Building the Organ

Dedication of Casavant Opus 3690 · November 2, 1990

Artis—Naples

Home of The Baker Museum
and the Naples Philharmonic
St. Hyacinthe is a quiet little city. The traffic between Québec, to the northeast, and Montreal, to the west, on the Trans-Canada highway is only a distant rumble, north of town. Even the language of choice—French—is spoken more softly than it is in say, Paris, and the sounds of small industry are not intrusive.

It is quiet most of the time around Casavant Frères Limitée—Casavant Brothers Limited—despite the fact that the pipe organs they manufacture are valued worldwide for the beauty, power and majesty of their sound. On a mild day, when the factory windows are open, passersby might hear occasional fluting, squawking or the airy, piercing note of a trumpet stop as “voicer” Jean-Paul Letourneau, in his corner studio on the third floor, sets the pitch and tonal quality of a pipe. Letourneau has been voicing pipes chez Casavant for 43 years. The sound can be harsh, unsettling, until he gets it just right, and then the sound is lovely.

Or the music can be rich, complete and exciting, although muted from the outside because it comes from the inside factory. This is when assembled organs are tested, before they are sent out to be reassembled almost anywhere in the world: Birmingham, Michigan; Tokyo, Japan; Moose Jaw, Saskatchewan; Melbourne, Australia; Naples, Florida.

On this bright May morning in 1990, it is Naples, Florida. An American organist, Stanley R. Scheer, vice-president of sales and marketing for Casavant Frères Limitée, sits at the console of Casavant opus number 3,690 (the 3,690th pipe organ built by the Casavants since 1879). Many months of work, from the casting of metal for pipes and the seasoning of lumber for other parts, have culminated in this moment. The music swells, cascades, sings and thunders, almost overwhelming the testing room; it’s easy to tell that Stan Scheer is having a good time, and his listeners are thrilled to happy tears.

Even on that day, however, Opus 3,690 is not finished. It will be taken apart again, then, in September, loaded on two mammoth tractor trailers to be reassembled by two full crews brought from St. Hyacinthe to Artis—Naples.
Why Casavant?
There are about 160 organ builders in North America, with most of the number in the US. So why did Artis—Naples choose Casavant in Canada? Reputation. Casavant Frères have been called the Stradivari of the organ world. The early 20th century organ virtuoso and composer Louis Vierne said: “These Casavants are veritable artists. They have done much for the organ, its precision and the progress of its mechanics. Their instruments are jewels.” (Vierne’s music is programmed for the first recital on the new organ, played by Olivier Latry, organist at the Cathedral of Notre Dame, Paris.)

Enduring jewels, he might have added. Only last April, death finally caught up with Juliette Casavant Oliver, daughter of Samuel Casavant, one of the two founding brothers of the firm. She had run the company for decades. During the service at Mont St. Hilaire, the Bishop made note of the fact that the organ being played for her funeral was Casavant opus 3. So the instrument was only four or five years old when Juliette was born. She died at the age of 101.

In the beginning
Although he was not the founder of Casavant Freres Limitee, Joseph Casavant was the father of the founding brothers, Samuel and Claver; Joseph also was the first organ-builder in the Canadian family. In the mid-19th century, the young man quit his job as a blacksmith to study music at school in Ste-Thérèse, north of Montreal. Because he was skilled at mechanics, he was asked to complete an organ left unfinished at the school by the original builder. Quickly finishing that job, he began building a new one of his own design. For the next 26 years, that was his highly successful calling.

On his retirement, Joseph turned over the business to an apprentice, Eusebe Brodeur, who also took over the training of Casavant’s two sons, Samuel and Claver. The lads caught on to organ-building quickly and furthered their education by a two-year trip to Europe to study and work with the great organ builders there. On their return to St. Hyacinthe, they decided to set up their own company, and Casavant Freres started on its first instrument in 1879.

Where does the building of a pipe organ begin? Everywhere, in a sense. The proper wood must be secured, seasoned and cut. The metal for pipes and other parts must be cast. Myriad parts must be fashioned, tested, made ready. Organ building at Casavant is not a production line operation, even though the production of parts in many areas of the factory buildings is coordinated so everything will be on hand when the time comes to put the instrument together. Other instruments are being built at the same time, each with its own schedule. Still, months will pass before ours looks like an organ, sounds like an organ, is an organ.

The fact remains that there is indeed a beginning, and that is the design of the instrument. Where will it go? What are the shape and dimensions of the space? What does the client want and how is it budgeted? How will it look, in order to harmonize with the structure that will contain it?

“You start with the stops which are appropriate and required for the use of the instrument and that will fit into the space available,” explains Casavant Vice President Scheer. “Then you work with Jean-Claude to create a visual design to fit the physical structure in which the organ will be located.”

