried out?

5. Give the name of the inversions of the following types of intervals :-

   a) 2\textsuperscript{nd}
   b) 6\textsuperscript{th}
   c) Octave
   d) Major
   e) Perfect
   f) Diminished
   g) Augmented
   h) Minor 3\textsuperscript{rd}
   i) Perfect 5\textsuperscript{th}
LESSON 10 WORKSHEET (CONT'D)

WRITTEN WORK

1. On a blank staff, use the C major scale to show the following intervals:

   a) Major 6\textsuperscript{th}
   b) Unison
   c) Diminished 4th
   d) Minor 7th
   e) Major 2nd
   f) Augmented 5\textsuperscript{th}

2. On a blank staff, show the inversion of the above intervals.
Transposition

Transposition means the changing of a musical composition by raising or lowering its pitch.

The following illustrations are examples of transposition when the melody is moved:

1. Upward or downward by a full octave.

\[\text{Diagram 1.2 illustrates the melody in 1.1. transposed downward by one octave.}\]

2. From clef to clef, when interchange takes place between alto, treble or bass.

\[\text{Diagram 2.2 illustrates the melody in 2.1 transposed downward to the bass clef.}\]
3.11.2

LESSON 11

TRANPOSITION (CONT’D)

3. Upward or downward by a simple interval (i.e. less than an octave).

3.1 Diatonic interval (e.g. Major third, Diminished fourth etc).

3.1.1 In diagram 3.1.1, the melody is in the key of C major.

3.1.2 Observe that the transposed melody is in the key of E major (E being a major third above C).

3.2 By a number of semitones (i.e.) chromatically.

3.2.1 In diagram 3.2.1, the melody is in the key of G minor. In diagram 3.2.2, the melody is transposed upward by four semitones.

3.2.2 Observe that the transposed melody is in the key of B minor, (B is four semitones above G).
3.11.3

LESSON 11

TRANSPOSITION (CONT’D)

3.3 From one key to another (i.e. tonally),

3.3.1. In diagram 3.3.1, the melody is in the key of F major. In diagram 3.3.2, the melody is transposed downward into the key of D major.

3.3.2

Observe that each note has been lowered by an interval of a third (the interval from F, downward to D is a minor third).

When transposing a melody, the following procedure should be adopted, as appropriate :-

1. Identify the key of the melody to be transposed.
2. Calculate the interval from the original tonic to the new tonic.
3. Insert the new key signature (and time signature, if applicable).
4. The transposed melody must commence on the same degree of the new scale relative to the new tonic.
5. Using the same note values, grouping, barring etc., as in the original melody, write the notes in the new key signature.
6. Insert accidentals where required, remembering that an augmented note in the original melody must be raised in the transposed melody and a diminished note in the original melody lowered in the transposed melody.
7. An accidental in the original melody may change in the transposed form if affected by the new key signature (as illustrated in the following examples).
LESSON 11

TRANSPOSITION (CONT’D)

Examples…. Showing the transposition from G major to A major.

The following are theoretical examples showing the changes affecting accidentals as a result of transposition.

C Major

Transposed to E♭ Major

Observe: 1. C retains its flat

2. The note A becomes A♭ (enharmonic G). It is affected by the key sign in addition to the original flat.
LESSON 11

TRANSPOSITION (CONT’D)

C Major Transposed to B Major

6.1

\[
\begin{array}{c}
\text{C Major} \\
\text{Transposed to B Major}
\end{array}
\]

To maintain the required degree differential, a natural sign must be used to contradict the flat imposed by the key signature. In this instance, F in the C major scale to E in the B major scale. The result of this is that the pitch of the note is effectively raised as required by the original melody.

C Major Transposed to D Major

7.1

Observe:
1. D retains its sharp.
2. The note C becomes (enharmonic D).
   because it is also affected by the key signature.

C Major Transposed to E Major

8.1

To maintain the required degree differential, a natural sign must be used to contradict the sharp imposed by the key signature. In this instance, E in the C major scale to G in the E major scale. The result of this is that the pitch of the note is effectively lowered as required by original melody.

3.11.6
C Major Scale (Upward)

C# or D♭
D# or E♭
F# or G♭
G# or A♭
A# or B♭

C or B♯
D or F♭
E or E♯
F or G#
G or A#
A or C♭
B or C#

NUMBER OF SEMITONES
1 2 3 4 5 6 7 8 9 10 11 12

3.11.7
C Major Scale (Downward)
A Minor Scale (Upward)

NUMBER OF SEMITONES

1 2 3 4 5 6 7 8 9 10 11 12
A Minor Scale (Downward)

NUMBER OF SEMITONES...... 12 11 10 9 8 7 6 5 4 3 2 1
3.11.10

LESSON 11 WORKSHEET

ORAL WORK

1. Define ‘transposition’.

2. State the five methods by which transposition may be carried out.

3. Which key signature is :-
   a) A major 2\textsuperscript{nd} above C major?
   b) A minor 3\textsuperscript{rd} below C major?
   c) A minor 2\textsuperscript{nd} below B\textsuperscript{b} major?
   d) A perfect 4\textsuperscript{th} below B\textsuperscript{b} major?
   e) 4 semitones above C major?
   f) 4 semitones below A major?
   g) 2 semitones below B\textsuperscript{b} major?
   h) 3 semitones above G major?

4. Describe the manner by which accidentals may be affected by transposition.
WRITTEN WORK

1. On a blank staff show the following scales and their key signatures :-

a) C major transposed upward to E♭ Major.

b) B♭ major transposed downward to the bass clef from the treble clef.

c) G major transposed upward by a minor 3rd.

d) A major transposed downward to F major.

e) D major transposed upward by 3 semitones.

f) B major transposed downward by a major 3rd.

2. On a blank staff, rewrite the following melodies by transposing as required :-

a) Down, to the key of B♭ major.

b) Up, to the key of D major.

c) Down, to the key of C major

d) Up, to the key of C major.
The constituents of Music

Introduction

The composition of music, poetry, sculpture, painting etc., is a product of the imagination. Like other art forms, music is difficult to quantify and its ultimate worth lies with its appeal to the listener. The success, achievement or perceived ability of the artist can vary considerably.

