

The Hybrid Organ at St. Paul's Anglican in Abbotsford, Quebec

by Robert Pelletier

THE small town of St. Paul d'Abbotsford in Quebec's Eastern Townships is steeped in the early history of Canada. It was most likely founded by the descendents of the United Empire Loyalists after the Revolutionary War of 1776. Nestled along the flank of the Yamaska Mountain, apple growing has been a vital part of the economy since its inception. Along a maple- and apple tree-lined country road one finds the picturesque Anglican Church that was erected in 1822. The first clergyman appointed to St. Paul's was the Rev. W. M. Abbott, followed by his brother Rev. John Abbott, from 1824-32. He was the father of Sir John Abbott, one of Canada's Prime Ministers. The church was extensively remodeled in 1878; the gallery, elevated pulpit and reading desk were removed, the ceiling was raised, and the old spire over the chancel was removed and a tower and spire were built over the entrance. The old box pews were removed later in 1885.

Because of the picturesque setting and architecture, the church has been used on several occasions in movies and television programs. The inside of this small church is replete with memorials; the Holy Table, chairs and pulpit are in the Gothic style and carved from oak. The church is adorned with several beautiful early stained glass windows. To the left (as one faces the altar) stands a small early organ that serves to accompany services. This instrument is unusual in many ways and is possibly unique. Its pipework is entirely enclosed within the case, and it is of very early construction (possibly 1850s) by a famous Canadian organ builder (Samuel R. Warren). But most surprisingly, the organ consists of both fluework and several ranks of free reeds.

History of the organ

The actual date of manufacture of the organ is uncertain; no opus number could be found anywhere on the organ. The maker's name plate had been replaced by a commemoration plaque, but several pipes were inscribed with the name S. R. Warren, which would suggest the organ was built by Samuel Russell Warren. S. R. Warren (1809–1882) was born in the United States, where he was trained in Appleton's workshop in Boston. He settled in Montreal in 1836 and is credited with instituting professional organ building in Canada. He imported and introduced several innovations in Canadian organ building, including the Barker lever, the hydraulic blower, and several stops such as harmonic flutes and free reeds. In addition to over 400 pipe organs, his workshop also produced reed organs. His son, Charles-Sumner Warren, maintained the pipe and reed organ-building business (including the 'Canadian' Vocalion), which was eventually bought by the reed organ and piano maker Denis Karn of Woodstock, Ontario in 1896.



It does not seem that the organ of St. Paul's was originally built for that location. The minutes from the Vestry Meeting on Sept 15, 1873 make mention that "Mr. Hill of Montreal {a dealer in musical instruments} had made a proposal to furnish the church with a new musical instrument at a cost of three hundred dollars (\$300.x); and that he will allow eighty dollars (\$80.x) for the old instrument in exchange for the new one, and will also make a disc't of twenty dollars (\$20.) on the price of the new instrument leaving two hundred dollars (\$200) to be raised by subscription". There is no information on the 'old instrument'. However, the price and the style of the casework (pre-1860s) of the Warren organ indicate that the church was buying a second-hand instrument. The fact that the entire organ is mounted on casters and has a pipe-less façade may point to a previous installation in a large private mansion; once the manuals and pedals are slid into the casework, the instrument resembles a large china cabinet. The restorers of the instrument, Denis Juget and Stephen Sinclair, suggest that the monogram 'A M' on the fretwork panel point to previous use in the chapel of a Catholic Church or institution. Upon disassembly, ancient scraps of newspaper were



the left jamb are (letters above names are original):

A Clarion 4		A Flageolet 4
B Bassoon 8	Gr. & Swell.	B Clarinet 8
C Violoncello. 8	Sw. & Pedals.	C Viola. 8
D Serpent. 8	Gr. & Pedals.	D SaxeHorn 8

The stops on the right jamb are:

