Problem Solving

ROD MCDONALD discussed the craft of type design, including the famous Cartier face and one of his own, Laurentian, at the annual meeting of the Alcuin Society in Vancouver on June 6, 2016.

THIS EVENING is less about me than about the craft of type design and, more specifically, type-making. It occurred to me some time ago that a lot of people use type but very few people have any kind of understanding of how it is made: what goes into making it, why it's made, how it's made, or anything like that.

I'm going to take you on a little journey. I am going to use three of my own typefaces to illustrate three different approaches to type design.

I didn't start out as a type designer. I started out as a lettering artist. I was working mostly for large design studies and advertising agencies in Toronto, and we always had to do this kind of show-off stuff somewhere along the line—[something] to show that you could do things that couldn't be done by type.

Most of it was pretty pedestrian. Some of it, like Tea-Bisk, was typical packaging stuff for clients—whatever style the designers or art directors felt they wanted or needed. Often, I would come up with ideas for them as well. By 1990 I was going into advertising agencies and I would see a bank of Macintoshes, but the art directors would put their arms around me and say, "Don't worry, Rod, this isn't going to affect you." Well, needless to say . . .

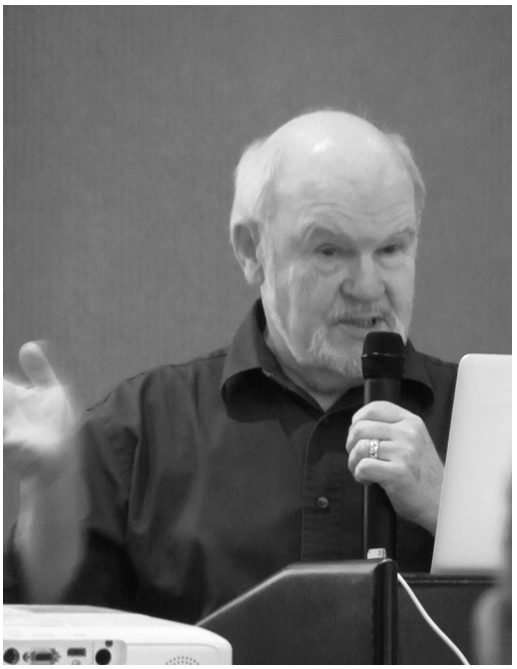
The upshot of it was I ended up setting up a studio in my basement in North York in Toronto and keeping a few clients, and that gave me time to get into type design, which was something I had always wanted to do. I had made many alphabets for corporations and for advertising agencies, but I had never made a real typeface.

I ended up doing a lot of work at one point for various magazines too, including typographic styling, designing mastheads, and developing typefaces, especially modifying or customizing typefaces. It was during this whole period that I finally decided that I wanted to take a stab at type design.

What I really wanted to do for my first project was to do something with Carl Dair's Cartier typeface, which was Canada's first Latin typeface. There had been in the 1840s the Rev. James Evinson at Norway House in Manitoba, and technically he was the first because he cut type to print the Cree syllabics, but for us in the Latin alphabet, Carl Dair produced the first one in 1967. Carl was a brilliant man, and completely self-taught and far more important than we have time to go into today. I have spent a good part of my life speaking about Carl, even though I never met him. (In 1967 I was living here—my wife and I were starting out our lives here—and we got to Toronto in 1973 and Dair died in 1967, the same year Cartier was released.)

REVISITING CANADA'S FIRST TYPEFACE

Cartier was an interesting typeface when it was released in 1967, ostensibly as a gift to Canada on its centennial. My own feeling about this was that Carl simply ran out of time, and the centennial happened to be a convenient cut-off point. He gave the people of Canada a Roman alphabet and a matching italic, produced by Mono Lino Typesetting on Dupont Street in Toronto. (I ended up working there, which is sort of where the connection started.) It was highly original, it was unlike almost anything that had ever been done in terms of typeface design up until that time. But it had a tremendous number of problems. They came to light for me in a major way in 1982. We set all the material for the Canadian Charter of Rights and Freedoms at Mono Lino, and it gave me my first real opportunity to take a look at this typeface, Canada's first typeface. In fact, I set the major words, "Canadian Charter of Rights and Freedoms," in a hand-set phototypesetting manner (that's my only contribution to this project—the rest



Rod McDonald at the lectern.
(*Peter Mitham photo*)

of it was done on typesetting machines).

