It's about time

What time is it? If someone asks, I know. If someone asks what time is, I know not. Such is the paradox of time. Yet because of our compulsive need for order and definition, man has developed a magnificent system for measuring and marking the passage of this inexplicable commodity.

Until the nineteenth century, most communities used local (solar) time. As the sun passed overhead, all watches and clocks in a given locale were set to noon.

As railroads began to connect different places, it became obvious that some standardization of time was needed to avoid chaos. By 1870, each U.S. railroad had developed a time system of its own. But because several railroads could meet in a single city, the people there had to contend with numerous railroad times in addition to their own local time. By 1883, U.S. railroads operated with 53 different time standards.

An international conference convened in Washington, D.C., in 1884 to standardize time. It was agreed that the meridian passing through the Royal Observatory at Greenwich, England, would become the world’s prime meridian. Greenwich was the logical choice because, at that time, 72 percent of the world’s mariners used charts displaying this line of longitude.

The world was then divided into 24 time zones, each being 15 degrees of longitude wide. The first zone east of Greenwich was zone A; the second, zone B; and so on. The time zone straddling the Greenwich meridian is zone Z, which is why Greenwich Mean Time (GMT) is called Zulu time. When the previous phonetic alphabet (Able, Baker, Charlie, etc.) was used, GMT was called Zebra time.

In reality, there are 25 time zones: 23 15-degree zones and two half-zones, one on each side of the International Date Line. Local standard time in the Eastern U.S. time zone is Romeo time. Central, Mountain, and Pacific times are called Sierra, Tango, and Uniform time, respectively.

In the United States we convert local time to GMT by adding a given number of hours. But not all places are an exact number of hours east or west of Greenwich. The local time in India, for example, is Zulu plus five hours, 30 minutes. Liberian time used to be Zulu minus 44 minutes, 30 seconds.

Everyone knows that a sufficiently fast airplane can take off after sunset, head west, and cause the sun to rise in the west. This occurs because the airplane is girdling the globe faster than the Earth is rotating. The amount of available daylight increases when flying west and decreases when heading east.

Because each time zone is 15 degrees wide, logic tells us that each degree of change in longitude represents four minutes of time. So a westbound pilot who crosses 10 degrees of longitude, for example, increases available daylight by 40 minutes. Conversely, an eastbound pilot who crosses 20 degrees of longitude during a cross-country flight loses 80 minutes of daylight.

Although the lights and pollution of nearby London make the old Royal Observatory unsuitable for modern astronomers, everything there has been kept intact for visitors. Perhaps most interesting is the brass stripe cutting across the stone courtyard and terminating at the Meridian Building. This represents the Greenwich meridian. Here is where east meets west and where one can stand astride the world’s prime meridian with a foot in each hemisphere.

Fascinating also is the Greenwich Time Ball, the world’s first time signal. At 12:55 p.m. every day since 1883, this large red ball is hoisted up a mast on a turret of the observatory. The beginning of its descent signifies that it is exactly 1300 GMT, which is now referred to as Coordinated Universal Time and is abbreviated as UTC.

The time ball was an invaluable aid to those navigating the Thames, because it enabled them to update their relatively crude chronometers. Today, the time ball is dropped to preserve tradition.

During a recent visit to Greenwich, I was approached by an elderly, bespectacled docent who asked, “Sir, do you know what time it is in Greenwich when it is Sunday all over the world?”

The challenge caught me off guard. “Why, no, I don’t,” I said.

“It is exactly noon. And consider this, sir. It is one day throughout the entire world for only an instant.”

After thinking about that for a while, I nodded in agreement.

The old man posed another riddle. “Now tell me, sir. When a given day is first born on Earth, how long will it last?”

“That’s easy. Twenty-four hours,” I said.

“No, sir. Every day survives for 48 hours. You think about that.”

He seemed pleased with my appearance of confusion, pulled out an ancient pipe, lit it, and walked slowly away, circles of smoke rising lazily above his head.

Moments later, I smiled, too. The old man was right.

Visit the author’s Web site (www.barryschiff.com).