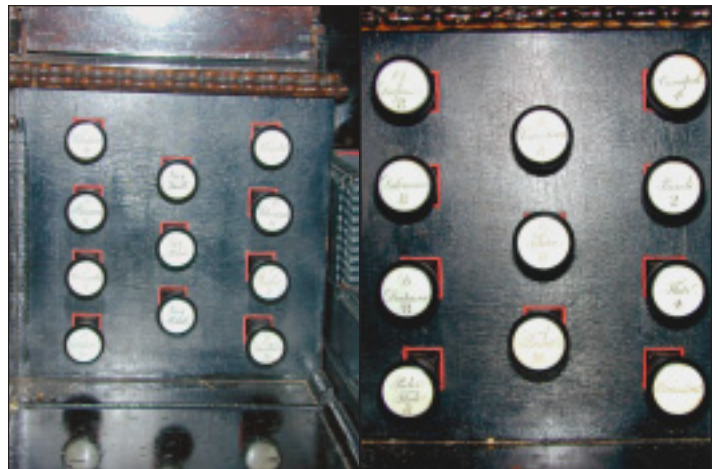
Op. Diapason 8		Principal. 4
	Cornopean 8	
Dulciana 8		Piccolo. 2
	E Horn. 8	
St. Diapason 8		Flute. 4
Rohr Flute. 8	Tuba. 16	
		Tremulent

found glued to portions of the casework under the stop jambs. One of these scraps refers to the Grand Trunk Railway. Since this was incorporated in Montreal in 1851, this would provide the earliest possible date of manufacture.

Casework

The pipes and reeds are housed in a square case that is entirely covered with rosewood and walnut adorned with rosewood faux-painting and gilded highlights. The moldings around the panels are “pie crust”, which help date the instrument. The entire instrument is mounted on casters and can be moved without too much difficulty. The organ is 94 inches high, 64 inches wide, and 35 inches deep. When the keyboards are in use, these project 9 inches from the case. The organ has two keyboards; manual 1 (the Great) plays the flue-work and one rank of free reeds, the Horn/Cornopean (a possible stand-in for a Great trumpet). Manual 2 (the Swell) plays only the free reeds. The pedal board can be coupled to either keyboard; it also controls a single rank of 16’ free reeds. The keyboards and pedal board were originally designed to slide into the casework. Although currently winded by a modern blower, the organ was designed to be winded by an assistant using a hand lever located at the back of the instrument. The organ could also be pumped by the organist using a long metal foot lever (now lost) at the bottom right of the instrument. At present, the pedal board has been made immobile.

On each side of the manuals are the stop jambs; these hold the hand-scribed ivory-faced stop knobs and couplers. The stops on



Above the manuals is a large fretwork panel through which the sound can exit; there are remnants of red cloth inside the fretwork. The 56-note, C-scale manuals are faced with ebony and ivory. The C-scale pedal has 25 notes.

It seems that the organ was completely repainted when it was moved to the church. Because the church furnishings were of



oak, the rosewood faux-graining was entirely covered by faux graining resembling quarter sawn oak. However, by the time of restoration, most of this had already been removed (revealing the faux rosewood), such that only the keyboard cover was still grained to resemble oak.

Pipework

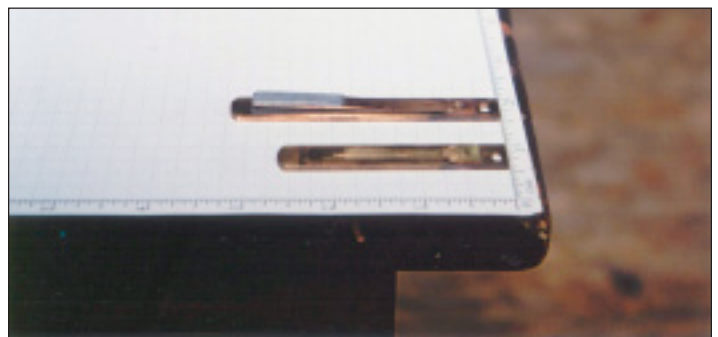
The St. Paul organ possesses six ranks of flue pipes; Open Diapason 8' (open metal, treble), Stopped Diapason 8' (stopped wood bass), Rohr Flute 8' (metal chimney flute, treble), Dulciana 8' (open metal, treble), Principal 4' (open metal), Flute 4' (stopped metal cone flute), and piccolo 2' (open metal). The metal pipe work is signed S. R. Warren and does not seem to have been revoiced in any way. Cut ups are low and nicking of the diapasons is extremely light and widely spaced. All open metal pipes are tuned by spiral tuning slides which ride on a large blob of solder. The tuning slides are of the same manufacture as the pipes themselves, but the pipes also have closed-up tuning slots underneath. This tuning method may have been adopted in response to a persistent problem of reeds and flues not staying in tune. Furthermore, the lettering on the slides and pipe bodies are identical. Since the pipes are much more accessible and can be re-tuned nondestructively, a spiral tuning slide is a logical solution to eventual metal fatigue in the tuning scrolls. The stopped wooden bass is tuned with stoppers, whereas the Rohr Flute 8' and Flute 4' are tuned with large ears, although previous tuners have also resorted to pinching the chimneys shut on the