But I became intrigued by the typeface. Every morning I would go in to work at Mono Lino and look at proofs that had been run off the night before by the night shift, and study this typeface to see how it looked when it was actually set in words in a major document. And it was appalling (I'm sorry, there's no other word for it). The English was tolerable, the French was slightly less so. The one that sticks in my mind, of course, was Polish; it looked horrible. I thought, "What is wrong with this, and why doesn't it work, and what can be done?" And that was the genesis of my getting involved in this project.

A few years later Mono Lino went under. The computer revolution changed everything in the world.

I ended up running a company downtown and basically working long hours to pay the rent and support everybody. But I finally did get a chance in late '97 and I said, "OK, I'm going to take a stab at this."

Typically when a designer comes up with a concept for a typeface, and in those days, of course, Dair did black and white sketches. In the normal course of events, the designer will take those sketches to a large foundry—Monotype or Linotype, or whichever foundry would actually manufacture the typefaces. They would take those sketches, turn them over to their drawing offices, and those sketches would be turned into, essentially, engineering drawings and adapted to making a proper typeface.

Well, I discovered in my research on the typeface that Dair indeed went down to Linotype in New York, brought his sketches down, and they discussed the possibilities of making the original grids for the lino film machines—and it was too costly. It was horrendously expensive. So they gave him a formula for establishing distances between letters and said, "Go back to Toronto, mark this up, and then bring back the sketches and we'll make the grids for you."

So to make a long story short, Canada's first typeface was never finished. It never went through that last process. The Linotype, in essence, photographed his sketches and made the grids, and that is what we had been using all this time. That accounted for 95 percent of the problems with the typeface. Everyone was patriotic and pleased that Canada finally had its own typeface, but it really wasn't getting used. The joke was that any time anyone in the country got a Canada Council grant, they felt obligated to use Cartier; other than that, it just didn't get used.

Once I knew that, then I realized what my job was. I'm not designing the typeface, I'm going to be the drawing office that Carl never had. That meant making the changes the drawing office would have made, often in arguments with Carl.

Carl had some pretty strange ideas, because although he was a brilliant graphic designer he was not a type designer, and they are two entirely different fields. So he made some fundamental decisions that were incorrect. One of them was he felt that by heavying the baseline of each character, that it would increase readability, which is a concept that made no sense, whatsoever, to anyone. Why he did that, I have no idea. But I realized that was a mistake.

I also realized he was trying too hard, in some cases, to get a 16th-century look. With the very, very small eye of the *e*, for instance, which is a delightful feature of typefaces, but it really

doesn't work at small sizes because that little counter space in the *e* just fills in completely at small sizes. So a lot of it [my work] was decisions like that: opening things up, making serifs stronger, just making the dot on the *i* definitely stronger. Just increasing the horizontal flow but without resorting to the blobbiness that his heavy baseline demanded. And then just reshaping some fundamental characters.

It doesn't look like much at this size: that's a very, very narrow *s* at text sizes. So there were a number of basic decisions, and I should tell you—the interesting part of this, and I became quite used to this—I found myself every time I made a change (and I was under a lot of pressure of my own making, admittedly, but also because of Carl: here was the dean of Canadian graphic design, Canada's first typeface and my first typeface, my first real typeface—who did I think I was? Did I really know what I was doing?), I found myself engaged (and I probably shouldn't admit this) in long arguments with Carl, and he'd been dead by that time for over 30 years.

A MEASURE OF THE MAN

I didn't mind so much when I won but it was disconcerting when he won. That went on for a couple of years, and I got to know him quite well. Strangely enough, I did get to know him, because everything he did, I had to develop an understanding of why he did it and then argue with him when it didn't work. I never met him, but many of my friends knew him quite well and were close to him, and he was a wonderful man from all accounts. But I think he must also have been quite stubborn.

He produced the accompanying italic (at the top) and he made it very narrow in the manner of the first italics, developed by Aldus Manutius in Venice in 1501. For some reason, Carl decided he was going to follow suit with that. He decided that he was not going to have sloped capitals to go with the italic lower case, because his argument was, "The first italics didn't have sloped capitals so mine isn't going to have sloped capitals." And this is the kind of decision where you say, "Carl, that was almost 500 years ago. People want sloped caps for their italics."

But I also had to widen the italic considerably. The Roman turned out to be a piece of cake, but the italic was a tremendous amount of work. And if the lower case *s* in the Roman was narrow, the *s* in the italic was almost unusable. And you just only have to imagine one word, and that's the word "is." It happens quite frequently that the word "is" can be italicized, and if you do that with an *i* and an *s* that isn't much wider than the *i*, it just disappears, so you really do need to make a number of changes. And it seemed to work.