In the field of music, composers whose general work is considered of lesser standing than others, may well be held in high esteem for a single outstanding composition.

Regardless of the complexity or simplicity of composition, music has three common elements or constituents.

These are;

Rhythm

Melody

Harmony
THE CONSTITUENTS OF MUSIC

Rhythm

Rhythm is the regular recurrence of strong and weak accents arising from the division of music into regular metrical portions.

In addition to the rhythms discussed in Structured Learning Books 1 and 2, other rhythms exist and include the following:

Polyrhythm - When three or more different rhythms are incorporated simultaneously

Cross Rhythm - When two different rhythms are incorporated simultaneously.

Hemiola - When simple triple time and compound duple time are incorporated simultaneously.

Alternating Time - Constant changing of rhythm.

Variable Time - Periodic changes of rhythm.
THE CONSTITUENTS OF MUSIC (PART 2)

Melody – Part 1

Melody is an orderly succession of single different sounds progressing horizontally, achieving a distinct musical shape.

When melody is examined, a variety of forms may be identified.

Among the types of musical forms produced by the combination of various scales are the following :-

- Diatonic Music
  - Major and minor scales.

- Chromatic (Atonal) Music
  - Chromatic and whole-tone scales

- Pentatonic Music
  - Five note scales.

- Modal Music
  - Variations of the diatonic scales.

- Microtonal Music
  - Intervals of less than a semitone. (Generally features in music typical of Eastern Culture)
3.12.4

MELODY (PART 1) (CONT’D)

Regardless of the complexity or simplicity of a melodic composition, it will be written using the following intervals:

Conjunct movement – Step by step progression.

The Mull Ceilidh

Disjunct movement – Interval progression of 3rds, 4ths etc.

The Steamboat

Combinations of the above

Bonnie Dundee
LESSON 12 (MELODY PART 1) WORKSHEET

ORAL WORK

1. State the three constituents of music

2. Explain the following terms :-
   a) Polyrhythm
   b) Cross rhythm
   c) Hemiola
   d) Alternating time
   e) Variable time

3. Define the term ‘melody’.

4. Explain the following terms
   a) Diatonic music
   b) Chromatic music
   c) Pentatonic music
   d) Modal music
   e) Microtonal music
   f) Atonal music

5. State the three types of interval progression.
LESSON 12 (MELODY PART 1) WORKSHEET

WRITTEN WORK

On a blank staff, use the following categories to show examples of melodic construction:

1. Conjunct movement.

2. Disjunct movement

3. Combination of conjunct and disjunct movement.
Melodies suitable for the bagpipe consist of a number of phrases. These phrases normally comprise of a single bar or combination of bars depending upon the construction and mood of the melody.

Melodic phrases consist of several linked components termed motifs.

A motif may be defined as the smallest identifiable component of a musical composition.

Motifs as applied to bagpipe music are often difficult to identify compared to other forms of music. For example, in orchestral music, a motif may consist of only two or four notes as in Beethoven's 5th Symphony.

A two note motif would be difficult to use as a basis for a bagpipe composition, and as a result, 'phrases', rather than motifs, are more appropriate when discussing the construction of bagpipe music. However, a phrase may consist of several motifs.
3.12.8

THE CONSTITUENTS OF MUSIC – PART 2

Melody – Part 3

The motif, or motifs within a composition are usually established in the initial phrase and thereafter varied in any of the following ways :-

Repetition

Modulation/sequence

Modification

Repartee

Repetition

In music generally, the motif may be continuously repeated by its reintroduction using a variety of instruments. Consequently, the texture of the motif changes constantly.

This is the reason why many melodies which at first seem suitable for transcribing for the bagpipe sometimes prove to be aesthetically unsatisfactory due to the limitation of the bagpipe scale. A two-parted bagpipe composition may have at least six motifs and is often more complex melodically than other musical forms.

For example, the four note motif of Beethoven’s 5th Symphony is repeated and varied using all the textural potential of the orchestra. Bagpipe music however, has little scope, for this form of repetition, therefore alternative motifs are introduced to provide melodic variety.

There are exceptions to the foregoing. These include ‘Bugle horn’, ‘The Black Bear’ and ‘Atholl Highlanders’. In practice the motifs most likely to be repeated are those contained within the second and fourth phrases which appear in each part or section of bagpipe music.

Modulation/sequence

Modulation is the changing form one key to another during the course of a musical passage.
**Modulation/sequence (CONT’D)**

**Sequence** is the repetition of motifs at different pitches and may be considered a form of transposition within the key being used. Sequence can be more effective when combined with modulation.

Examples which incorporate the foregoing may be identified within the following bagpipe compositions :-

- Balmoral Highlanders
- Crossing the Minch
- Cameronian Rant

**Modification**

**Modification** is utilised where the motif is simple in form and can re-appear becoming more complex melodically, rhythmically and technically as the piece progresses.

Particularly good examples of this in bagpipe compositions are ‘Train Journey North’, ‘The Waterhole’ and ‘The Piobroch of Donald Dhu’.

**Repartee**

**Repartee** is the term used when contrasting motifs occur within a composition.

Examples which incorporate repartee in bagpipe music are :-

- Lord Alexander Kennedy
- Corriehoillie
THE CONSTITUENTS OF MUSIC (PART 2)

Melody – Part 4

Cadences

Like punctuation in language, phrases are punctuation in music. The end of a phrase is known as a cadence. Some cadences give the effect of a less conclusive effect like the comma or semi-colon.

The common cadences are:

- Perfect
- Imperfect
- Interrupted
- Plagal

**Perfect**

The perfect cadence is the progression from dominant to tonic. It is also known as the full close due to its similarity in music to that of the full stop in text.

**Imperfect**

The imperfect cadence, or half close has the same effect as the semi-colon in text and progresses from any note to the dominant.

**Interrupted**

The interrupted cadence serves the same purpose as a comma in text and progresses from dominant to sub-mediant.

**Plagal**

The plagal cadence (amen cadence) has an effect similar to that of the perfect cadence and progresses from subdominant to tonic.

It is seldom used in modern music.
When a cadence ends on a strong beat it is called masculine; when it ends on a weak beat it is called feminine.

