

## **ST AGNES' CHURCH, CAWSTON**

### **A GUIDE TO THE PIPE ORGAN**

The organ is one of the oldest instruments still used in European classical music. Its earliest predecessors were built in the third century BC in Ancient Greece. From the beginning pipe organs were made in all different sizes, but the earliest ones were small enough to be carried around by a strap over the player's shoulder. These were known as *portatives* and can often be seen in stained glass windows - the photograph below shows part of one of the stained glass windows in St Agnes' Church. Large organs were built in churches from at least 1100AD.



**INTERESTING FACT:**

From the time of the seventeenth century, the pipe organ was the most complex man-made device and continued to remain so, until the invention of telephone exchange in the late nineteenth century.

***So how does an organ work?***

Organs are wind instruments, requiring wind to produce their sound – and lots of it!

The wind is pumped to the pipes through *bellows*. Whilst portatives could be pumped and played by one person, the early church pipe organs, being much larger and having lots of pipes, needed an assistant known as a *calcant* or bellows-pumper to pump the bellows; a very taxing and boring job! Today, most instruments have electric blowers to supply the wind to the bellows.

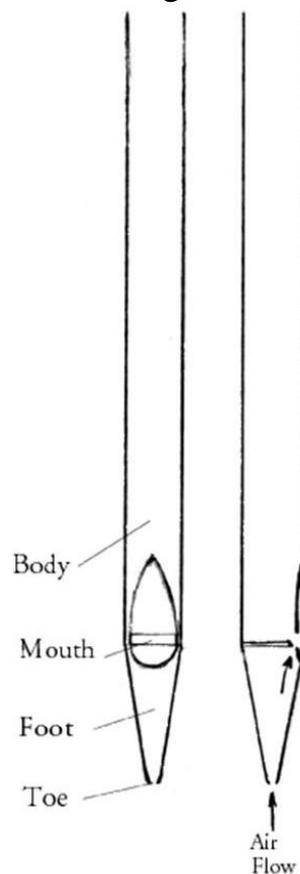
## The pipes



There are two main families of organ pipes – Flue pipes and Reed pipes. These make different sounds. The sound produced by a Flue pipe is the same sound you would hear from a flute and that produced by a Reed pipe is like the sound of a trumpet.

You can reproduce the tone of a flue pipe by blowing across the top of a bottle.

The pipes are made by melting tin and lead together in an iron pot. The metal is poured out to cool in a thin sheet. The sheet is then cut by hand into rectangles that are then formed into tubes. The bottom end is tapered into a foot and toe, where the air will blow in and the tubes become the large whistles that we call organ pipes.



## How do they produce their sound?

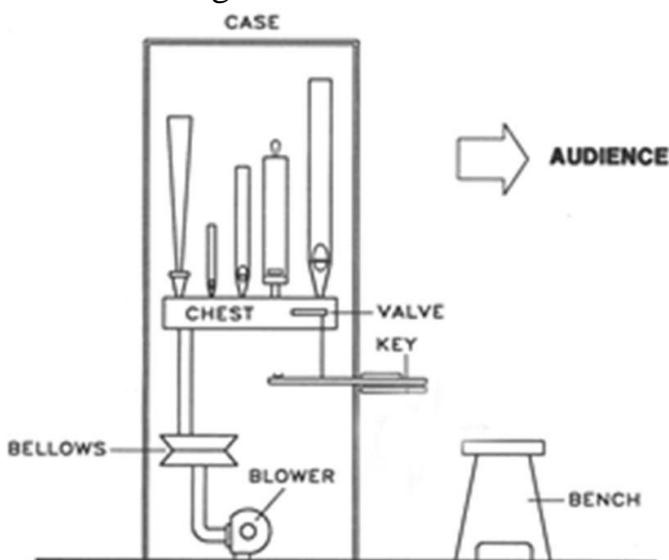


The pipes are held by wooden racks on top of *windchests*. A windchest is an airtight box that has small leather *valves* inside which let wind to the pipes when the organist presses keys at the *console*. Wind passes from the blower into a bellows or reservoir that regulates the wind pressure. *Windlines* conduct the wind from the reservoir to the chests. The diagram below shows how the blower and bellows are connected to the windchest and the pipes.