EXPANDING ON A WINNING FACE

I want to point out something about typeface design that is really not understood. Our tools today are digital tools. In the past, when a type-maker—a Garamond or a Caslon or a Baskerville, any of the famous type-makers of the past—when they produced a typeface at a range of sizes, that typeface actually changed at each size, so typically the larger sizes would be lighter, more refined, greater detailing, the kind of design we have in our minds when we're thinking of a Caslon or Garamond. And as they got smaller, the typefaces typically got heavier and wider, to compensate optically for that reduced size. So very often a very small 8-point typeface was quite different than the 72-point. It would still be called Garamond or Caslon, but the design was adjusted by the type-makers. And we've lost that today. Actually, we haven't lost it. Our digital tools will do that, [but] people just don't want to pay for it.

So the expectation today is that we are supposed to produce a typeface that people can use at a whole range of sizes, and use successfully and competently at 72 point and at 8 point and all the sizes in between, which really is kind of a fool's game. Any idiot can produce an alphabet, but it takes a really special idiot to produce an alphabet that's going to work at a wide range of sizes. I spend more time at this stage. I'm better at it now, but you just have to push these letters around and keep working until you get a somewhat acceptable range so the typeface can work. And it's something that people don't understand. But it's absolutely crucial. We do have the tools that can handle this, but even some of the best book designers in the world have said, "Well, I can't be bothered." It's one of the distressing aspects of typography today for me.

Cartier Book Regular
Cartier Book Italic
Cartier Book Medium
Cartier Book Bold
abcdefghijklmn
opqrstuvwxyz
0123456789

Type sample of Cartier Book.

The end result was that I ended up taking Carl's original two typefaces and producing a small range, and it was quite small, because to be perfectly honest I wasn't sure if it was going to work. And I was feeling a lot of pressure, again, because it was Carl Dair and Canada's first typeface. Anyway, Sam Smart was a very good friend of Carl's who saw it, and he said, "Oh, it's a lot better than Carl's." So I felt a little empowered at that point.

Then Sam Bevington at Coach House picked it up and said, "This is the new house face for Coach House." Andrew Steeves at Gaspereau picked it up, Linda Gustafson started using it for things, and I thought, "OK, this is a winner." I have been working on extending the range and actually I have just been asked, recently, by Monotype if I would consider going back and reworking this. I've agreed to do that, but I went back to them and said I do want to do one other thing. (And this is as much for Carl Dair as for anything else.) I want to expand this and do a full international language typeface. So Canada's first typeface is going to be greatly expanded, and every font—Greek, Cyrillic, Cree, Inuit syllabic—we're looking at everything. Arabic, the whole kit and caboodle, because Canada is a multicultural society and our first typeface really should reflect that. So that's the next stage with this. And now I'm feeling better because I know the damn thing works. I can tackle the next stage.

I've also developed a set of ornaments. Carl did the maple leaf and the fleur-de-lis, which we never actually used at the beginning because there simply wasn't room, physically, on the early phototypesetting machines. So I was able to bring them into the digital font, and I've since added all 10 provincial flowers and pine cones, fiddleheads, anything Canadian. It's going to be in this font. If anybody has any ideas about symbols that should be incorporated, I would love to hear it.

The high point for me was a few years ago when the national Historic Sites and Monuments Board and Parks Canada chose Cartier for the bronze plaques for all the historic sites in Canada. I felt very good about that because it really did vindicate that Carl's design worked, and under especially difficult circumstances. These are not something easy to control, like fine typography in the book. These are basically sand cast in bronze, and it held up well. And I thought, this is the perfect vindication for Carl Dair.

A DEDICATED FONT FOR MACLEAN'S

The second important typeface for me that I worked on is Laurentian, and this is my own. This is a typeface for *Maclean's* magazine. I didn't realize it at the time, when we first embarked on this project, that it was actually the first time a magazine in Canada had ever commissioned a typeface. (The second half of that joke: that it was the last time a Canadian magazine ever commissioned a typeface. They're quite happy just using whatever they can get off the Internet, unfortunately. The magazine business is not what it once was. But I was very pleased to be involved with this.)

Laurentian was a completely different kind of thinking than Cartier. We had to produce a reasonably good size range. I was part of a team; I was in charge of typography, including developing the typefaces, and it was a brilliant team. We produced what, for a few years, turned out to be a remarkable design for *Maclean's*. The magazine has changed considerably over the years, except for the text face—they're still using the text face.