Imagination: Jean Claude
Jean-Claude Gauthier is an artist whose conceptual imagination ranges from intimacy to magnificence, from subtle to spectacular. Formerly a sculptor of religious chalices, he came to Casavant 32 years ago; there he works happily, fortified with coffee and cigarettes, in a small drafting room. Through the glass walls he can see where the design detailing and computing are carried out. The computerized drafting system helps enormously, but it does not design. That is a human function.

Twenty years ago, Casavant Frères Limitée was faced with the problem of putting an organ in a circular chapel of the Lewis & Clark College in Portland, Oregon. Gauthier designed an immense eight-sided structure, containing most of the pipes, to be suspended from the chapel ceiling. Even though it contains two ranks of the 16-foot pipes and weighs 15 tons, it harmonizes with the building and suggests the grace of a pendant flower.

In Naples, Gauthier studied the plans for Artis—Naples and the building itself as it was being built. Then he designed the cabinetry, the console, the façade and selected the colors. There are two 16-foot open stops in the Naples organ, a Violonbasse in the Great and a Montre in the pedal. The façade of opus 3,690 is made of those two stops, plus the eight-foot Montre from the Grand Orgue and the eight-foot Octavebasse of the pedal. That is what listeners see.
They also see the console and whether it is placed directly in the front of the façade or elsewhere on the stage (more about that in a little while); it and the organist are bound to be the cynosure of all eyes. Each keyboard starts its life as one solid piece of basswood to be bored and routed, with ebony glued on. Accidentals (black keys) will be cut from rosewood and covered with bone, now that ivory is no longer used. It is beef bone; Casavant gets it from a company in Germany. It is a bit more porous than ivory and has an interesting texture.

The console is on wheels, so it can be rolled around easily. Rosewood is used for knobs and tablets. Names of the stops are engraved and colored with a combination of paint pigment and beeswax.

**How it works**
The Naples instrument is an electro-pneumatic pipe organ. That means that when a key is pressed, an electronic message is sent from the key to the mechanical part of the organ (wind box, pipe, etc.), which is activated and sounds the note.

It is also multiplex. That is, everything in the console is put through an encoder and thence to the connection to the organ proper via two wires through a coaxial cable. The cable carries everything. Every single aspect of every note is scanned from 200 to 400 times a second, which means that the number of such messages scanned each second totals in the hundreds of thousands. The system has to tell the organ which stops are on, what the position of the expression shade is and all of the notes that are being played. The cable, which can be connected or disconnected easily, is about a quarter of an inch in diameter, including insulation.

The woodworking done at Casavant is both seen (as in the console cabinetry and façade) and unseen (wind chests, wooden pipes, mechanisms), but all of it is beautifully, precisely fashioned and fitted. American yellow poplar and Appalachian red oak are the main woods used, along with the rosewood and other kinds chosen for their grain, appearance, durability or for whatever special need must be met.

Metal for pipes and other parts is cast right in the factory at St. Hyacinthe, and it’s fascinating to watch. Three metal alloys are used: 15 percent tin and 85 percent lead, 50 percent tin and 50 percent lead, and 70 percent tin and 30 percent lead. Heating units are set to one temperature for melting the particular alloy required, then it is allowed to drop to a slightly lower temperature before it is poured into a trough at one end of a long table. Then two workers walk the trough along the table, pouring as they go, to lay a sheet of metal on the surface. Baby powder is used to keep it from sticking to the canvas cover on the table.

**3,604 pipes**
There are approximately 78 separate operations in the making of each pipe, and the Naples organ has 3,604 pipes (in 64 ranks, with 41 independent stops and 60 speaking stops.) And pipe-making is the very heart of organ-making. Among those many procedures per pipe, the most vital are the voicing and tuning, or pitching, of each pipe. This is indeed a high, rare and demanding art.

And so we come back to “voicer” Jean-Paul Letourneau, or one of his colleagues, who had been causing the dulcet or raucous sounds we heard through the open third-floor windows as we were approaching Casavant Frères. Jean-Paul has worked there for 43 years (“Jeune homme!” he joked on being introduced).

Beside the testing bench stands a keyboard attached to a wind chest, with holes of graduated size above all the keys. A pipe to be voiced and tuned is placed in a suitable hole, then the key is depressed to sound it. The craftsman will then remove the pipe, trim or bend a bit of metal, replace and sound it again—and keep doing this until it is right.

And so it goes. There are ever so many operations in building an organ that demand a level of craftsmanship, which is in fact artistry, to match that of Letourneau, the voicer, or Gauthier, the designer. A book would be required to do justice to it all.

And when you add up all these elements, from the desire of the client (Artis—Naples) to the crew who assembled and tested every possible facet of this instrument as it was being installed on the Hayes Hall stage in the late summer and early fall of 1990, you understand why each organ has a personality.

True, it is an amalgam of many personalities brought together, however, in a work of art that will never be precisely duplicated. And inspiration, the underlying force of a work of art, is fluid, changing, impulsive.

So, Casavant opus 3,690 at Artis—Naples is unique, in the loftiest meaning of the term.
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