

LET'S PLAY THE PIPE ORGAN

Study Notes

by

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If you can play the piano reasonably fluently and you have just been asked if you would play the pipe organ in your church for the next few Sundays, then these Study Notes were written especially for you. Whilst these notes refer specifically to the pipe organ, they would also be mostly applicable to electronic organs having a minimum of 2 octaves of pedals. Smaller electronic instruments need special consideration, although some general principles will still apply.

1.0 Visual Differences between the Piano and the Organ

Let us imagine that you are seated at the organ console. What do you see?

- a) Probably one, two or more keyboards of about five octaves (61 notes).
- b) A pedalboard of 30 or 32 notes.
- c) In front of the pedalboard there will be an expression or 'Swell' pedal.
- d) Above the top keyboard or at either side of the keyboards, there will be a number of 'Stop' tabs or 'Drawstop' knobs with names and numbers on them.
- e) Between the keyboards there may be a number of white buttons with numbers on them.
- f) There will be a Blower Motor switch in the console or underneath the keyboards.
- g) If the organ has electric action, there will most likely be a voltmeter inside the console.

1.1 Discovered differences

- a) Play a few notes on any keyboard or the pedalboard: Nothing Happens!
- b) Turn on the Blower Motor switch. You will hear the electric motor and fan start up and a slight wind noise may be heard at the back of the organ.
- c) Again play a few notes as above: Still nothing happens, although a clicking noise may be heard.
- d) At this point try playing a simple hymn tune and notice the difference in 'touch' to the piano. No sound other than the 'action' noise will be heard.

1.2 Summary

What have we learned so far?

- a) That the Organ usually, but not always, has more than one keyboard, but it is shorter than a piano keyboard.
- b) That the Organ has to be 'turned on'.
- c) That you can't just sit down and play as you would the piano.
- d) Organ 'touch' feels different to piano touch.

2.0 Fundamentals - Names and Numbers

2.1 Divisions of the Organ:

The organ console may consist of one keyboard (manual) or as many as five keyboards. Many church organs have only two keyboards or manuals and a pedal keyboard, although there are a number of one manual organs, with or without pedals. All are legitimate instruments and should not necessarily be thought of as being incomplete. The standard organ manual has five octaves, or 61 notes, (some have 56 or 58 notes) which is shorter than the piano keyboard. The pedalboard will usually have 30 notes, although some have 32 notes, approximately two and a half octaves beginning at C. The following table gives the usual order of manuals from upper to lower keyboard.

Two - manual Organ	Three - manual Organ
Swell	Swell
Great	Great
	Choir
Four - manual Organ	
Solo	
Swell	
Great	
Choir	

2.2 Stops

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

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

- (i) A 16' (sixteen foot) stop will sound one octave below piano pitch.
- (ii) A 4' (four foot) stop sounds one octave above piano pitch.
- (iii) A 2' (two foot) stop sounds two octaves above piano pitch.
- (iv) A mutation stop sounds the pitch of a note other than the one played. i.e.
 - (a) A 2 2/3' (Twelfth) stop sounds a note, one and a fifth octaves above the note played. Middle c played, sounds treble g.
 - (b) A 1 3/5' (Seventeenth) stop sounds a note, two and a third octaves above the note played. Middle c played, sounds Top e. These mutation stops are designed to be used with foundation stops (8'), (4'), (2') in order to provide a different tone colour, or to add brilliance.
 - (c) Mixtures are stops which sound from 2 to 6 upper harmonics of the fundamental pitch. The number of ranks which are sounded together, is usually indicated on the stop knob or tablet, often in Roman Numerals.

2.3 Couplers and Pistons

Each division (Swell, Great, etc) provides different tone colours and dynamics and each manual along with the pedalboard, controls a separate division of the instrument. Couplers (usually in the form of stop tabs above the upper manual) make the various divisions playable on other keyboards and the pedalboard, in various combinations. e.g.