Generally the succession of cadences is usually Interrupted, Imperfect, Interrupted and Perfect.

Cadences often lead to changes in tonality. (The resulting change from key to key is termed modulation). The new key may not be indicated by a change in key signature, but becomes apparent by the inclusion of accidentals added as the composition develops.

Analysis of bagpipe music reveals that the cadences described above are usually inappropriate.

In bagpipe music, phrases in this context combine to form musical sentences with each sentence forming a part (or section). Each part consists of four phrases, either one or two bars long. Several sentences or parts when combined to produce a paragraph, form a complete work or tune. The phrases contained within the parts usually take the form of Interrupted, Imperfect, Interrupted and Perfect cadences. This is the normal pattern for most pipe band compositions.

e.g. The Glendaruel Highlanders
ORAL WORK

1. What is the term given to the linked components of a musical phrase?

2. Explain the term ‘motif’.

3. Name the four methods by which a motif may be varied.

4. How are ‘modulation’ and ‘sequence’ related?

5. Name the four types of cadences and explain their function.

6. How is a cadence described when it ends on the following:
   a) A weak beat
   b) A strong beat

7. In bagpipe music, what is the usual succession of cadences?
In the following exercises, pipers and drummers should provide musical scores of an advanced standard.

On a blank staff, write 8 bars of music showing the phrases, the positions and the names of the cadences for each of the following time signatures.

a) \(\frac{6}{8}\)

b) Simple triple time

c) Compound quadruple

d) \(\frac{2}{2}\)
Harmony

Harmony is the simultaneous combination of two or more sounds progressing vertically. Its importance and complexity are such that it may be treated as a separate subject in its own right.

Monophonic music is the sounding of a melody by a single voice or a number of voices in unison.

Homophonic music is the sounding of a melody accompanied by one or more harmonising voices. Examples of this are Organum, known as two part harmony, or the seconds played in piping. In Organum, the first part (the melody or principal voice) is termed the vox-principalis and the second part (the harmony or organ voice) is termed the vox-organalis.

Music evolved from two part to three part harmony by combining the root, third and fifth intervals. This is known as the triad or common chord.

The triad consists of seven semitones in two groups. The semitones from root to third determine the major or minor interval and the semitones third to fifth which, if reduced or increased by the use of accidentals, will make the triad diminished or augmented.
The diagram below illustrates the diatonic scale of C major in which each note of the scale is used as the root of the triads shown.

Each triad is annotated as major or minor.

The need for additional types of harmonies resulted in a gradual change from simply chordal accompaniment to the highly complex use of an additional melody as harmony. This is called counterpoint, from the Latin ‘punctus contra punctus’, meaning ‘point against point’.

**Counterpoint** is where different melodies of definite shape and character are combined to form a melody and harmonic musical weave.

Counterpoint appears in its most basic form in the Round or canon where each voice copies the last, entering at a prearranged position.

A popular form of counterpoint known as **palindromic counterpoint** evolved during the 16th century. Palindromic counterpoint is characterised by one voice sounding the melody from its beginning and a different voice sounding the same melody in reverse.

J.S. Bach was one of the composers who brought counterpoint to its peak. Bach and some of his contemporaries were said to think contrapuntally. Their expertise was such that when a melody was written, its contrapuntal counterpart evolved simultaneously.

The most complex form of all contrapuntal music is the Fugue. In the fugue, contrapuntal melodies follow each other using a variety of pitches and tempi.

Towards the end of the 17th century, harmony became freer in style with the use of diatonic harmony. Harmonic development continued into the late 18th Century and at this time chromaticism was introduced. As a result, chromatic harmony in diatonic music created new and exciting effects.

Chromaticism became very important in the Romantic and Impressionist schools of musical thought during the 19th Century. Eventually atonal music emerged at the beginning of the 20th Century and increased harmonic potential. Chief among these impressionists was the French Composer Claude Debussy who used the whole tone scale as a basis to create new textures in harmony.
Harmonic progression consists of the following chord movements:

**Similar motion** - In the same direction.

**Contrary motion** - In opposite directions.

**Oblique motion** - one part of a chord moves while the other part remains stationary.
ORAL WORK

1. Define the term ‘Harmony’.

2. State why ‘monophonic music’ is applicable to pipe bands.

3. State when ‘homophonic music’ applies to pipe bands.

4. In two part harmony, what is the Latin term used to describe:
   a) The melody
   b) The harmony

5. Define the term ‘triad’ and give its other name.

6. Explain how the quality of a triad is altered when:
   a) The 3\textsuperscript{rd} is affected by a sharp.
   b) The 3\textsuperscript{rd} is affected by a flat.
   c) The 5\textsuperscript{th} is affected by a sharp.
   d) The 5\textsuperscript{th} is affected by a flat.

7. Define the term ‘counterpoint’.

8. In harmony, what is meant by the following terms when describing chord movement:
   a) Similar motion?
   b) Contrary motion?
   c) Oblique motion?
LESSON 12 (HARMONIY) WORKSHEET (CONT’D)

WRITTEN WORK

1. On a blank staff, using semibreves, show the scale of B♯ major.
   
a) Taking each note of the scale in turn as the root, show a triad on every degree of the scale.

b) State whether each triad is major or minor.

c) Using an accidental on the appropriate note, change the minor triads to major triads.

d) Show one diminished triad and one augmented triad using an accidental on the appropriate note.
Musical Form (Part 1)

Binary and Ternary

Introduction

The analysis of a melody in terms of its construction can be simplified if the phrases or sections are given the letters A and B.

Binary Form

Binary Form is the term used to describe a melody which is based on two phrases, identified as A and B.

In a composition, the phrases can appear in a variety of compositions, for example, ABAB, ABBA, AABA etc.

Ternary Form

Ternary Form is the term used to describe a melody which is based on three phrases identified as A-B-A modified.

Where phrases are modified, or a number is allocated to each letter to indicate that modification has taken place, the original phrase A would be shown as A1 and the modified version as A2, and so on. For example, ternary form may be shown as A1 B A2.