Rohr Flute. A peculiarity of the Flute 4' is that it is stopped with small plugs of cork.

The open diapason is both bold and singing. Drawing the 'Op. Diapason' stop automatically draws the stopped bass as well. The common bass is a narrow-scaled and very quinty stopped diapason. The voicing over the transition from stopped wood to open metal is extraordinarily seamless. The piccolo (in reality, a fifteenth) adds brilliance to the ensemble without being screechy. Possibly the loveliest stop on the organ is the Flute 4'; it is extremely refined and gentle and blends well with other stops or stands well on its own. Overall, the pipe work has a gentle voicing with a typically 'British' small organ sound.

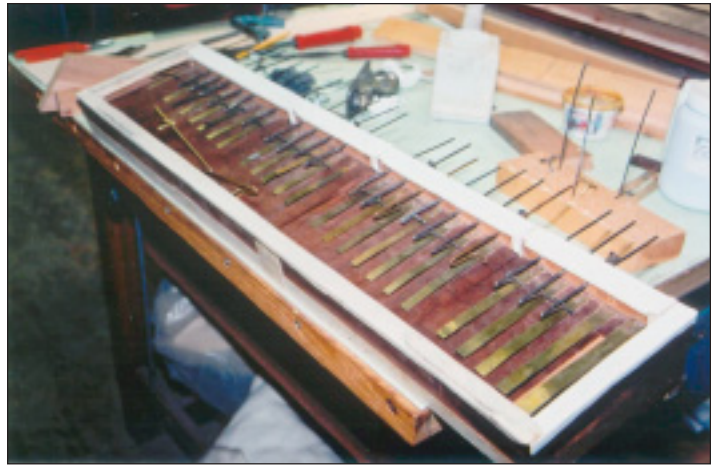
The Reeds

All of the manual reeds have rounded tips and a square hole punched into the frame for a reed hook. A single rivet fixes each



tongue to its frame. The tongues are heavily weighted by strips of lead in the bass octave. Curvature of the tongues is not as pronounced as that typically seen on late 19th century reed organs such as Estey or Mason and Hamlin. Although there is a certain amount of twist to the tongues, this also is minimal. The resulting sound is bold, the attack is prompt and the reeds can more than hold their own against the pipes. Although the sound is more assertive than one would expect from a typical parlor reed organ, it is not as keen as that of a harmonium. Nor does it have the rounded flutey sound of a Vocalion (a pressure-type reed organ). The reeds and reed pan are both typical of suction reed organ of the time; the reeds have been made to operate on pressure by turning them upside down.

The ranks of manual reeds have been divided into bass (17 notes) and treble (39 notes) sections. On the Great is the 8'



of a bourdon. Because of the amplitude of their travel, the tongues are prone to frequent breakage.

