

Inside the Disney Hall organ



ALL THE ANGLES: The design is a collaboration between architect Frank Gehry and organ builder Manuel Rosales.

Variouly described as looking like pickup sticks or French fries, Disney Hall's unorthodox \$3-million pipe organ is the centerpiece of the Los Angeles Philharmonic's season-opening concerts this weekend. While the four-tiered organ looked finished when the hall opened a year ago, the unveiling was scheduled for this season because all 6,134 pipes had to be hand-tuned and -voiced to suit the acoustics of the auditorium.

Organ divisions

The organ chamber is divided into five sections, each controlled by its own simulated ivory keyboard or wood pedalboard.

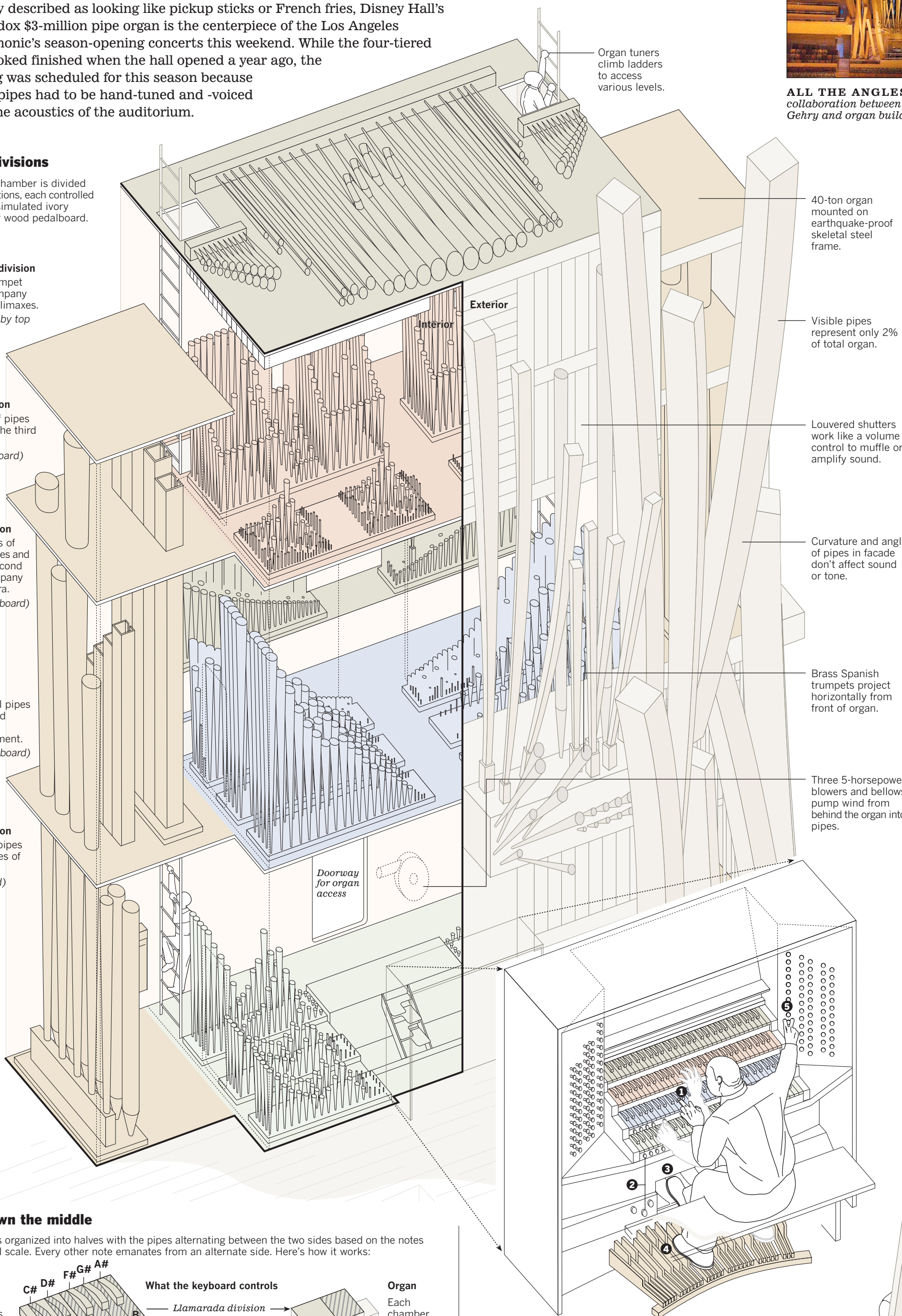
Llamarada division
Rooftop trumpet pipes accompany orchestral climaxes. (Controlled by top keyboard)

Swell division
Choruses of pipes located on the third level. (Third keyboard)

Great division
Main chorus of principal pipes and reeds on second level accompany the orchestra. (Second keyboard)

Positive division
Lowest-level pipes for solos and choir accompaniment. (Bottom keyboard)