The wind enters the pipe at the toe and fills the foot of the pipe. It is forced through a narrow gap called the *Flue*. The thin sheet of air which leaves the flue rushes across the mouth of the pipe and flows past the front of the upper lip, out into the room. As air moves up and down the body of the pipe – an effect known as *oscillation* - sound waves are produced.

Each pipe can play only one note which depends on its length and diameter. The diameter of a pipe is often called its *scale*, not to be confused with the up-and-down of the musical scale. The larger the scale (diameter) of the pipe, the lower the note it plays. Shorter pipes produce notes of a higher pitch. The organ builder controls the amount of wind which enters the pipe by adjusting the size of the hole in the toe of the pipe.

The pipes are grouped together in rows known as *ranks* according to the particular sound that the pipes make. Each rank has enough pipes for every note on the keyboard and so there are usually 61 pipes in a rank. You can normally only see the front rank of pipes when you look at an organ and the other ranks are arranged behind it.



## What are the Stops?

The organist plays the organ by pressing down on keys, either on the manual *keyboard* or by using his/her feet on the *pedalboard* at the base of the organ.



*keyboard*



*pedalboard*

The *Stops* are used to stop the air from flowing through the pipes. They are part of the action that controls which pipes are allowed to speak and which are to remain silent. Without organ Stops, whenever a key is pressed on the keyboard, every pipe above that note would play!

The Stops are identified on the Console by the names of the pipes that they control. So the Stop that controls the Open Diapason rank of pipes has “Open Diapason” inscribed on the Stop Knob.



The organist pulls the Stop out to let air pass through to certain pipes to make a sound. When it is pushed in, the air can't get through – or is “stopped”.

## Are organs used only in churches?

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The earliest church organs were to be found especially in Germany, France and Holland. Before the electronic reproduction of music, the church was a primary source of music. The organ is an ideal instrument to accompany singing because it can sustain its tone unlike a guitar, piano, or drum, owing to its highly developed harmonic structure.

Today, organs are also built for places like universities and modern concert halls. The popularity of the organ has also blossomed in the Far East; many new concert halls in places such as Japan and Singapore are being equipped with fine modern pipe organs.

## What kind of music is available for the organ?

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Unfortunately in the past, organ music has often gained a reputation of being either melodramatic or boring. People often only connect it with funerals or in “The Phantom of the Opera”! The fact of the matter is that the organ has a very long history and its current repertoire of music spans a period of over 400 years.

Johann Sebastian Bach is probably the most famous composer for the organ, but there are many others from the same period in Germany as well as France, and there are modern composers writing for the organ today. Some of the great composers who have contributed to organ music include Pachelbel, Bach, Handel, Mozart, Liszt, Reger, as well as Couperin, Franck, Vierne, Widor, Dupré, Langlais and Messiaen.

## ST AGNES' CHURCH ORGAN HISTORY

The heart of the present organ at Cawston Church dates back to the 16<sup>th</sup> century – the time of King Henry VIII and Queen Elizabeth I. It is from the famous Harris school of organ builders.

The organ was restored in the 18<sup>th</sup> Century by George Pike. A Victorian Gothic oak casing has also been added at some point over the top of the original pine casing.

This organ was originally installed in St Stephen's Church in Norwich in 1814, at a cost of 270 guineas. It was moved to Cawston about 50 years later and placed in a chamber north of the chancel (red curtains conceal the original organ chamber today).

It has been restored at various times since then, but most recently in 2007 and 2008.

The organ was completely dismantled and removed to its present position in the South Transept. Richard Bower and Company, organ builders at Weston Longville, Norwich, carried out a major rebuild and restoration works – this work was made possible by a generous grant from English Heritage, as part of the Heritage Lottery Fund.