- (a) Swell-to-Great makes Swell stops playable on the Great keyboard.
- (b) Great-to-Pedal makes Great stops playable on the pedalboard.
- (c) In addition to unison (8') couplers, there are Sub-Octave (16') couplers; and Super-Octave (4') couplers.

2.31 Registration

This is the term used to describe the combination of stops chosen for a particular piece or section of a piece. On many organs there are buttons below each keyboard which are called Pistons. There may also be toe pistons, which are placed above the pedalboard. Pistons make it possible to change the registration rapidly, and will usually be graduated in volume from left to right. On some modern organs, they are adjustable at the console.

2.4 Tremulant

The tremulant is a mechanical means of creating a vibrato and should be used with great discretion and only for special effects, generally with a solo stop. The tremulant should never be used for accompanying congregational singing, as it disturbs the pitch, making it hard to accurately determine the note.

2.5 Swell pedal

The swell pedal (expression pedal) is located above the pedalboard. Opening and closing the swell pedal makes the stops of the swell division sound louder or softer. This change of dynamics is brought about by opening and closing parallel shutters on the front of the swell-box, which is a large timber box containing all of the pipes of the swell manual. **NB. When leaving the organ, the swell box should always be left open. i.e. the swell pedal pushed fully forward.**

2.6 Organ Pipes

Organ pipes are made in various shapes and are made of either wood or metal. The pipes are classified as (1) Flues or as (2) Reeds, depending on the manner in which the tone is produced. The tone of a flue pipe is produced by a vibrating column of air within the pipe in the same manner as a flute or whistle. The length of the column of air determines the pitch of the note. The sound in a reed pipe is produced by air entering the pipe and causing the vibration of a metal tongue, located in the boot attached to the base of the pipe, to sound. The length of the reed (tongue), and the length of the pipe determine the pitch and tone of the note produced.

Flue pipes produce three kinds of stops:

- 1) Principals (Diapasons)
- 2) Flutes
- 3) Strings

Reed pipes produce several different kinds of tone.

2.7 Organ Stops

- (i) **Diapasons** (also called Principals)
Diapason, Principal, Octave, Fifteenth, Twelfth, some Mixtures.
- (ii) **Flutes**
 - (a) Closed (Stopped)
Bourdon, Gedeckt, Stopped Diapason,
 - (b) Open
Flute, Clarabella, Spitzflute, Piccollo.
- (iii) **Strings**
Violone, Viola, Gamba, Salicional, Voix Celeste, Dulciana (sometimes more Diapason tone).
- (iv) **Reeds**
Trumpet, Trombone, Horn, Cornopean, Oboe, Clarinet, Clarion, Vox Humana.

2.8 Summary of Fundamentals

Bearing in mind all of the above details, the difficulties peculiar to playing and managing the organ, as distinct from playing the piano, may be summarised as follows:-

- 1) Playing with the feet, or pedalling.
- 2) Independence of movement between the hands and feet, separately and in combination.
- 3) Use of legato and staccato touch.
- 4) Management of the stops and various mechanical devices.
- 5) Method of playing with expression.

The nature of these special characteristics of the organ must be kept separately in mind, although in practice, you will soon meet them in combination. "Playing with expression" on the organ is very different from the means of expression available to the pianist. But, properly understood, the organ can be the most expressive of any instrument.

3.0 Practical Matters

3.1 Position At The Organ

The first thing to be learned on reaching the organ, is how and where to sit. It is important to adjust the seat so that you are a comfortable distance from the keyboards and to sit in the centre of the seat.

The following is the test of a good position: -

When seated, lift up both feet and hold them just over the pedals. The toes should be about 5cm from the black (sharp) keys. At the same time, hold both hands over the manuals so that they could play, if required, on any of the manuals either separately or in conjunction with the pedals. This virtually means balancing your whole body on your bottom.

If, whilst in this position, you feel that you are going to knock your nose on the desk, the organ seat is too far away from the keys, or you are sitting too near the edge of the seat. If, on

the other hand, you cannot move your knees freely to the right and left, the seat is too near the keys, or you are sitting too far back on the seat.