Bagpipe Music

When applied to bagpipe music generally, this system of musical analysis requires to be extended in order that the phrase construction distinctive of bagpipe music, may be adequately identified, A, B and C.
Example 1

The March, ‘The Highland Wedding’ ..... A B A C

Example 2

The March, ‘Leaving Port Askaig’..... A1 A2 B A3
LESSON 13 (MUSIC FORM – PART 1) WORKSHEET

ORAL WORK

1. How are musical phrases described for the purposes of analysis?

2. Explain the following :-
   a) Binary Form
   b) Ternary Form.

3. How is the system of phrase analysis extended in its application to bagpipe music?

4. Explain how a modified phrase is described in musical analysis?
LESSON 13 (MUSIC FORM – PART 1) WORKSHEET

WRITTEN WORK

Analyse the following popular bagpipe compositions, and describe their phrased construction in musical form.

1. The Haughs of Cromdale (\(\frac{2}{4}\) March)
2. Auld Adam (\(\frac{6}{8}\) March)
3. Donald Cameron (\(\frac{2}{4}\) March)
4. Arniston Castle (Strathspey)
5. John MacKechnie (Reel)
6. Crossing the Minch (Hornpipe)
7. The Rakes of Kildare (Jig)
**Musical Form (Part 2)**

**Further Classification**

**Introduction**

Musical form is also concerned with the structure or plan of a musical composition and is used to determine its classification.

**Suite**

This takes the form of a collection of short pieces of music, either dances or songs, or can be an abbreviated version of a much larger work.

**Variations**

This consists of a theme which is altered as the piece progresses melodically or rhythmically, or both. Most music is of this form.

**Sonata**

This is usually presented by a soloist, and has a traditional form consisting of three or four sections called ‘movements’, containing *introduction, exposition, development and recapitulation.*

**Symphony**

This is a composition of several movements scored as a ‘sonata’. Early symphonies had four or sometimes five movements of varying tempi.

The first movement is usually a slow dramatic introduction, which proceeds to a moderate tempo.

The second movement is generally slow, and the third movement is often a dance in triple time. The last movement is normally fast and exciting.

**Overture**

This is a musical composition designed to introduce a theatrical production which sets the scene for the audience. Some overtures were written purely for concert performance.
FURTHER CLASSIFICATION (CONT’D)

Concerto

This is a musical composition for one or more solo instruments with orchestra, modelled on
the design of a sonata.

Each movement usually includes a Cadenza in which the soloist could be expected to
improvise a virtuoso passage based on the themes provided.

Modern concertos usually have the cadenza written by the composer.

Canon

These are polyphonic compositions, in which one section of the music is imitated by one or
more, other sections. When the imitation is exact in every detail the canon is said to be
‘strict’. If it is modified by the introduction or omission of accidentals it is said to be ‘free’.

It is common for such compositions to end with a short Coda (i.e. a short concluding passage
in which strict imitation is abandoned in order to construct a convincing cadence).

Fugue

This is a composition in contrapuntal style in which a certain subject or theme is imitated.
When the imitation is exact in every detail it is said to be ‘real fugue’. If it is modified by
changing intervals it is said to be ‘total fugue’.

Rondo

This a composition in which the theme appears at least three times, interspersed by material
of a contrasting nature.
LESSON 13 (Musical Form - Part 2) WORKSHEET

WRITTEN WORK

Explain the following musical terms :-

1. Suite
2. Variations
3. Sonata
4. Symphony
5. Overture
6. Concerto
7. Cadenza
8. Canon
9. Fugue
10. Rondo

N.B: There is no ‘oral’ worksheet.
3.14.1

LESSON 14

Ensemble

*Ensemble* is the coming together of component parts to establish a complete entity.

A ‘good ensemble’ is the combination of well matched and balanced components that successfully produce a pleasing (harmonious) effect.

Pipe band ensemble should be considered as following :-

- **Introduction** (popularly referred to as the ‘attack’).
- **Intonation**
- **Integration**
- **Interpretation**

**Introduction**

The introduction of a pipe band performance consists of four elements :-

- **Tempo** (Speed to be played)
- **Attack** (‘Attacca’ – Sound quality at the instant of its production)
- **Intonation** (Being in tune)
- **Unison** (Integration within and between each section).

The pipe major, when giving the ‘words of command’ should do so in a manner which indicates the desired tempo. (Book 2, Page 2.22.2 refers).

The introduction begins with two three pace rolls provided by the corps of drums, to establish the tempo previously indicated for the opening melody. The attack should be precise. The snare drum rolls should commence and finish in unison. The texture of the roll movements should be smooth, well sustained, and of uniform pulsation throughout, while the bass section drummers ‘keep time’ with single beats, punctuated with appropriate flourishing.

The pipes must also have a precise attack. On the fifth beat of the introduction, all drones should be sounded in unison, and on the seventh beat, the E should be fully intoned.
ENSEMBLE (CONT'D)

It is essential for the precision of the introduction that all instruments are sounded in unison as one grand instrument.
Pipe Band Introduction – Competition Performance

Essential sequence of events

- Total Concentration
- No instrument noises
- Words of Command (denoting required tempo)

**DRUMS**
- Introductory Rolls
- Commence and Finish in unison
- Smooth Texture, Well Sustained
- Establish Tempo
- Bass Section to Keep Time
- Sustain the initial tempo into opening Melody

**PIPES**
- Silence on First Roll
- Drones sounded in unison on Fifth Beat (Second Roll)
- E's fully sounded in unison on the seventh beat.
- Maintain established tempo
- Sustain the initial tempo into the opening melody

Commencing Opening Melody
3.14.4

HINTS ON INTONATION AND SOUND QUALITY

**Drums**

Initial tuning in unison, bright with good snare response.

Endeavour to produce a sound which complements the pipes

All drummers use the same type and shape of stick.

All drummers play on the centre of the drum.

Endeavour to play ‘off’ and not ‘into’ the drum.

All drummers maintain control of volume/dynamics, especially with regard to the overall band balance.

Bass section tuned as detailed in Structured Learning Book 2.

**Pipes**

Initial tuning in unison, rich sounding, with drones in full harmony, balanced to a rich, sonorous sounding well intoned chanter.

Give attention to the intonation and the balance of all notes in the register of the chanter

Musical quality, pitch and volume must be achieved and sustained.