Pedal division
Deep bass pipes on both sides of chamber. (Pedalboard)



Comparing the pipes

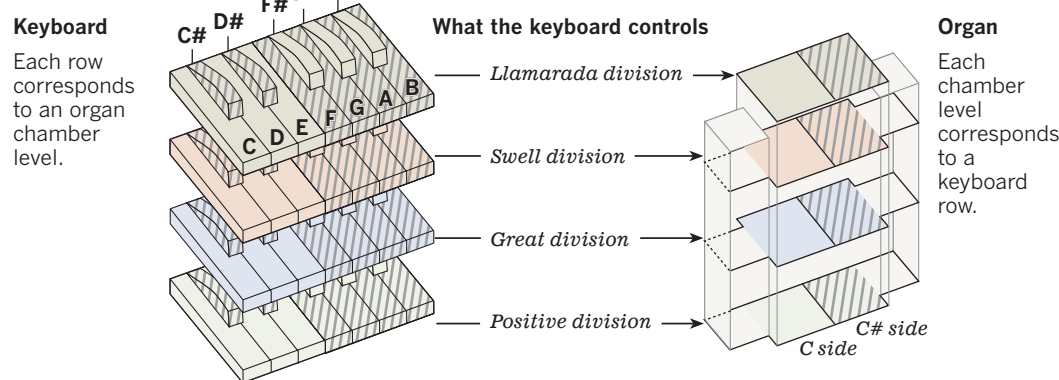
The longest pipe is as tall and thick as a telephone pole. The shortest pipe is as short and thin as a small pencil.

Longest pipe (Douglas fir)
Size: 32 feet
Weight: 900 pounds
Note played: lowest in violonbasse stop

Shortest pipe (Tin-lead alloy)
Size: 6 inches
Weight: 1 ounce
Note played: highest in piccolo stop

Split down the middle

The organ is organized into halves with the pipes alternating between the two sides based on the notes in a musical scale. Every other note emanates from an alternate side. Here's how it works:



Like an octopus at the controls

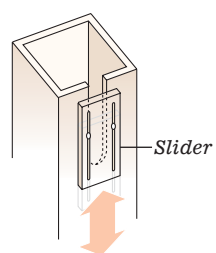
An organist at the console uses his whole body to play the instrument. Here's how it's done:

- Hands play multiple keyboards simultaneously.
- Thumbs and toes push buttons for preset combinations.
- Feet operate pedals to open and close louvered shades.
- Feet play deep bass parts on pedalboard.
- Fingers pull 128 stops to access organ voices composed of multiple pipes.

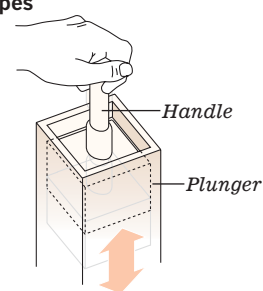
Fine-tuning the pipes

Adjusting each pipe in the Disney Hall organ for correct pitch has been a yearlong process. Depending on the style of pipe, various tuning methods are employed. Here's how it's done:

Douglas fir and Norwegian pine pipes

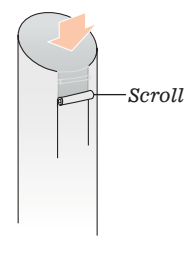


Wooden flue (Deep bass)
Adjustable slider in channel changes length of pipe.

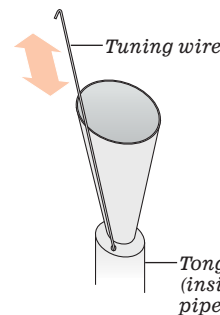


Stopped pipe (Sweet, mellow)
Plunger with handle slides up and down in cavity.

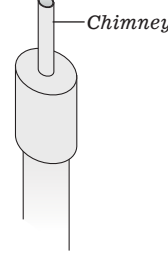
Lead and tin pipes



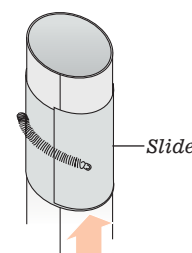
Scroll tuner (Organ tone)
Tab is cut and curled down on large metal pipes.



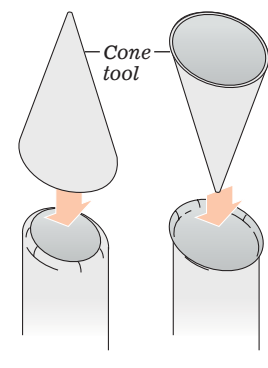
Reed pipe (Horns)
Raising, lowering wire adjusts length of vibrating tongue.



Chimney cap (Rich overtones)
Emphasizes a particular tone of pipe.



Slide tuner (Any metal pipe)
A fix employed to "lengthen" a pipe cut too short.



Cone tuning (Any metal pipe)
Pinch in to lower pitch, flare out to raise pitch.