People say, "How do you come up with an idea for a typeface?" Well, it's a job, and like any job, the first thing I want to know is how is it going to be used? Who is going to be using it? Everything. I need to know all of these things. In fact, at *Maclean's* I remember trying to get meetings with editors and various people in the magazine and say, "What ideas have you got? What are you

Rod McDonald examines his award certificate with Robert R. Reid. (Peter Mitham photo)

thinking about? What kind of typeface would you like?" People were humming and hawing and finally I realized I was asking the wrong question because they didn't know. They had no experience of this; no one had ever commissioned a typeface, so they thought *I* was supposed to know. And I needed to know what they needed.

And finally one day, one of the editors, a gruff old guy—like out of the movie *The Front Page*, you could almost see the cigar sticking out of his mouth—he came up and he said, "I don't care what it looks like. I lost 60 words per page in the last redesign. I just want my 60 words back." And I went, "Oh, bingo." That was the best direction I could have got. I knew instantly what I had to do. I had to get his 60 words back. And that led to a number of things.

The standard column in *Maclean's* is fairly narrow, it's a 13-pica column (the average book is about 33 picas), so in order to make that work you need a typeface that is somewhat narrow. The problem is, if you make typefaces too narrow, they're difficult to read. So the trick was to make a typeface that was narrow that didn't look narrow. It had to fit fairly tightly, because again you're always fighting hyphenation and long words and all-justified settings. So you can easily end up with holes in the settings.

And the other thing that I was fighting was the paper. If you hold a magazine in your hands and you look at it and people say, "What colour is that paper?" and you say it's white—well, no, it isn't. In fact, the paper was so bad at *Maclean's* that the design team took to calling it coloured toilet paper. And it wasn't that far off. At one point we went to the editorial board and said we would like to upgrade the paper. We wanted to upgrade it by one grade, and that was going to cost an extra million dollars a year in paper costs. So I knew I had to make a fairly narrow typeface that had to be strong enough on the body that with the paper they were running on these high-speed presses, the letterforms would stand up.

This is the typeface, Laurentian, that I ended up with. If you look at a face like Baskerville, which is one of the great classic book faces, it's too light, it's too wide, the x-height of the lower case letters is too small, and what makes a beautiful book face makes a bad magazine face. Garamond, again, is one of the great

Laurentian Regular
Laurentian Italic
Laurentian Semi Bold
Laurentian Semi Bold Italic
Laurentian Bold
Laurentian Condensed
Laurentian Condensed Semi Bold
Laurentian Condensed Bold
abcdefghijklmn
opqrstuvwxyz
0123456789

Type sample of Laurentian.

typefaces of all time. It's got better weight but it suffers from the same problems as Baskerville does, and part of it is that small x-height. I show Garamond because that is the typeface *Maclean's* was using when we came on board. They never did get it to work, but they had to do tremendous damage to the typeface to try to fit things in, and they still lost 60 words per page. And anyone who has ever worked with an editor knows that 60 words a page is a lot of words.

So I ended up with this. My go-to face for these kinds of projects is Times New Roman, which, although it's much decried today, is still a brilliant typeface and is still one of the typefaces that type designers will go to for good type fitting and strong letterforms. I beat it, not by much, but it was enough. I kept the strength that we needed, and when we finally finished the project, I apparently got that editor 65 words—an extra five words. So, for a brief moment, I was a hero (at least among the editors).

Now, as type designers we think in what we call strings. Typically, we start with a cap *H* and a cap *O*, and quite honestly we just go HOHOHO, and then we deconstruct the *H* to create an *I* and just keep on building up characters. Mathew Carter quite rightly called this the basic DNA—we use the basic DNA of these few characters to build up all the rest of the characters.

We test them in strings, just repeat the combinations forever with every single letter in the alphabet. Type designers never think of one letter, in fact we never think two letters. We always think of three, and the letter we're working on, we're always looking at it between two other letters. That's how letters work, that's how typefaces work. Once we get this and we start to get a sense of the rhythm and the interplay between the characters and how they interact with each other, we can quickly build up a typeface. We do little tricks: the little concavity in the serifs, and the bottom of the *b*, for instance, and the serif at the top of the *N*—those are done for two reasons. One is to take out a little weight so those serifs aren't too heavy, and the other is to bring a little life into the design, because it's very easy for a typeface to become mechanically correct and quite lifeless.