It is essential to ensure that the drones produce their maximum resonance and harmonics.

Good intonation and sound quality can only be achieved on a well maintained and correctly controlled instrument, *e.g.*, consistent air pressure.

**N.B.** It should be noted that intonation and sound quality may be assisted by using instruments of similar specification.
3.14.5

HINTS ON PIPE BAND INTEGRATION AND INTERPRETATION

PIPES AND DRUMS

Play compositions within the ability of the individual players

Arrangements well considered in general by Pipe Major and leading drumming with regards to.... Tempo, Mood, Changes in Time Signatures etc.

N.B. 1 Simple compositions played well can often be more musically satisfying than technically complex compositions played not so well.

N.B 2 The composition of snare, tenor and bass scores should be considered as a single entity from outset to produce entity from outset to produce a good rhythmical accompaniment to the melodies

Drums

Good execution

Good expression/phrasing with fluent technique

Well defined rhythmically

Good accompaniment

Good dynamic control

Pipes

Good execution

Good expression/phrasing with fluent technique

Well defined rhythmically

Good accompaniment

Tasteful use of simple harmony in melody

Special consideration should be given to good unison at start and finish of performances and at each ‘break’ (e.g. changes in tempo and time signature etc.).

It is essential that during the performance there is unison within and between each section of the band (i.e. total concentration by the individuals on their own and each others’ contribution).
ORAL WORK

1. Define the term ‘Ensemble’.

2. Name the four aspects of pipe band ensemble.

3. Briefly describe the following terms :-
   a) Introduction
   b) Attack
   c) Intonation/Sound quality
   d) Integration

4. Name the three elements of the introduction to a pipe band contest performance.
WRITTEN WORK

Write an essay on pipe band ensemble giving full consideration to the following aspects:

1. Introduction
2. Intonation/Sound quality
3. Integration
4. Musical Interpretation
Embellishments and exercises

The exercises which follow constitute an overall progression, leading naturally from the contents of Book 2.

As with the previous two books, a clear understanding of the movements required to execute each embellishment is essential in order that the complete performance is clean and precise.

Careful and diligent practice of the exercises should help improve individual technique.

Exercise No.1 - G, D and E Gracenotes (Reel Rhythm)

Exercise No. 2 - Top Hand and D doublings (March Rhythm)
Exercise No. 3 - C, B, and Low A Doublings (Strathspey Rhythm)

Exercise No. 4 - Grips and Taorluath (March Rhythm)

Exercise No. 5 - Hand Changing (March Rhythm)

Exercise No. 6 - Tachums (Strathspey Rhythm)
Piobaireachd

The ‘Introduction to Piobaireachd’, Structural Learning Book 2, stated that Ceol Mor, (Great Music), more commonly known as Piobaireachd (piping), dates from the 16th Century and is the classical music of the bagpipe.

The introduction also suggested that mastering the styles and techniques, and, the acquisition of the art of Piobaireachd playing, requires many years of study and application.

It is the object of this introduction to familiarise the student with some of the terms and expressions used in connection with the theory and practice of this musical form. Fingering and other exercises are presented together with a Piobaireachd score, which incorporates typical features and characteristics.

Every Piobaireachd commences with a presentation of its own clearly identified theme. This presentation, or statement, is called the Urlar or Ground and is probably the only characteristic common to all Piobaireachd. Any other attempt to generalise, or categorise in terms of content, style or construction requires considerable qualification.

As stated above, all Piobaireachd begin with an Urlar. This statement of the theme is followed by what are termed ‘variations’. These consist of notes selected from the theme, embellished and/or coupled with other appropriately embellished notes to produce a distinct effect. However, in some tunes, the first variation is often a restatement of the theme with modifications, which generally follow the established melody line of the Urlar theme.

It can be shown that the number and type of variations is not constant thus the variations actually incorporated depend solely on the tune being considered. In addition to this the complete range of variations available is not included in all tunes.

A simple example of a Piobaireachd could contain the following variations based on the Urlar :- Siubhal, (phonetically – shoo al). this variation comprises of notes, selected from the theme, coupled with single notes of either higher or lower pitch. Dithis (Jee esh). In this, the theme notes are sounded before and alternate with Low A, or sometimes with Low G.
3.15.5

PIOBAIREACHD (CONT‘D)

In many tunes, the Siubhal, and other subsequent variations, can exist in two forms, i.e. the singling and doubling. When a Dithis doubling is included, the theme note is repeated with the Low A or Low G being discarded.

It may be observed, from a Piobaireachd score, that the Siubhal and Dithis are arranged so that the first of each pair of notes requires to be sounded longer than the other.

Leumluath (Grip) – when included the theme note is followed by an embellishment consisting of Low G, D and Low G Gracenotes, finishing on E.

Taorluath – the Taorluath follows the theme note and consists of four Gracenotes Low G, D, Low G and E, played in quick succession and finishing on Low A.

Crunluath – As in the Taorluath, the Crunluath follows the theme note, this time finishing on E. It consists of a group of seven Gracenotes played in quick succession. The Gracenotes are Low G, D, Low G, E, Low A, F and Low A. Observe that the Crunluath incorporates a Taorluath with Low A, f and Low A added.

Piobaireachd construction :-

Examination of the construction of Piobaireachd music reveals that broad classification does exist. The classes, or types, are :- Primary, Secondary, Tertiary A and B and Irregular.

It should be observed that the classes indicate only the particular form or method of construction of a tune and in no way attempt to establish a hierarchy in terms of degree of difficulty or worth.

Consider the construction of a Primary Piobaireachd. When this is examined it may be observed that it consists of three ‘lines’ of music. Lines one and two are of equal length, consisting of six bars of music, while the third line contains four bars only. Each line is played once. These features apply to the Urlar and all of its subsequent variations.
Further examination reveals that the lines consist of different combinations of two musical phrases, each containing two bars. Representing the phrases by the letters A and B, permits the three lines to be represented by:

\[
\begin{align*}
A & \quad A & \quad B \\
A & \quad B & \quad B \\
A & \quad B & .
\end{align*}
\]

The above pattern is appropriate provided that slight modification of the A and B phrases are acceptable. The above construction typifies 'Primary Form' Piobaireachd.

