

## Bilingualism and the size of paper

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**W**hen I moved from Europe to Canada in 1990, I was suddenly forced to become bilingual. No, I am not talking about that bilingualism: French is my mother tongue and I spoke passable English before coming to this country. The bilingualism I was not prepared for, however, was to use *pounds, inches* and *Fahrenheit* along with kilograms, centimetres and Celsius, on an almost daily basis.

Of course, Canada officially adopted the metric system back in 1970, and for the most part engineers seem to adhere to it. But in everyday life, imperial units still enjoy wide usage. For example, going to the local hardware store and asking for two and half metres of chicken wire invariably leaves the clerk somewhat bewildered: now, how many feet can that be? Similarly, asking someone's height or weight rarely draws a response in metric, and it took me three children to figure out that 98F is about normal body temperature (37C) and that 104F is indeed a high fever, roughly equivalent to 40C. This ambivalence about the use of metric is partly a remnant of past practices. It is also attributable to the influence of our powerful neighbour to the south, which to this day remains one of the only countries in the world not to have adopted the metric system. I have often felt that Canada is, by culture, heritage and political tradition, somewhat between Europe and the United States; the use of dual units can be viewed as a fine reflection of our Canadian identity.

Another way in which metric has not established itself in Canada is the size of sheets of paper. Upon my arrival I had to become accustomed to *letter* being the size of ordinary sheets of paper, and that is of course best expressed in inches as

8 1/2 x 11. There is also that funny format, *legal*, which is 8 1/2 x 14. Back in Europe everybody uses A4, which is 210 x 297 mm. The difference between *letter* and A4 is small, but noticeable: A4 is taller by 17.6 mm, or 11/16", and *letter* is slightly wider by 5.9 mm, or 1/4". The fun begins when one tries to mix and match the two sizes. In the 10 years that I have been in Canada, I have accumulated recipes from both my old and my new country. In the stack, those sent by mother, including her delicious *pâté de lapin*, literally stand out; by comparison, the other ones seem, well, too fat. In the realm of engineering, those of us who exchange documents with colleagues in Europe face the same problem; and when we trade documents in electronic format, switching back and forth between the two sizes leaves us regularly with the nightmare of page breaks going astray and figures becoming out of place.

Why the different formats? The reason behind A4 becomes apparent when one tries to enlarge to or reduce from the next size in the series, dubbed A3, which is simply two A4 sheets joined together (297 x 420 mm). Put an A3 sheet in a copier, reduce it by the appropriate factor, and it fits perfectly into A4. Try the same with an 11 x 17 sheet of paper, and it does not reduce properly to 8 1/2 x 11. Why? Very simply, if  $h$  is the height of the sheet of paper and  $w$  its width, it will scale up properly to a sheet of width  $h$  and height  $2w$  only if the sides are in the same ratio, that is,  $h/w = 2w/h$ ; in other words, the height has to be equal to the width times the square root of two. This relationship holds for A4; it does not hold for 8 1/2 x 11, hence the problem when trying to reduce from 11 x 17. Continue scaling A4 up several times and you reach A0 (841 x 1189 mm); the area covered by such a sheet happens to be exactly one square metre. In other words, A0 is a *metric* sheet of paper, the dimensions of

which are in a ratio suitable for easy enlargement and reduction.

The whole A series of paper sizes is derived from A0 by successive halving, and is therefore intimately linked to the metric system. Since 1975, this series is embodied into an international standard, ISO 216, which is now in use in nearly all industrialized nations, with the exception of Canada and the U.S.

Switching from *letter* to A4 for our ordinary size of paper would entail both human and technological factors, but would actually be simpler than many fear. I remember going through a similar transition when I was in junior high school. Back then, the size of our common sheets of paper was 210 x 270 mm. As school resumed one September, we were told to use A4. The first day we found the new format ugly and cumbersome. By the end of the week it was still bothering us. Three weeks later we were not even paying attention to it. In today's France, nobody in their right mind would want to use anything but A4; people have quickly grown

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