Always stay in the centre of the organ bench, approximately above middle D of the pedalboard and do not slide from one end of the bench to the other as you play the pedal notes at extreme ends of the pedalboard. When playing pieces or passages without pedals, it is usual to hook your heels over the bar under the organ bench.

3.2 Organ Shoes

The organist needs a special pair of shoes for playing the organ. The shoes should be fairly light weight and as narrow as possible for comfort. The soles should not extend beyond the shoe and soles and heels should never be of rubber or similar non-slip material, as it can be necessary at times, to slide your feet on the pedals as you play. The shoes should preferably have a fairly deep heel. Tap shoes or dancing pumps make good organ shoes. Some people, particularly ladies, play in stockinged feet. However, this is not recommended, as the bare heel is not deep enough, and it is very tiring on the delicate bones of the foot.

4.0 Manuals

4.1 Touch

It is now time to consider the manual touch of an organ and notice the difference from piano touch. Organ touch differs from piano touch, so new techniques must be learned.

- 1) An organ key is generally pressed down rapidly and firmly, rather than struck, as it is on the piano.
- 2) Once pressed down, the note will continue to sound at the same intensity until released. The organist must therefore control the exact beginning **and end** of each note.
- 3) The release of the key should be as precise as the attack and should co-incide with the initiation of the next note to avoid any gap or overlap of the two sounds. There will, of course, be variations to this rule.
- 3) No alteration as to loudness or softness is produced by the force used by the fingers. Whilst this removes one of the main means of expression available to the pianist, the organist has at his or her disposal, a variety of other means of expression.
- 4) Legato, in combination with various other touches and various degrees of articulation, is essential to good organ playing.
- 5) Very careful attention to phrasing is most important in achieving good rhythmic playing on the organ.

5.0 Pedals

Whilst it is quite acceptable to play the organ using manuals only, the playing of the pedals considerably widens the dynamic range of the organ. It also provides another means of expression and enhances the rhythmic leading ability of the organ in congregational singing.

5.1 Nature Of The Pedalboard

Before sitting down at the organ, carefully study the pedalboard. You will notice the following:

- 1) The pedalboard is concave, rising slightly at the extremities
- 2) The pedalboard is radiating. (some very old organs have parallel pedals)
- 3) A close look at the pedalboard will show that the pedals are like a normal keyboard with black and white notes, but are much larger to enable playing by the feet.
- 4) The pedals range from bottom C (two octaves below middle C),up approximately two and a half octaves to F, and sometimes to G.

5.2 Pedal Techniques

Do's and Don'ts

- 1) **Do** sit upright in the centre of the organ bench. i.e. in such a position that the left foot can play bottom C and the right foot can play top F with equal ease.
- 2) **Do not** move or make any excessive motion with your knees.
- 3) **Do** keep the ankles relaxed. Both toe and heel must be able to touch the pedals, which are played by ankle movement.
- 4) **Do not** strike the pedals or make a noise as you play.
- 5) **Do not** look at your feet as you practice the pedal exercises; but before you begin, examine the pedalboard carefully and notice the gaps between E flat and F sharp; and between B flat and C sharp. When you have to find a note without looking, it is extremely useful to find your bearings in relation to these gaps.

5.3 Methods Of Playing The Pedals

Learning correct touches on the pedals is as important as on the manuals. When playing on the toe, play on the inner side of the foot rather than the tip of the toe. Play the black notes with the toe and not the sole of the foot. A good legato touch, often punctuated by a shortening of the note preceding a strong beat is most often required on the pedals.

This is accomplished by:

- 1) Alternate feet
- 2) Toe and Heel
- 3) Glissando
- 4) Foot substitution

To play the notes at the extreme ends of the pedalboard, you must pivot, turning your legs in the desired direction without moving the body to another part of the seat. In ascending pedal passages, pivot gradually towards the right by gently pushing with the left foot as it depresses a key. In descending pedal passages, pivot gradually towards the left by gently pushing with the right foot. Be careful to remain in the centre of the organ bench, turning only in the direction in which the pedal passage leads.