**Introduction to Piobaireachd Exercises**

The exercises contained in this book follow the general principles of Piobaireachd notation and playing.

It is essential that students of Piobaireachd be aware of the wide diversity of style and technique in such music and therefore they must never make assumptions about what the music expects from them.

Each Piobaireachd, and each variation of each tune has to be closely examined to determine how this or that movement should be played.

**e.g.** The Taorluath from low G is normally played as follows:

\[
\text{\includegraphics[width=0.5\textwidth]{taorluath.png}}
\]

However in some Piobaireachd the movement becomes:

\[
\text{\includegraphics[width=0.5\textwidth]{taorluath_alternative.png}}
\]

(See also the \(\frac{2}{4}\) march ‘The Duke of Roxburghs farewell to Blackmount Forest’)}
INTRODUCTION TO PIOBAIREACHD EXERCISES (CONT’D)

The ‘Cadenced Birl’ is occasionally re-defined as an ‘echo beat’ on Low A.

Some tunes require the embellishments, especially those contained in the ‘groundwork’ or ‘urlar’ (the theme the Piobaireachd is created around) to be played almost as theme notes rather than simply melodic adornment.

The exercises, as they appear in this book, are in convenient order for practice and not in the traditional sequence of Piobaireachd.
Exercise No. 9 - Scale with Taorluath

Observe that the value of the finishing note following the Taorluath movement is short in the style of Piobaireachd variations called the Taorluath singling and Taorluath doubling.

As in many other Piobaireachd manuscripts, word and note abbreviations are used.

Traditionally when the note High G is sounded, as a theme note, the F finger remains on the chanter.

![Sheet Music for Exercise No. 9](image)

Exercise No. 10 - Taorluath Doubling

First line, phrase A (i.e. Bars 1 & 2) is repeated before playing phrase B (i.e. bars 3 & 4).

This maintains the musical form AAB which identifies this as a 'Primary Piobaireachd' previously established in the first line of the Urlar.

![Sheet Music for Exercise No. 10](image)
Exercise No. 11 - Scale with Crunluath

As with the Taorluath exercises, observe the value of the finishing note following the Crunluath movement.

Played:

\[ \text{Diagram of the played exercise} \]

Written:

\[ \text{Diagram of the written exercise} \]

Exercise No. 12 - Crunluath Doubling

Observe that the primary form is maintained.

\[ \text{Diagram of the exercise} \]

**Tempo:** $= 60$ Approx

- 139
Exercise No. 13 - Embellishments used in Siubhal and Dithis
These comprise of High G and E Gracenotes.

Siubhal and Dithis

Dithis Doubling

Siubhal Doubling

Dithis

Twice

Approx
Exercise No. 14 - Cadences

Cadences may be considered to be musical punctuation marks of varying quality. These are used to mark the end of a phrase.

Generally when a cadence occurs in any phrase before the end of a line, it forms an **imperfect** cadence; also when a cadence occurs at the end of a line, a **perfect** cadence is formed.

Cadences occur most often in the Urlar, and the ‘singling’ of the theme and variations.

Cadences begin on E, followed by an ‘open’ D gracenote to C, or B or Low A.

![Written and Played Cadence Exercises](image)

Cadence Exercises on C

Cadence Exercises on B

Cadenced Birl
Exercise No. 15 - The E Throw

In executing the E throw, an E Gracenote on Low A (only the E finger moves) followed by an F Gracenote (only the F finger moves). This is followed by the finishing note E.

E Throw Development

From Low A

![Musical notation]

From B, C or D e.g. on C

![Musical notation]

On E

![Musical notation]

On F, G or High A. e.g High G

![Musical notation]

E Throw on the Scale

Played

![Musical notation]

Written

![Musical notation]

Exercise No. 16 - The ‘Echo Beat’

A succession of two strikes on a theme note, the second of which has more emphasis than the first.

Each echo beat has to be carefully examined as their construction and technical requirements vary according to the pitch of the theme note.

![Musical notation]
Exercise No. 17 - The F Throw

This is a quick flowing movement, the basis of which is the note E. F and G are sounded on E finishing on the theme note F.

The F, G and E’s are all Gracenotes.

F throw development

From Low A, B, C, D or E. e.g. From D

On F

From High G or A. e.g High A

F throw on the Scale
3.15.14

PIOBAIREACHD

CEOL NA H-ALBA

(Music of Scotland)  J. Wark 1991

Ground or Urlar

1st Variation  Siubhal
3.15.16

4th Variation, Taorluath Doubling

6th Variation, Crunluath Doubling

Abbreviations used

Written

Played
THE PIPE BAND SNARE DRUM

LESSON 16

The following rudiments and exercises should only be attempted when complete proficiency has been attained in playing all of the contents of Books 1 and 2.

In order that good stick technique may be developed to assist the pupil in playing smoothly and fluently at all times, it is essential that rudiments and exercises are practiced in a manner that will help ensure this objective.

It will therefore assist matters greatly after successfully playing a particular rudiment or exercise, it is then practiced again, commencing with the opposite hand.
FOUR STROKE ROLL DEVELOPMENT

Exercise No.1

(Continued from Book 2 Page 2.20.12)

Below are further variations of hand changes and accents of the four stroke roll.

CUT AND DOT

1. Primary Strokes….. accent on first and second note of triplet.

2. Open Movements …. Sub-division of last note of triplet.

3. Closed, Pulsed or ‘Buzzed’ movements. This produces a tap, tap and buzz.

4. Adding the slur.

5. Abbreviated as written.
FOUR STROKE ROLL

Exercise No. 2

Exercises incorporating dot and cut, and cut and dot movements in varying combinations.

1.

2.

3.

4.
THE SIX STROKE ROLL

Exercise No. 3

The movements required for the development of the six stroke roll are shown below.

Four distinct sounds are heard when the movements are practiced slowly, but, as the tempo increases, there is the impression of two sounds only.

Once the exercise has been mastered commencing on one hand, repeat the exercise commencing on the opposite hand.

