

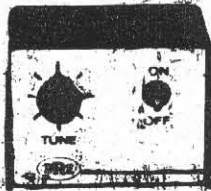
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What Time Is It? (or, Happy Centennial, Greenwich!)

By Don Schimmel

This month marks the 100th anniversary of the adoption of the Greenwich meridian as the official zero longitude of the world. The agreement to do this was reached on 13 October 1884 at an international conference in Washington, DC when 22 countries accepted/approved the proposal.

At the conference France did not vote agreement with the other countries and for years, up until 1978, had its own time standard which was named Paris mean time.

Because of the difference in location between Paris and Greenwich, the time differed by 9 minutes, 21 seconds longitude which represented a time difference of 1/5th second from the Greenwich mean time (GMT).

When the sun crosses the Greenwich meridian it is noon there, while west of the meridian it is morning or A.M. (ante meridiem [before midday]) and it is P.M. (post meridiem [after midday]) east of the Greenwich meridian.

The 180 degree meridian on the opposite side of the

earth forms the International Date Line and passing over it will result in losing or gaining a day depending upon the direction travelled.

Each hour the sun passes over a 15 degree section of the globe, so in 24 hours the entire globe (360 degrees) has been cir-

cumnavigated. Each of these 15 degree sections represents one of the 24 international standard time zones.

Time zone lines do not follow exactly the meridian lines but rather an irregular path following various national and state boundaries (See map).

There is a time difference of four minutes for each degree of longitude crossed by the sun (4 minutes x 15 degrees = 60 minute-degrees, or one time zone hour).

Here in the United States, Standard Time has been used since 1883 when a general time convention was adopted by the railroads. Standard time was made official by Congress in 1918 with the passage of the Standard Time Act. In late Spring, Daylight Saving Time comes into effect and clocks are turned back one hour. In the fall they are again returned to normal standard time for the particular U.S. time zone.

There are actually only four days per year that the noon sun is on time with the clock noon. Thus, days based on sun time are not equally long from noon one day to noon the next day. This is a result of the earth moving faster along its orbit when near to the sun and moving slower when farther away. Also the sun does not follow an exact east path but rather follows a slanting one.

These discrepancies make it necessary to figure the average length of days, hours, minutes and seconds. Clocks running at a constant rate can maintain such values and the time based on the averages is called mean

time.

If, on the other hand, we had our timepieces running per the apparent time we should have to compensate for the difference by resetting the clock almost daily.

Accurate time signals may be observed on 2.5, 5, 10, 15 and 20 MHz; these are the frequencies utilized by the transmitting stations operated by the U.S. National Bureau of Standards.

One is located at Ft. Collins, Colorado and is identified by the callsign WWV. The other is located at Kakaha, Maui in the Hawaiian Islands and it has been assigned callsign WWVH.

To distinguish which station you are listening to, a male voice is used for WWV while a female voice is used for WWVH.

The time announcements given by WWV and WWVH are identified as "Universal Coordinated Time" and this coincides with the Greenwich zone time.

In addition to the time signals the broadcasts provide standard audio tones, radio propagation information and precise frequency references.

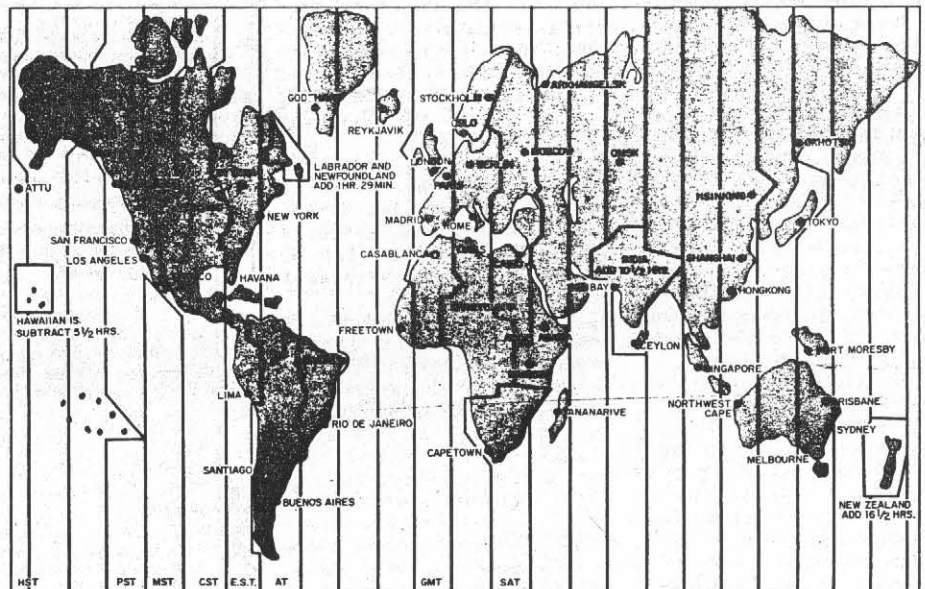
Canada's Dominion Observatory in Ottawa operates a similar service on 3330, 7335 and 14670 kHz using the callsign CHU.

Throughout the world there are numerous time signal broadcasts so even though it is not possible to hear WWV or CHU you should be able to hear a time signal sponsored by another country.

☆☆☆☆☆☆☆☆☆☆

SAY YOU SAW IT IN MT!

☆☆☆☆☆☆☆☆☆☆



Subtract 5 HRS. 4 HRS. 3 HRS. 2 HRS. 1 HR. ADD 1 HR. 2 HRS. 3 HRS. 4 HRS. 5 HRS. 6 HRS. 7 HRS. 8 HRS. 9 HRS. 10 HRS. 11 HRS. 12 HRS. 13 HRS. 14 HRS. 15 HRS. 16 HRS. 17 HRS. FOR DAYLIGHT SAVING, SUBTRACT 1 HOUR