

Handout PS111 – “Time Zones”

Standard Time

- established for US in November 1883 and soon adopted by other countries.
- based on the position of the noon day sun, but only at selected meridians of longitude rather than at each specific site.
- the earth rotates 15° in 1 hr., the standard time zones differ by exactly one hour intervals (24 time zones)
- The meridians used as the centers of their respective time zones are multiples of 15° .
- The Greenwich meridian is reference for the other time zones. Times based on this system is called GMT (Greenwich Mean Time)
- Considerable liberty has been taken in placement of the time zone boundaries, generally are drawn along state lines.
- going East every 15° is one hour later
- going west every 15° is one hour earlier

International date line

- unique line in the world standard time system. (180° meridian)
- Crossing the *International date line* the time changes by 24 hours.
- The time change is opposite to all those established by the 24-hr time zone boundaries
 - Going E \rightarrow W - 1 day later
 - Going W \rightarrow E - 1 day earlier
- The International Date Line counterbalances the changes in time produced by the time zone boundaries.

If no date line with standard time

If you traveled the world in a westward direction in a 24-hr period, you would cross 24 time zones and the time would be set back by 24-hrs. Thus when you arrived back at your starting point it would be the same time as when you left.

Problem: 1: If it was 10 p.m., Sunday at 135° W, what are the time and day at that same instant at 15° W?

Analysis:

Going 135° W to 15° W, we are traveling _____

Time is _____

Time: _____ day: _____

Problem 2: If it 9 a.m., Tuesday, at 105° E what are the time and day at that same instant at 150° W?

Analysis:

Going 105° E to 150° W, we are traveling _____

Time is _____

Since the two given longitudes are in *different longitudinal hemispheres*, their total longitudinal separation is calculated by adding the two numbers.

Time: _____ day: _____

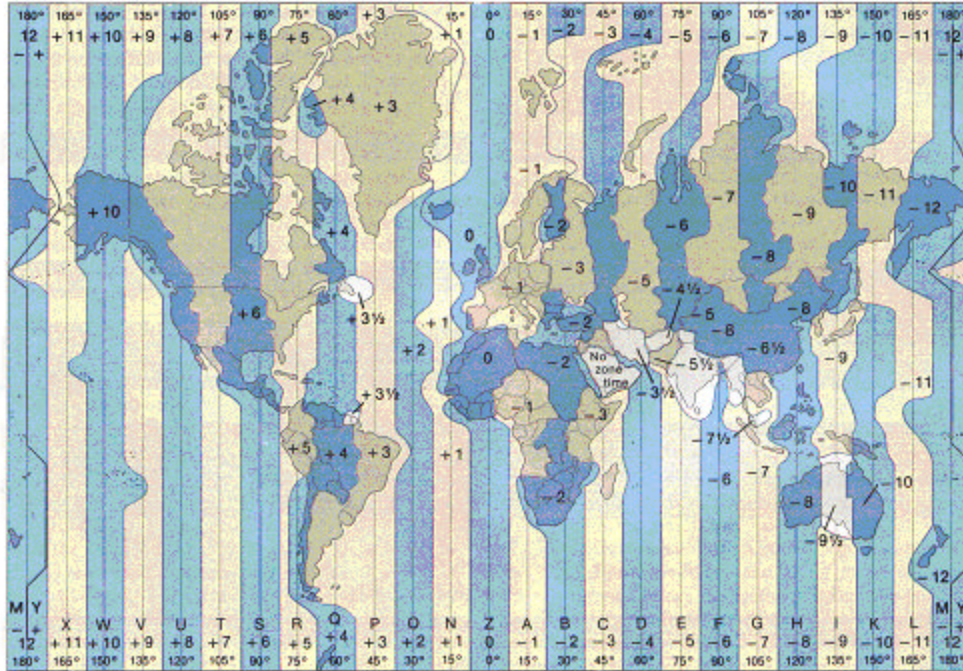
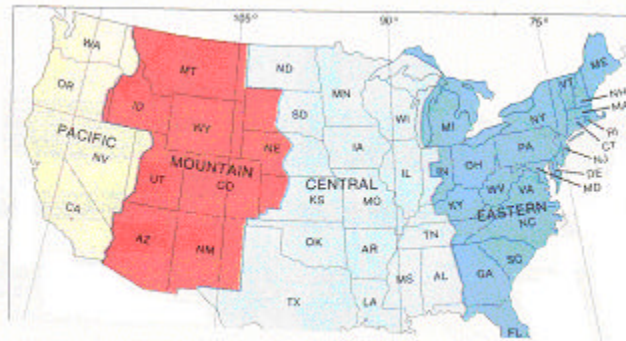


Figure 2.10 The global system of time zones.

*R.C. Scott, "Physical Geography", West Publishing Co., 1989, pg. 21.

Figure 2.11 The standard time zones of the coterminous United States.



R.C. Scott, "Physical Geography", West Publishing Co., 1989, pg. 22.