1. Primary Strokes….. accent on first and fourth notes.

2. Open Movements …. Sub-division of second and third notes within each group.

3. Closed, Pulsed or ‘Buzzed’ movements. This produces a tap, buzz, buzz and tap.

4. Adding the slur

5. Abbreviated as written.
THE EIGHT STROKE ROLL

Exercise No. 4

The primary movement of the eight stroke roll is based on a quintuplet (5 equal notes played in the time of 4 notes of the same value).

These rolls are played from hand to hand and must be practiced slowly at first, gradually increasing the tempo.

1. Primary Strokes….. accent on first and fifth notes.

2. Open Movements …. Sub-division of second, third and fourth notes within each group

3. Closed, Pulsed or ‘Buzzed’ movements. This produces a tap, buzz, buzz, buzz and tap.

4. Adding the slur

5. Abbreviated as written.
THE TEN STROKE ROLL

Exercise No. 5

The ten stroke roll is based on a sextuplet (6 equal notes played in the time of 4 notes of the same value).

As with the six stroke roll, once the exercise has been mastered commencing on one hand, repeat the exercise by commencing on the opposite hand.

1. Primary Strokes..... accent on first and sixth notes.

2. Open Movements .... Sub-division of second, third, fourth and fifth notes within each group

3. Closed, Pulsed or ‘Buzzed’ movements. This produces a tap, buzz, buzz, buzz, buzz and tap.

4. Adding the slur

5. Abbreviated as written.
ROLLS OF VARYING LENGTHS INCORPORATING CONTINUOUS ACCENTUATION
Exercise No. 6

1. \[
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\]

2. \[
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\\end{array}
\]

3. \[
\begin{array}{c}
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\text{\textsf{\textit{\textbullet}}} \\
\text{\textsf{\textit{\textbullet}}} \\
\\end{array}
\]

4. \[
\begin{array}{c}
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\text{\textsf{\textit{\textbullet}}} \\
\text{\textsf{\textit{\textbullet}}} \\
\text{\textsf{\textit{\textbullet}}} \\
\\end{array}
\]

5. \[
\begin{array}{c}
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\\end{array}
\]

6. \[
\begin{array}{c}
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\\end{array}
\]

7. \[
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\\end{array}
\]

8. \[
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\text{\textsf{\textit{\textbullet}}} \\
\\end{array}
\]

9. \[
\begin{array}{c}
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\text{\textsf{\textit{\textbullet}}} \\
\text{\textsf{\textit{\textbullet}}} \\
\\end{array}
\]
WALTZ RHYTHM

Exercise No. 7

Simple Triple Time.

1.

2.

3.

4.
MARCH RHYTHM

Exercise No. 8

Simple Quadruple Time.

1.

2.

3.

4.
MARCH RHYTHM

Exercise No. 9

Compound Quadruple Time

1.

2.
The importance of these exercises lies in the varying positions of the accents. Particular attention should be paid to the different hand movements in Exercises 6, 7 and 8. Although written in compound time, the rhythm is still in triple form.
TRIPLET DEVELOPMENT 1

Exercise No. 11

1. Accent on first note.

2. Flam on first note.

3. Drag on first note

4. Sub-division of first note.

5. Sub-division with flam.

6. Sub-division with drag.
TRIPLET DEVELOPMENT 2

Exercise No. 1

1. Accent on third note.

2. Flam on third note.

3. Drag on third note

4. Sub-division of third note.

5. Sub-division with flam.

6. Sub-division with drag.
TRIPLET DEVELOPMENT 3

Exercise No. 13

1. Accent on second note.

2. Flam on second note.

3. Drag on second note

4. Sub-division of second note.

5. Sub-division with flam.

6. Sub-division with drag.
TRIPLET DEVELOPMENT 4

Exercise No. 14

1.

2.

3.

4.

5.
TRIPLET DEVELOPMENT 5

Exercise No. 15

1.

2.

3.

4.

5.
TRIPLET DEVELOPMENT 6

Exercise No. 16

1.

2.

3.
TRIPLET DEVELOPMENT 7

Exercise No. 17

1.

2.

3.
SUB-DIVISION OF THE TRIPLET

Exercise No. 18

These exercises are purposely written in Simple time as the Triplet Sign seems to give a quicker conception of the rhythmic recurrence. They could equally have been written in Compound Time without the Triplet Sign to produce exactly the same effect.

It should be noted that the last two bars in Number 7 illustrate the natural development of the Four Stroke Roll as in $\frac{2}{4}$ time.

1.

2.
3.16.20

SUB-DIVISION OF THE TRIPLET (CONT'D)

Exercise No. 18

4.

5.

6.

7.
The exercises below are a further development of the single stroke exercises in Books 1 and 2. These exercises should be practiced slowly at first to ensure correct sticking and execution.

1. 

2. 

3. 

4. 

5. 

6. 

7. 

8. 

(Continued from Book 2, Page 2.20.9)
SINGLE STROKE DEVELOPMENT 2

Exercise No. 20

Compound Time

1.

2.

3.
SINGLE STROKE DEVELOPMENT 3

Exercise No. 21

Compound Time

1.

2.

3.
PARADIDDLE DEVELOPMENT

Exercise No. 22

The following exercises incorporate the Paradiddle Fingering in semiquaver and demisemiquaver notes and therefore much diligent practise is required to gain the stick control necessary to produce a smooth rhythm.

1.  

2.  

3.  

4.  

- 170
STICK CONTROL DEVELOPMENT

Exercise No. 23

The following exercises incorporate single strokes and Paradiddle fingering in demi-semiquaver and semiquaver notes.

Much diligent practice is required to gain the stick control necessary to produce a smooth rhythm.

1.

2.

3.

4.
MONOTONE EXERCISES IN VARIOUS TIME SIGNATURES

Exercise No. 24

1.  

2.  

3.  

4.  

5.  

6.
LESSON 16

INSTRUMENT TUNING

*The Bagpipe*

Good intonation and pitch stability are of particular importance in ‘corps’ playing. This is extremely difficult to achieve in a performance due to a variety of factors.

Viz a viz :-

**Instrument Condition**

**Reed Quality**

**Atmospheric Conditions**

**Performance Conditions**

**Individual Ability etc.**

**Instrument Condition**

A good instrument in the hands of a skilled musician will produce a good musical effect, and every performer should strive to achieve that objective.