One last thing I wanted to say about Laurentian, and I think it's important, especially for designers. All type designers know this: we work within a range, generally, of 5 percent to 15 percent chance of originality in the typeface. Less than 5 percent originally, you might as well not be doing it, because it won't be noticed. But if you go over 15 percent, unless you're doing a pure display face for graphic display, you go over 15 percent, you're going to jeopardize the design with too much novelty. So it's a very, very narrow band. And a lot of people have trouble with that. They say, "I can't work with that kind of limitation," but with text faces you have to. You have to be a certain kind of person to live with those limitations and work within them.

The other thing, when you're working on a project like a national magazine like *Maclean's*, you really are trying to develop an invisible typeface. It's absolutely paramount, because people say, "Well, it should be elegant, it should be friendlier, it should have all sorts of different things." The problem is, on a magazine like *Maclean's*, you don't know what stories are going to run in any single issue. You can have one of the most horrific stories, which apparently we have a number of nowadays, the most horrific stories you've ever read in your life, and then two pages over, a story on who grew the biggest pumpkin in Simcoe County.

So you have to develop a typeface that's going to work equally well for all of those, whether it's a stupid story or absolutely horrendous.

LARGER FAMILIES IN THE NEW WORLD

This is a typeface that I just finished a few months ago. It just relaunched. It's a little bit like Cartier.

I took three European sans from the early part of the 20th century and reworked them. I released the first part in 2012, which consisted of 14 typefaces in the family; it's now up to 56 fonts in the full family, which is more work than . . . well, I've sort of blocked it out of my mind. But it was an interesting project and actually turned out to be quite important for me.

The original series were those three on the side from the Monotype Corporation, which were the Monotype Grotesques, which were produced in 1926. They were very popular in Europe, very popular in England. Not quite so much in North America, not because of the typefaces but because Monotype really didn't have a lot of equipment sales in North America. North America, traditionally, was Linotype country.

I finally got permission from Monotype to expand this family, and as you can see on the right-hand side, it's greatly expanded. I had a huge amount of work to try to bring an old series, basically a typeface genre, into the 21st century so that it would work digitally. It also works extremely well in print, but my main concern was it had to work digitally. The reason I'm showing you this, I wanted to show you how we create families in today's world.

In the old days when we wanted to create different weights of a typeface, of course, we had to draw them, so there were severe limitations on how many weights you could produce. Typically, foundries would say we'll have three weights or perhaps as many as four, and that was a big deal—four weights. They'd do a light and a regular and a bold and a semi-bold, and that was enough, because these were all drawn by hand.

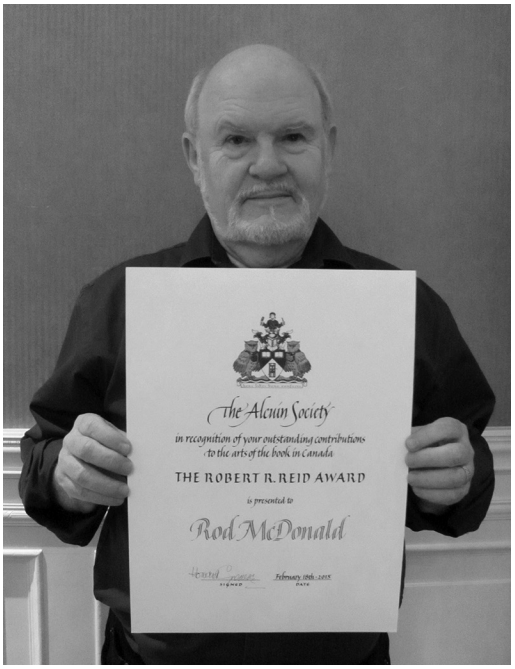
Well, today with the tools that we've got, all of a sudden we're seeing massively expanded typeface families. And there is a need for them even though we often think there isn't. But what we're doing today is we're drawing digitally. For those of you who have ever drawn in Illustrator, you'll know that it's exactly the same process. This is a program called Font Lab. You're drawing each character in its own self, and then they make up the entire font.

