

# Thousands of Pipes

The organ is a symphony orchestra all rolled up into one instrument. With just a “flick of a switch” the organist can make this instrument sound like stringed instruments, woodwind instruments, or brass instruments. Modern, small organs found in homes and churches produce their sound by electronics and speakers, but larger organs produce their sounds by air blowing through metal pipes. These *pipe organs* may have thousands of pipes, varying in size from the size of a pencil to the size



of a 20-foot tall tree trunk. Pipe organs have electric motors that turn a fan, forcing air into a pressurized chamber. Before there were electric motors, several “healthy” church members had to go to the basement beneath the pipe organ and constantly pump air into bellows while the organist played. When the organist presses a key on the organ, air travels from the and through the pipes connected to that key. Each key has several pipes of the same pitch attached to it. By pulling a lever called a *stop*, the organist can change the sound of the pipes to a soft woodwind or string sound, to a powerfully loud brass sound. Volume foot pedals on the organ determine how loud the sound will be...press the

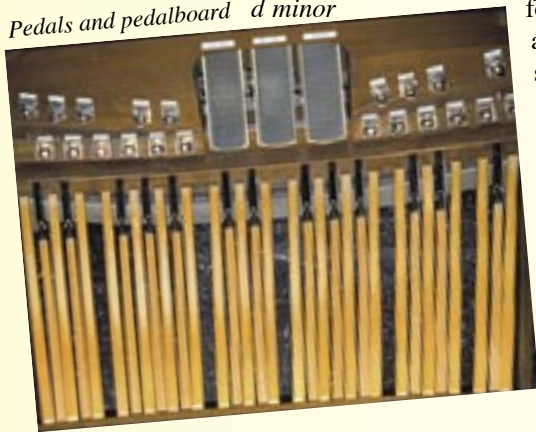


chamber A three-manual organ

pedal and you will get more sound. The organ keyboards, which are shorter than piano keyboards, are called *manuals*. There may be up to five manuals on an organ, each stacked above the other. In addition, the organ may

have a keyboard for the feet called a *pedalboard*. If all that were not enough, large organs also contain over 250 *stop* levers to push and pull, over 100 buttons and switches to operate, and numerous buttons and pedals which are operated by the feet (that is, when the organist is not busy changing the volume pedal and playing the pedalboard). Some organs look like they were designed by someone who had extra hands and feet! Many composers, such as Johann Sebastian Bach, wrote famous organ music. If you completed the *God Made Music 5* course, you may remember hearing his famous *Prelude and fugue in*

Pedals and pedalboard *d minor*



for organ that is often used to accompany “spooky” television or movie stories. One of the most exciting compositions for organ and orchestra was written by the French composer, Camille Saint-Saëns. (You will study about him in the next music lesson.) Officially known as *Symphony No. 3 in C minor*, this music is commonly called Saint-Saëns’ *Organ Symphony*. Listen

to movement 2 of the *Organ Symphony*, listening for the organ where indicated in the red box to the right.

- 0:01 [ ] Long ORGAN chord #1
- [ ] Long ORGAN chord #2
- [ ] Long ORGAN chord #3
- 0:30 [ ] Orchestra strings and piano begin melody with organ in the background
- 1:10 [ ] ORGAN plays melody, orchestra with cymbals and trumpets accompany
- 1:50 [ ] Strings play alone
- 2:10 [ ] ORGAN plays soft, short melody then music softens
- 3:05 [ ] Orchestra begins getting louder
- 4:00 [ ] Orchestra melody, ORGAN answers
- 4:40 [ ] Suddenly quiet, then gets quieter
- 5:20 [ ] Orchestra begins growing louder
- 6:10 [ ] ORGAN chords
- 6:45 [ ] ORGAN plays melody with orchestra
- 7:10 [ ] Low descending tones on ORGAN pedalboard
- 7:20 [ ] ORGAN sustained chords to the end

## Chester

American Revolution Hymn by William Billings



Let ty - rants shake their i - ron — rod, And Slav - ery clank — her — gall - ing chains:



We fear them not; — we trust — in — God; New - Eng - land's God — for - ev - er reigns.