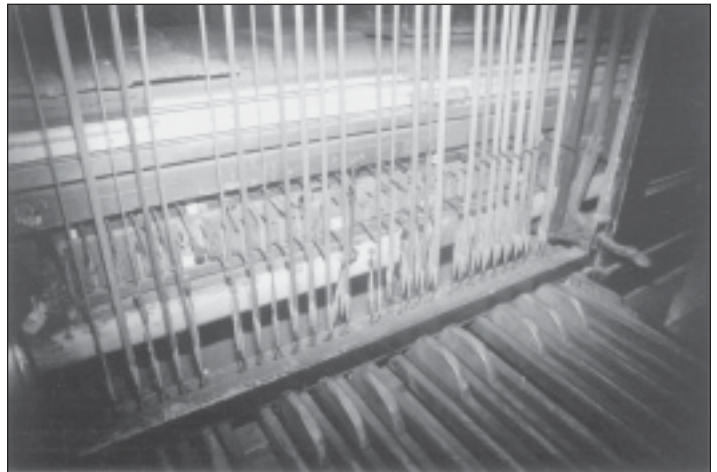
Peculiarities of the Mechanism

During restoration, several peculiarities in the mechanism became evident, which seem to indicate that the organ was built



Horn/Cornoepen, while the Swell manual plays the following ranks; Clarion 4'/Flageolet 4', Bassoon 8'/Clarinet 8', Violoncello 8'/Viola 8', and Serpent 16'/Saxe Horn 16'. The Great Horn/Cornoepen is not bold, but rather has a round, mellow tone. It is somewhat flutey and is more akin to a 'melodia'-type reed. The Swell Serpent/Saxe Horn is bold and reedy, but not very bright-sounding. When coupled to the pedal, it provides a soft 16' voice. The bottom octave of this rank tends to be quite slow of speech. The Clarion/Flageolet is similar to the Serpent in tone, although somewhat brighter. The Bassoon/Clarinet is very bright and somewhat 'nasal' in tone, while the Violoncello/Viola has a full intonation. It is neither stringy, nor flutey; it is essentially a foundation reed.

The 16' pedal tuba is an entirely different beast from the manual reeds. The tuba is mounted on its own chest directly on the reservoir over the pedal board. The tongues are hand-cut strips of brass with parallel sides that are screwed onto the mahogany reed pan. Each tongue has a tuning wire as one would encounter on beating reeds. Each note is played by pulling open (with a tracker) a small spring-loaded pallet that allows both air to pass over the tongue and the sound to exit the chest. There are no resonators, although there is a large cell under each tongue that may act as a resonance chamber of sorts. The volume from the tuba is astounding; it is best used with full organ; otherwise it tends to overwhelm the other stops. The sound is full and majestic; not dull and droning, but definitely reedy (yet not overly harsh). Its effect is closer to that of a bombarde than that



from 'stock' parts for a small pipe organ and a reed organ, both of which had to be modified to function together. Several components in this instrument are identical to another Warren pipe organ at the United Church in Dunham, Quebec. It is proposed that Warren used a finished wind chest and its pipe work (either from an existing instrument or one pulled from regular production) which would have normally been used for a small single-manual instrument and combined it with a modified bellows and reed organ chest to make a hybrid pipe organ/harmonium prototype.

The wind chest for the Swell reeds was originally designed for a vacuum reed organ. The reeds are inverted to play under pressure. The mutes have a spring-loaded 'sliding gate' construction that is similar in concept to those of early (1850–60s) Mason and Hamlin reed organs. The banks of reeds are enclosed by cloth-hinged swell shades of typical reed organ design. The Swell chest is narrow enough that the keys line up to the pallets. The reach of the keys are extended by back-falls which open the pallets in the reed chest. The chest is located under the larger chest for the Great. A peculiarity of the reed



cells is that they have been installed in a vertical position, with the openings to the reed cells facing upward, instead of the usually horizontal configuration. This configuration offers better access to the reed for servicing. The Swell shades are two large wooden flaps that open sideways.

Because the chest for the Great is much wider than the keyboard, splayed (or fan) back-falls are used to connect the keys



to the roller board. Each key is connected to a sticker, then to a back-fall, a tracker, a roller, and another tracker that opens the valve. The pipes have a 'N-shaped' arrangement on the chest, with the bottom 17 notes distributed at either ends of the chest. The reed cells for the Horn/Cornopean are mounted horizontally to the back of the pipe chest (facing away from the player). The reeds have the same 'N' arrangement as the pipes and are actuated by a large central mute and two small linked mutes on either side for the lowest 17 notes. Because of this unique arrangement, the reed cells and mutes for the Great were evidently custom-built for this instrument and are not recycled parts originally meant for a reed organ.