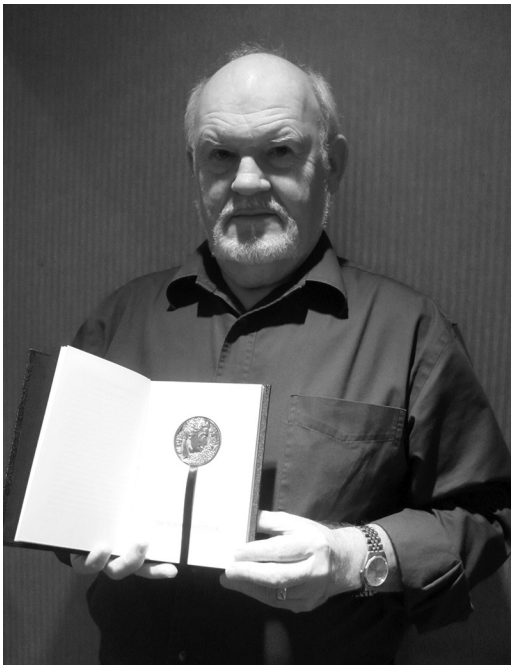
You're dealing with each with control points throughout. You place these control points, and you have arms that allow you to control the shapes of the curves and how they interact. Now, if you draw the light and the extra bold and you're careful to keep the same number of control points in the same relative positions, then the program will interpolate between the light and the extra bold, and what you'll get (in this case) is the halfway point, what I call the semi-bold. Now, I'd like to tell you this works flawlessly. In fact, it doesn't. Yes, you get the semi-bold, but you still have a lot of work to do by hand. But it gets you much further than we ever could in the past. And then once I get this one done, then I can interpolate these two and I can get the bold weight, and because they're much closer in weight they interpolate fairly well, and I have weeks' worth of work instead of months.

So if you ever wonder why today there are so many of these super-large typeface families, this is the reason: we now have the tools to do it. I have resisted this for a long time, because I said these are a lot of weights. Can people manoeuvre? When you open all 56 fonts for Classic Grotesque, you have to scroll through two windows on a laptop. The final fonts were engineered by Linotype in Germany, and I said, "We can't do that." And they said, "It's not a problem, everybody's used to it." So it's the new world, and that gives you a sense of what's going on today.

And of course, nowadays you have to make compressed for most faces: advertising agencies, graphic designers, even Andrew Steeves at Gaspereau Press. I just got a prospectus for a new book he's working on, and the whole thing is set in Classic Grotesqu Compressed. And then of course you need a condensed and nowadays even an extended—a wider version of the typeface. So the typographic palette is opening up considerably. Fifty-six fonts for a family is a huge undertaking.

While I was wrapping this up, Robert Slimbach at Adobe came up with 90 weights. There's now 112. I think it has to level off at some





Rod McDonald with the Robert R. Reid Award. (*Peter Mitham photos*)

point. I can't be the only one who's going to look at this and say, "I can't handle this. It's too much." Anyways, this is what we're dealing with, and at some point I think it will slow down a little bit.

MULTIPURPOSE ENGINEERING

So that's my brief overview of what a type designer does. Most of us are problem-solvers. If a book designer comes to us and says, "Look, we need a typeface for a book," we want to know what are the specifics, what are you trying to do. If a magazine comes to us, we need to know everything. Generally speaking, I find we do that, and Laurentian is a good example. When I finished Laurentian I said to everyone, and I firmly believe this, "It's not a good book face. It's a good magazine face, but it's not a good book face." And two friends of mine, Stan Bevington of Coach House and Andrew Steeves at Gaspereau Press, both said, "Oh no, no, you're wrong." And they both started using it for books. And they were right.

Stan told me a story a few years ago that gives you an idea of what it means to engineer something the way that Laurentian was engineered. He did a big project for a major institution—I think it was in Ottawa. It was quite a few volumes; I forget the size, I can't even remember the name of the organization. Stan said he knew he was going to use a lot of paper, and he was trying to cut back on the amount of paper they were using. He used Minion from Adobe, which is traditionally one of the space-saving typefaces of all time. It was still coming in large, and one afternoon he just swapped in Laurentian over Minion, and he said without doing anything he saved 30 pages. It has turned out to be a good book face. I've seen it used by graphic designers on projects.

But you know, Times New Roman was designed for one specific purpose: it was designed as a newspaper face for *The Times* newspaper in London. It's no longer used as a newspaper face, but it's used for everything else. I've learned that if you design accurately for one thing, it usually works in other areas.

Rod McDonald lives in Lake Echo, Nova Scotia. He received the Society's 2015 Robert R. Reid Medal for Lifetime Achievement in the Book Arts. This transcript of his talk was prepared by Wendy Massing; edited and abridged by Peter Mitham.