6.0 Registration

Registration is the art of using and combining the different stops of the organ. Since sound is only produced when one or more stops are drawn, this is one of the most important means of expression available to the organist. Unfortunately, even stops of the same name on different organs, can vary quite widely in volume, texture and quality. Therefore only general principles regarding organ stops can be given.

6.1 Guidelines

1) The best stop on any organ is **The Building** in which it is located. The organ is an instrument which is best heard in a resonant environment. A building which lacks any reverberation, does not allow the organ sound to develop the harmonics, which are such an attractive part of the ‘organ sound’.

2) As a general rule, stops of higher pitches, or mutation stops, e.g. 4’, 2’, 2^{2/3}, etc. should not be used on the manuals without an 8’ foundation stop. However, there will sometimes be exceptions to this rule.

3) If only **one** stop is used on the manuals, then it should usually be an 8’ stop.

4) When **two** stops are used together, the second stop should usually be a 4’ or higher pitched stop, and not a second 8’ stop. An exception to this rule would be an 8’ string stop being drawn at the same time as an **8’ undulating stop** such as a Voix Celeste, or Vox Angelica.

5) Whilst stops of **different families** will often be drawn on separate manuals, it is better for stops of the same family to be drawn on the same keyboard. e.g.:

Great: Flutes 8’ & 4’

Swell: Strings 8’ & 4’

6) **Families of stops** are often referred to as a **chorus**, and will consist of stops of the same family at different pitches. e.g

Full Diapason Chorus: 16’ Double Diapason
8’ Open Diapason
4’ Principal (Gemshorn)
2’ Fifteenth
2^{2/3} Twelfth
III Rank Mixture

Flute Chorus:	16' Bourdon 8' Stopped Diapason (Gedackt) 4' Flute (open flute or harmonic flute) 2' Flautina (Piccolo) 1' Sifflute
String Chorus:	16' Violone 8' Salicional 4' Salicet (Gemshorn)
Reed Chorus:	16' Trombone, Double Trumpet or Fagotto 8' Horn, Cornopean, Trumpet or Oboe 4' Clarion

6.2 Mixing Stops:

Because of the wide variation between stops of the same name on different instruments, it is necessary for you, the organist, to experiment with the stops available on the organ you are playing. Registration, (tone colour) is largely a matter of individual taste, although certain styles and periods of organ music require a particular type of sound. Listening to good recordings of organ music will often help to identify the type of sound which should be aimed at. Sometimes the composer or the editor of the music, will indicate what stops to use and which manuals to play on. However, the organ may not have the particular stops specified, or when you try the combination, it may sound dreadful! In this case try alternative settings until you are satisfied with the sound being produced.

Some general principles are:

a) An 8' Stopped Diapason (Flute) may often be used as a foundation to higher pitched stops of the Diapason Family such as 4' Octave; 4' Principal; 2' Fifteenth; or 2' Piccolo, provided they do not overpower it.

b) Stops of the Reed Family, particularly those on the Swell manual, may be added to the full Great Diapason chorus. This often introduces an element of excitement to the music, particularly if added with the swell-box closed, and then gradually open the swell-box.

c) On the Pedals, the foundation pitch is 16 foot, therefore, at least one stop of this pitch would normally be drawn on the pedals, together with stops of a higher pitch, if available and if the music requires it.

d) As most small pipe organs do not have a fully independent pedal department, it is usually necessary to couple the pedals to whichever manual is being played on; e.g. if playing on the Swell, draw the Swell to Pedal coupler; if playing on the Great, draw the Great to Pedal coupler; if playing on the Great with the Swell

coupled, then draw both manual to pedal couplers. This is necessary to maintain a correct balance of sound and tone between the manuals and the pedals.

e) As a general rule, do not use two stops if one will do; or six stops if four will achieve the sound you require. Always bear in mind the clarity of the sound and the effect produced in the main body of the building.

