

Time Zones

Standard Time

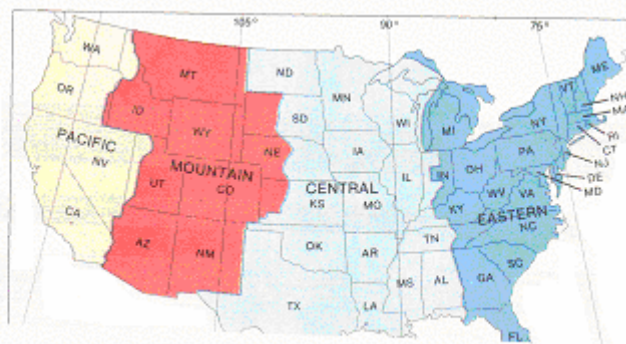
- ✦ established for the United States in November 1883 and soon adopted by other countries
- ✦ based on the position of the noon day sun, but only at selected meridians of longitude rather than at each specific site
- ✦ the earth rotates 15° in one hour, the standard time zones differ by exactly one hour intervals
- ✦ there are 24 time zones ($24 \times 15^\circ = 360^\circ$)
- ✦ the meridians used as the centers of their respective time zones are multiples of 15°
- ✦ the Greenwich meridian is the reference for 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 they 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 East to West \rightarrow 1 day later
 - Going West to East \rightarrow 1 day earlier
- ✦ The International Date Line counterbalances the changes in time produced by the time zone boundaries.

If there was 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 you starting point it would be the same time as when you left.

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



Problems

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

Analysis:

Going 135° W to 15° W are we traveling east or west?

Time: _____ day: _____

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

Analysis:

Going 105° W to 150° W are we traveling east or west?

Time: _____ day: _____

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

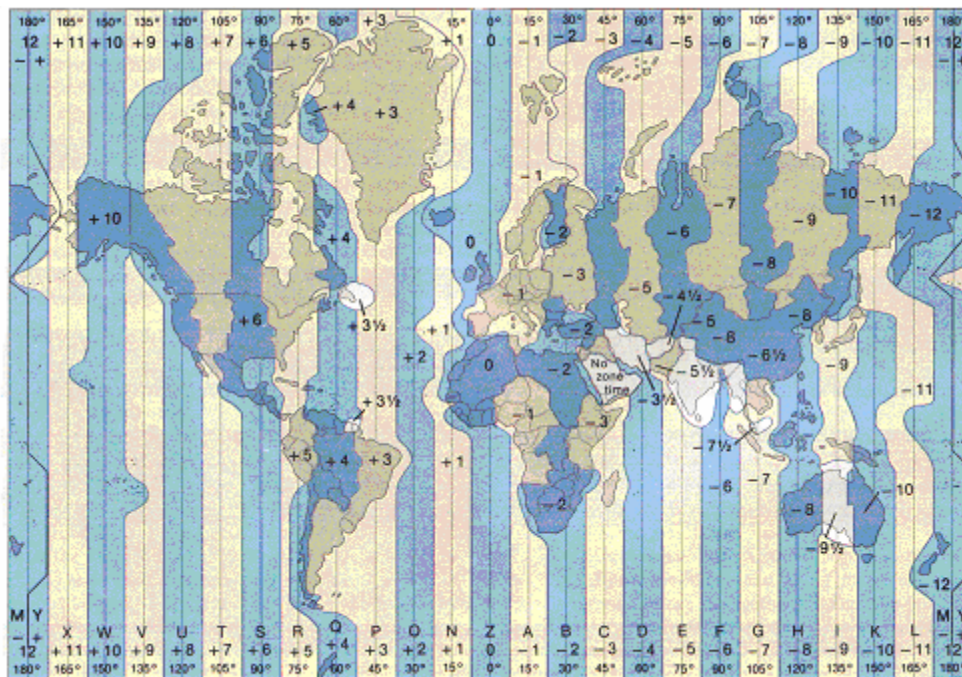


Figure 2.10 The global system of time zones.

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