

How the Leap Year that Wasn't Was by Dennis Payton Knight

I've been thinking about days gone by, not in nostalgia, but musing about the way we keep the sequence of days straight. Interestingly, I found that today, September 14th, is appropriate to write on the topic because it's the anniversary of the date in 1752 that the British Empire, to which we were then subject, adopted the Gregorian Calendar, invented by Pope Gregory centuries before the English, and we finally put it in use.

That brought me to thinking about a peculiar twist in the rules of how we account for and schedule time days, weeks, and years. I thought about it because it typically takes us not 365, but 365-1/4 days to make a lap around the sun, and every fourth year we add an extra day, a 29th day in February, to account for the accumulated fractions.

Those years, always divisible by four, are called leap years. But there is an exception to the rule-of-four that few people know about: if a particular year is not only evenly divisible by four but also evenly by a hundred, then it isn't a leap year after all. That's because years aren't precisely 365-1/4 days, but a smidgen shorter, so every 100 years we leap over leap year. For instance, the year 1900 was not a leap year. If you are beginning to wonder about old Gregory's fallibility, you have company.

All this is to set the foundation to tell about the day I thought I had a gotcha moment on the watch makers. It was sometime in the early 1980's, and I was mesmerized with my first digital watch, a Casio, an electronic hourglass to digitize and track into infinity the sands of time.

That I could wear eternity on my wrist impelled me to spend some of it. I scrolled ahead to see if programmers had inserted a February 29th 2000, a year divisible by 100, which meant, like 1900, it wouldn't be a leap year after all. But they they put a February 29 in the year 2000 anyway, and I set about to tell them their goof.

I stumped two reps who knew the rule-of-100 but couldn't explain why it wasn't followed. One eventually called to say that February 29th, 2000, would go on by governmental decree despite the rule, probably to save folks and digital watch makers undue anguish. The answer was unlikely but I put it aside until today when I found an explanation that does not blame the bureaucrats.

Here's the deal: the divisible-by-100 exception to the divisible-by-4 rule is superseded by a divisible-by-400 exception-to-the-exception. That is because the quarter-day that is shorter than a quarter by a smidgen, creating the exception-of-100 rule, is actually longer than the first smidgen by yet even smaller smidgen, and thus they came up with an exception-of-400 rule to the-exception-of-100 rule.

And that's how the leap year that wasn't was. It's all a game of chronological leapfrog.