The division of the keyboard into bass and treble for the reeds is somewhat perplexing. Instead making the split at the 26th note (in order to get a full set of 25 notes to couple to the pedal), all the reed stops (both on Swell and Great) are divided into 17 notes in the bass and 39 notes in the treble. This limited range in the bass would seem to limit the versatility of the instrument. Could this strange split be explained by assuming that the builder used 'stock' reed cells for this organ, which would have most

likely been F-scale with a full 5 octaves (61 notes)? This would have meant that the bottom 5 notes would have been removed to fit the compass and scale of this instrument. If the original split was at E/F (notes 24-25), removal of the bottom five notes still leaves more notes in the bass than are currently on this instrument. Apparently, the builder decided to let the arrangement of the flue pipes determine the split for the bass and treble sections of the reed ranks. Indeed, early 19th-century pipe organs with 25-note pedals and a 17-note/39-note keyboard division are not unheard of. Certain organ builders in Massachusetts (where Warren obtained his training), such as George Stevens and E. & G. G. Hook, used this keyboard division in the 1850s and 1860s. Changing the length of the bass and treble mutes on the reed pans would have represented but a minor alteration.

A beater type tremulant is built under the Swell reed pan and affects the reeds only.

There are certain other 'irregularities' in the construction. The wind trunk is on the C side of the organ, but there are other smaller openings in the C# side of the wind chest and bellows that have been covered over. Again, this suggests that 'stock parts' for a small pipe organ were adapted for this instrument and not originally intended for this purpose. The pallet box for the Great has been modified after construction to make room for the Horn/Cornopean free reed. Also, the front of the Great wind chest was modified to make room for the music desk.

The pedal board was moved over slightly to the left. This was possibly done to make room for the hitch-down Swell pedal that a single-manual instrument pipe organ would not have possessed. The pedal board was originally on slides and could slip into the case when not in use; however, this was modified to remain permanently outside the instrument. This was probably done because of the addition of the pedal tuba. Another reason could be that in its new vocation as a church instrument, it was no longer necessary to hide the pedal board in order to give the illusion that the organ was a large dresser or china cabinet when not in use.

Finally, the lower section of the back of the organ is humped to go around the bellows, which sticks out from the back of the case.

The Restoration

When the restoration of the organ was placed in the hands of the Juget-Sinclair firm of Montreal, the organ was in rather sad shape. The warden of St. Paul's, J. M. Fisk (a direct descendent of Cotton Fisk, who donated the land on which the church is built), and his wife, Marie-Cecile Brodeur realized that something had to be done about the deplorable condition of the organ. They brought the unique features of the instrument to the attention of Christopher Jackson, Artistic Director of Montreal's Studio de Musique Ancienne. Their efforts paid off when they obtained a generous grant of \$36,000 from the Quebec Religious Heritage Fund for restoration of the instrument; another \$4,000 was raised by the community. Presently, the organ has been classified by the government of Quebec as a protected heritage instrument, meaning that it can never be modified or leave the Province.

Many pipes were dented or torn from ham-fisted tunings. The Swell manual, which controlled the reeds, was inoperative, as was

the pedal. Leaks abounded. The casework was disfigured by the insertion of an unsightly electrical knife blade switch and access holes in the side of the case for a duct from a modern blower.

The organ was thoroughly cleaned and worn leather and felt was replaced. Pipes and reeds were cleaned; one broken reed was replaced with a reed from an 1880s Doherty reed organ, modified to fit in the reed cell and work on pressure. The flues were tuned to the reeds (A439.5 Hz) at 20 degrees C. By trial and error, the wind pressure was set at 60 mm (2.46 inches). The tremulant was reactivated and several broken tongues in the pedal tuba were replaced. Remnants of late 19th century oak graining were removed from the keyboard cover and damaged panels were repaired and re-grained with faux finish rosewood. A new, silent blower (placed in the vestry) was installed.