The Great Highland Bagpipe is an awkward instrument to play and therefore every possible barrier to good performance must be removed. This is achieved by good maintenance and experience.

The bag must be tailored to suit the physical stature of the performer *e.g.* a child should be given an instrument which has a small bag and a short blow stick; the drone stocks should be appropriately situated.

The bag must be frequently checked for air loss, and signs of deterioration, along with the efficiency and condition of the Blowstick valve. The bag cover must fit loosely. The drones must be secure in the stocks, and the tuning slides properly tightened to prevent unwanted movement. Drone upper sections may suddenly drop when tuning. This is caused by changes in the internal dimensions and may be rectified by the manufacturer.

The drone bores must be kept dry and clean to avoid damage to reeds and ensure good sound quality.

The drones should have approximately 8” of cord between them. This will aid appearance, tuning and sound quality.
THE BAGPIPE (CONT’D)

INSTRUMENT CONDITION (CONT’D)

In older instruments, the drones may be found to tune with the upper joints rather low on the tuning pin than desired. This may be altered by having the reed seats depend or by replacing the existing bottom joints with those of a narrower bore. These, or other measures can only be taken depending on the difficulties presented by the instrument.

In new instruments, made from wood, changes may occur subject to the elements as the wood seasons.

A new wood chanter may take months to develop its musical potential, as the wood seasons through use.

The upper register notes may become ‘thin’ in sound quality and sharp in pitch. The likely cause of this is that the critical dimensions of the throat of the chanter have altered. The chanter should be returned to the manufacturer to be examined and, if necessary, altered to the correct dimensions.

Reed Quality

A robust chanter reed will produce stability and durability of pitch, volume and intonation.

A robust reed will not produce the ‘desired’ pitch initially, and this should be borne in mind when selecting a new chanter reed. Through experience, the performer will learn whether a new reed is too flat or sharp to eventually provide the desired pitch.

A reed which is at the desired pitch when tested in unlikely to maintain that pitch, eventually becoming too sharp.

Due to the variety of chanters and chanter reeds available, only a few general remarks can be made regarding manipulation. The performer must learn by experience how the preferred make of reed may be adjusted.

A new reed must vibrate well. A ‘tight’ reed will be difficult to blow evenly, and will produce sharpness and poor quality in the upper register.
THE BAGPIPE (CONT’D)

REED QUALITY (CONT’D)

Tightness may be overcome temporarily by moistening the tips of the reed blades, or more permanently, by lightly sanding the soundbox of the reed.

A reed which vibrates freely, may be brought to the desired pitch by providing direct heat. The blades of the reed may be held between the thumb and forefinger for a brief period. This procedure may be applied when the performer is kept waiting between final tuning and performing.

The strength (and pitch) of the reed may be altered by compressing the reed, above the bridle, using the thumb and forefinger. A robust reed will gradually regain its original strength and pitch.
THE BAGPIPE (CONT’D)

REED QUALITY (CONT’D)

This process should be repeated until the reed has reached the desired strength and pitch, and retains it.

The performer must learn from experience how each reed has developed. No two reeds, even of the same make, will behave in exactly the same manner, therefore previous experiences with reeds must be considered when nurturing a new reed.

Having selected a robust chanter reed, the drone reeds should not require adjustment to accommodate the strength and pitch of the new reed as the chanter reed, through manipulation, will eventually settle with the drone reeds.

Drone reeds present similar challenges in that they must also be nurtured.

The cane must be mature so that it will resist moisture and avoid softening. The mouth of the reed should not change shape when compressed by hand.

The reed must vibrate freely. A common fault in new drone reeds is that the tongue or blade has not been cut cleanly. A sliver of wood the thickness of a hair is enough to prevent the blade from vibrating.

The strength of the drone reed may be adjusted by :

1. Gently flexing the blade open.
3.17.5

THE BAGPIPE (CONT'D)

REED QUALITY (CONT'D)

2. Placing a hair under the blade, close to the bridle.

New drone reeds should be at the desired pitch when selected. This is achieved by testing them in the instrument in conjunction with reeds already at the desired pitch.

Atmospheric conditions

The balance of temperature and moisture within the bag is also affected by changes in the atmosphere, which in consequence upsets the stability and durability of all reeds.

The nature of the bag itself must be suitable for the foreseen atmosphere in which it is to be used, for example a hide bag from Australia played in Scotland is likely to produce excess moisture.

Varying climatic conditions produce varying effects, and these are not always expected. For example, bright sunshine may result in flatness in the upper register, and the reverse may occur in dry, cold weather.

Cold, wet weather may cause dull sounding lower register notes. All reeds must be frequently checked for excessive moisture. The instrument and reeds must be thoroughly dried out after such conditions. A natural bag which has been soaked by rainfall should be allowed to dry at its own pace and then seasoned to restore the correct balance of moisture.

Bright sunshine may cause drone stoppage and unstable chanter reeds. During hot dry weather, the bag must be kept in good condition to ensure that the balance of moisture is maintained. Chanter reeds may develop sharp middle and upper register notes; and squealing or skirling in 'weaker' reeds.

It is worth remembering that the bag may feel moist enough after being played in hot dry weather, but the bag is likely to be dry the following day.
THE BAGPIPE (CONT’D)

ATMOSPHERIC CONDITIONS (CONT’D)

A natural bag which has become porous (i.e. moisture seeps through the open pores of the skin) must be replaced as its moisture content will have a long term adverse effect on all reeds.

In inclement weather, the optimum balance of moisture and temperature of the instrument must be maintained.

Performance conditions

Tuning an instrument for a good performance is a matter of judgement and experience. For example to spend considerable time warming and tuning an instrument for a short performance may be a waste of effort if the players are kept waiting between tuning and playing (this is a common occurrence at concerts, staged productions etc.).

A knowledge of the performance requirements, and the appropriate tuning to meet those requirements is essential to make the event enjoyable for all.

Individual ability

Each musician must know both personal ability and instrument characteristics. Through practise and experience the musician should be able to predict the time taken for the instrument to come to pitch.

Individuals must also listen to the pitch produced by the corps and endeavour to be in tune.