

Getting wind to a pipe organ before there were electric blowers

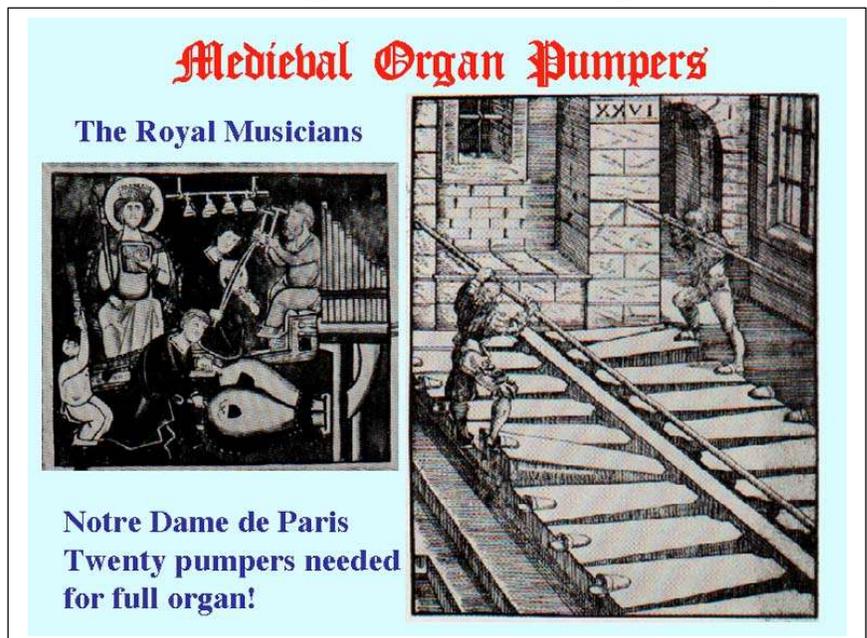
When a key on a pipe organ is depressed, a valve (or pallet) opens underneath a pipe. The means of connecting the key with that valve or pallet is called the *key action*. Pipe organs can use one of two key actions:

- 1) Some type of electric action e.g. direct electric, electro-pneumatic, etc.
- 2) Mechanical (tracker)

WIND SUPPLY – NO ELECTRICITY

Pipe organs were in existence long before anyone figured out how to harness electrical power. In fact, pipe organs were, and still are, one of the most marveled, unbelievably complex machines known to humankind. But how was it possible to generate enough wind to fill a pipe organ with air if there was no electricity to power a blower? How did the organist make hundreds or thousands of pipes play from a keyboard if there was no such thing as electrical cable through which an electrical signal could open a valve inside a wind chest, allowing air to enter a pipe?

One might say *it took a village* to make a pipe organ function, especially in larger 16th-19th century organs. Smaller church organs needed at least one, sometimes two people to assist the organist. Someone had to hand pump air into the organ. Often, there were built-in gauges on the organ warning the organist that wind was getting low. The organist could then signal the pumper, “Get to work!” Then there was the assistant to turn pages or change stops during the liturgy or musical performance.



ASSIGNMENT FOR KICKS AND GIGGLES: Wind Supply – No Electricity

1. On YouTube, search *hand-pumped organs thurlow weed*. You should find a Playlist with nine videos. Go to the video named *hand-pumped organ hastings 1553*.

Pay careful attention to the following:

- Notice the man on the right ready to pull down on the lever extending from the side of the organ casework.
- As the camera zooms in on the reservoir, notice the reservoir is flat (no air).
- Notice the extended lever under the air reservoir begins to move – although you cannot see the man operating the lever, you can hear it.
- Notice when the lever goes down, it forces air into the reservoir and the reservoir goes up

- Notice the bricks on top of the reservoir to help regulate the wind pressure.
 - As the camera shoots over to the console, notice the camera zooms in on an air gauge above the top manual
 - Notice that as it moves to the left, it signals to the organist, “Hey, wind pressure is getting low!” – then you can hear the man operate the lever and the gauge begins to go back to the right indicating air is entering the reservoir and ready to be used – most likely, the pump operator also has a gauge in front of him next to the lever – in some organs, one of the drawknobs was reserved for the organist to pull in and out, back and forth, ringing a little bell to help the wind operator pay attention!
 - When the organist begins to play, it is important to keep the reservoir full of air.
2. On YouTube, in the same playlist above, find the *AHLFAM operating the bellows of the 1798 Tannenberg Organ*. Apologies for terrible organist who is playing organ – it’s pretty bad – but still a good visual.
- This is a much larger pipe organ with much larger reservoirs (bellows) – thus a strong person would have been needed to operate the bellows – think about this... today when the organist wants to practice, the organist flips a switch and the organ is ready. However, prior to electrical power, if you wanted to practice, you had to have someone meet you at the church to pump the organ!
 - There are three reservoirs on this organ – notice how the pumper must keep his eyes on the situation, making sure the organ has enough wind.
 - Also notice that when the lever of one of the reservoirs goes all the way up, another reservoir kicks in.
3. From the same playlist, find *Michael blowing the bellows for JS Bach’s...* It is not necessary to watch this video in its entirety – just enough to get the idea.
- Notice these reservoirs are pumped by feet.
 - Notice the handrail the organ builder provided for the bellows operator – gives the operator something to hold onto while pushing down the levers, a pretty boring job!
 - Notice that when the bellows operator dismounts at end of the piece, he walks out from behind what would have been a beautiful organ façade, into the choir loft area where the organist would have been seated at the console. Most likely, he’s asking the organist, “Hey! Dude! Are you finished practicing yet? I need to go home.”
4. Find the *SPPC4807 Part 32 Organ Build* video.
- This video is pretty cool. Notice how slowly the levers rise until organist begins playing full blast around 2:30 on the video, and the organ needs lots of air – the gentleman pumping the organ goes into high gear!
 - Watch this video in its entirety and pay attention to what the demonstrator is saying.