The Recital

On a fair and sunny May 20, 2004, the little organ of St. Paul's Anglican was revealed to the public during a recital that was later broadcast throughout Canada by the Canadian Broadcasting Corporation. The audience overflowed the small church, but those outside could still hear the instrument through the open doors and windows while they stood among the blooming apple trees and lilacs. The organist was Christopher Jackson, with soprano Teresa van der Hoeven.

Hymn: Fairest Lord Jesus

Variations on 'Was Gott tut,
das ist wohlgetan' Johann Pachelbel
Voluntary in F major John Stanley
Voluntary in E minor John Stanley
An Evening Hymn Henry Purcell
Where 'er you walk G. F. Handel
Marche Frederic Glackemeyer
Menuet Francais Amedee Tremblay
Two leider : Un moto di gioia
Senseucht nach dem Fruhlinge W.A. Mozart
Berceuse Louis Vierne
Scherzetto Louis Vierne
Hymn of Nuns L.J.A. Lefebure-Wely
Le temps des lilas Paul Arel
Hymne au printemps Felix Leclerc
Jesus Christ is Risen Today (arr) Edith Campbell

Hymn: Guide me, O Thou Great Jehovah

The little organ proved surprisingly versatile rendering organ literature of different periods. The mild, low-pressure flues were ideal for the Pachelbel; the introduction of a single free reed in some variations resulted in a sort of 'regal' effect. The organ was perfectly at home with the Stanley Voluntaries and other English literature; there, the free reeds stood in for the mildly-voiced English trumpets. The free reeds were particularly effective in the French Romantic literature. The full flue and reed choruses played against each other in the Menuet Francais, whereas a single rank of reeds created a gentle 'hautbois' effect in Vierne's Berceuse. The organ seemed designed to play the quirky and

humorous interplay of voices in the Scherzetto. A couple of songs from two of Quebec's popular 'chansoniers' were played on reeds alone, which successfully evoked a Parisian accordion street recital. The songs ('Lilac Time', and 'Hymn to Spring') were perfect for the Spring season and the scent from the multitude of vases of lilac flowers in the church. The full resources of the Warren organ were brought to bear in the arrangement by the late Edith Campbell of St-Jean, Quebec; the piece started modestly, but gradually built up until all ranks were playing, including the majestic pedal tuba. The effect was certainly more than one would have expected from a small transplanted chapel or chamber organ!

Practical Considerations

The recital of the restored Warren hybrid organ was conducted under ideal conditions; the organ was recently adjusted and flues and reeds were in tune. Under such circumstances, the combination of mild English-voiced flues and bold (but not harsh) free reeds was both intriguing and successful and supported the singing of audience of 150. It would have appeared that the use of free reeds in small church instruments would have been an ideal solution where constraints of budget and space would preclude the use of beating reeds. However, the daunting task of keeping the temperature-sensitive flues and the more stable free reeds in tune seems to have been the Achilles's heel of this type of hybrid instrument. Although the various tonal colors blend well, the fact that the flues required a modified tuning system is testament enough to the constant struggle with tuning. To make matters worse, hand pumping provides insufficient wind for the full organ; vigorous pumping only shakes the instrument and detunes the flues. In practice, it seems most likely that the organist would have given up on constant fine tuning and would have played the Swell and Great separately, but rarely together. In this application, the organ would have become 'two organs in one' instead of a single 2-manual instrument with well-integrated flue and reed voices.

Conclusion

The early 19th century was a period of innovation and experimentation in organ-building; witness introduction of free reeds in the pipe organ, the development of the reed organ, and the appearance of various hybrids like the Debain 'harmoniconde' (piano-harmonium), and free reed and flue combinations. The rarity of these few survivors underlines the technical difficulties, but their authentic and elegant sounds are to be cherished and still live on.

Enquiries on the organ or the church may be directed to Marie-Cecile Brodeur at fisk@videotron.ca or to Heritage Abbotsford, a non-profit organization dedicated to the protection and enhancement of the heritage site, including the organ, at heritageabb@hotmail.com.

Robert Pelletier is a member of ROS who resides in Clarenceville, Quebec and who owns (at last count!) 18 reed organs.