7.0 HYMN PLAYING

Hymn playing is the most important element in the training of a church organist. They should be played with the same care as any other music used in the service. Hymns appear to be simple to play, but this is not true.

Many players do not repeat the repeated notes in the same voice, especially in the melody line, but tie them over: a practice which destroys the melodic line and the rhythm. This practice is responsible for much poor congregational singing. It is the responsibility of the church organist to make it possible for the congregation to sing well. Practice is essential for good hymn playing. When a hymn is learned, the principles of strict part playing should be adhered to in the first instance. An exception to the strict adherence of these rules is when, as in Gospel Songs, the pedal has many repeated notes and when the identical chord is repeated many times. When a building has little or no reverberation, it is often advisable not to repeat a bass note (pedal) that is repeated many times in the same measure.

The pedal should play the bass line of a hymn. Play the pedal part exactly where it is written so that the bass line is not changed. Do not double the bass line with the left hand. The left hand plays the tenor voice and sometimes the alto voice so that a reasonable legato may be maintained. The right hand plays the soprano voice and usually the alto voice, so that a smooth progression is achieved.

Many organists have the mistaken idea that the treble clef belongs to the right hand (playing soprano and alto parts) and the bass clef belongs only to the left hand (playing the tenor and bass parts). The reason for using clefs is to show the performer the notes which are to be played. It is often impossible to play all the notes in the treble clef with the right hand or all the notes in the bass clef with the left hand. Developing the technique of passing an inner voice (or voices) between the hands will produce much smoother voice leading.

Registration for congregational singing should be a bright, clear, sound, based on 8', 4', and 2' pitch. Mixtures and reeds may be added for a fuller sound, particularly on the last stanza, when words of hymns demand a more powerful registration. Reeds may also be used for special effects or a climax, but they must be used with great discretion. Of course, 16' stops will be used in the pedal, but very sparingly in the manual parts. The size of the church and congregation should be taken into consideration in selecting a suitable registration.

The organist must select a volume of tone that will give adequate support for good congregational singing. The organ should not drown the singers, but stops that are too thin or too soft, will not give adequate support. Undulating stops (such as *voix celeste*) or tremulants should not be used in hymn accompaniments. The organist must gain and keep the confidence of the congregation in his/her hymn playing and never abuse it by suddenly dropping to a

pianissimo and leaving the congregation stranded and unsupported. The purpose of the organ accompaniment is to lead and inspire the congregation. The singers must always be confident of adequate support.

In introducing a hymn, play enough of the tune to establish the melody, the rhythm, and the speed at which it should be sung. It is sometimes necessary to play an entire verse as an introduction, particularly if it is an unfamiliar one. Be certain that the introduction is long enough to make a complete musical phrase and long enough to let the congregation know the tempo at which the hymn is to be sung and the correct pitch for the beginning of the hymn.

The tempo of the introduction should be exactly the same as for the singing of the hymn, and should be played with accuracy and vitality. A strong sense of rhythm is very important. The organist must make certain that the hymn is played at the correct tempo for good singing. A registration somewhat softer than that planned for the singing of the hymn is usually used for the introduction, but the registration must be fitting to the spirit and words of the hymn.

The organist should practice every verse of every hymn because it is possible that every verse will not phrase at the same points. The organist must give the congregation enough time to breathe between verses. At the end of the introduction and the end of each stanza, hold the last chord at least a full measure and make a rest in the rhythm of the hymn before beginning the next verse.

Amen's are rarely sung these days, but if an Amen is to be sung after the last stanza, it should be played in the same tempo and at the same dynamic level as that of the last phrase of the hymn. The organist may wish to tie the common tone between the last chord and the Amen, or he may prefer to separate the last chord from the Amen. The Amen should be played in the same rhythmic pulse as the rest of the hymn.

The accompaniment of hymns is the most important function of a church organist, it is an art in itself which deserves careful study and practice.