RK110415

Update and Errata Sheet:
Weather 2012 Student Manual and Instructor CD

These corrections apply to the Revised 2012 Edition of the USPS Weather Course manual and the Instructor CD. There are a very small number of substantive matters that should be clarified, refined or corrected. They have been identified with a bold asterisk [*]. The rest are typographical or formatting errors. An errata sheet has not been furnished with the manual or the CD. Instructors should deal with the updates and errata as they see fit.

Chapter 1

- Page 3 paragraph 10
  In the second sentence replace "The figure below" with "The Lapse Rates figure on the previous page"
- Page 12 Paragraph 59 *
  In the first sentence replace "negative" with "cooling"

Chapter 2:

- Slide 9 – European Exporers
  Title should read "European Explorers"

Chapter 3:

- Relative Humidity Table Page 60
  When the air temperature is 65° and the depression of the wet bulb is 17° the relative humidity is 24% – not 224%

Chapter 4:

Environmental Lapse Rates *

The international meteorological convention is to define the Environmental Lapse Rate as the rate at which the temperature of the atmosphere decreases as altitude increases – a positive number indicates a decrease in temperature.

- Page 66 Paragraph 16
  Replace the third and fourth sentences in the first bullet (*Environmental Lapse Rate)* with the following:
  "On average, the atmosphere cools 3.5°F per 1000 feet increase in altitude – the average Environmental Lapse Rate. Only when there is a temperature inversion (the most stable condition) does the atmosphere warm with height."
- Page 68 Paragraph 25
  In the first sentence delete "negative".
  In second sentence delete the parenthetical phrase "(a positive environmental lapse rate)".
- Page 69 Paragraph 30
  In the fifth sentence replace "becomes more strongly negative" with "increases".

- Slide 14 - Environmental Lapse rate
  Replace the second major bullet and its two sub-bullets with two major bullets:
  - The air cools with increasing altitude at an average rate of 3.5^0 F per 1000 ft.
  - If there is a temperature inversion, the air warms with altitude.

  In the slide notes: replace "negative" with "cooling"; and delete "The average rate is negative because"
- Slide 21 – Absolute Stability
  In the slide notes: In the fourth bullet delete "negative"; and in the fifth bullet delete the parenthetical phrase "(a positive environmental lapse rate)".
- Slide 25 – PM Instability
  In the slide notes: in the first bullet replace "becomes more strongly negative" with "increases'.
- Slide 16 – Dry Adiabatic Lapse Rate
  In the slide notes delete the last bullet.

Other:

- Slide 45 – Cloud Drop & Rain Drop
  In the slide notes, in the third bullet replace "rain drop (2.00mm)" with "typical rain drop (1.00mm)".
- Page 80 Ques.6
  While Paragraph 14 refers to Surface Convergence, it does not completely describe its effects. Surface Convergence causes air to rise and rising air can trigger instability, clouds, and precipitation. The correct answer is "a".
  The same comment applies to the same question 6 in Appendix B (page 224).

Chapter 5:

- Page 88 Paragraph 20
  In the second sentence insert a period after the last word "develop".
- Page 93 Paragraph 34
  In the last sentence insert "Earth" before surface.
- Page 98 Paragraph 56*
  In the second sentence insert "usually" before "results".
  In the fourth sentence replace "may occur in fair or foul weather" with "usually occurs in fair weather".
- Page 98 Paragraph 59
  In the first sentence insert a period after the last word "dangerous".
- Page 100 Paragraph 68 *
  In the third sentence replace "18,000 miles " with "18 miles".
- Page 101 Paragraph 69
  Under the Red/Orange bullet in the second sentence replace "while" with "white".

- Blue Skies Figure Page 101:
  The last line of the text for note 6 was partially cut off. It should be "...of the sky."
- Page 108 Ques. 26*
  In answer a) replace "may occur in fair or foul weather." with "usually occurs in fair weather."
  The same comment applies to the same question 26 in Appendix B (page 229).

Chapter 6:

Jet Streak *

A Jet Streak is a segment of the Jet Stream that has relatively high winds. While the wind speed within the core of a Jet Streak is very high (e.g., 160 knots), the Jet Streak itself moves at a much lower speed (e.g., 25 knots). Because the air speeds up as it approaches the core and slows down as it leaves it, Jet Streaks cause upper-air divergence and convergence.

- Page 121 Paragraph 80
  In the second sentence replace ""the jet stream that" with "which the wind can"
- Page 122 Paragraph 85
  In the first sentence replace "A Polar Jet Streak moving faster than the airflow in which it is imbedded" with "Because the air within the core of a Polar Jet Streak moves faster than the air within the rest of the Polar Jet Stream, the Polar Jet Streak".
- Slide 43 – Aloft & Surface Convergence/Divergence
  In the first bullet replace "A Polar Jet Streak moving faster than the airflow in which it is imbedded" with "Because the air within the core of a Polar Jet Streak moves faster than the air within the rest of the Polar Jet Stream, the Polar Jet Streak".

Other

- Page 119 Paragraph 66:
  The last sentence should read, "The backing of the wind...."
- Page 120 Paragraph 78
  In the first sentence replace "low pressure lows" with "surface lows".
- Slide 22 – North of the Low
  In the slide notes, in the first bullet delete "at the surface".
- Slide 50 – Zonal and Meridional Flow
  In the slide notes, in the first bullet replace "county" with "country".

Chapter 7:

- Page 135 – Tropical Storms/Hurricaner illustration
  In title, replace "Hurricaner" with Hurricanes"
- Page 153 Ques. 10
  In the second sentence replace "slowing" with "slowly".
  The same comment applies to the same question 10 in Appendix B (page 236).

- Slide 30 – Tropical Storms and Hurricane 2 Sept 2010
  In the slide notes in the title replace "20105" with "2010"
- Slide 32 – Saffir-Simpson Hurricane Wind Scale
  In the last bullet replace "hurrifanes" with "hurricanes".

Chapter 8:

General

- Page 160 Paragraph 38
- In the first sentence replace "showing" with "show".
- Page 163 Paragraph 41a – 4th Bullet 500 mb Chart *
  In the 2nd sentence replace "east to west" with "west to east".
- Slide 9 – Weather Satellites – GOES
- In the slide notes, replace "'s" with "instructor".

NWS Weather Page *

Pages 164 to 169

Since the publication of the manual the NWS has changed its National Weather Page – the main portal into all of its data and forecasts. As result the image on page 165 is no longer current and the paths from the page to various NWS weather products is slightly different. Use these new paths instead of those described in the text:

Marine Zone Forecasts (MA & RI)

Marine Forecast Offices and Centers

- NOAA/NWS Weather Page [www.weather.gov]
  Path: Forecast / Marine / Map (to enlarge it) / WFO (Boston) / Zone
- NOAA/NWS Weather Page [www.weather.gov]
  Path: Map Area (Boston Coastal Region) / Zone

Point Forecasts

Local Weather Forecast Offices (WFO's)

- NOAA/NWS Weather Page [www.weather.gov]
  Fill in City, State or Zip Code
- To change area of Point Forecast on map click
  - Over land – to get regular Point Forecast
  - Over water – to get Marine Point Forecast

METAR Reports

Aviation Weather Center Reports (hourly)

- NOAA/NWS Weather Page [www.weather.gov]
  Path: Forecast / Aviation/ METARS / select decoded / click on map (station)

Hurricane and Tropical Storm Forecasts

National Hurricane Center

- NOAA/NWS Weather Page [www.weather.gov]
  Path: Forecast / Hurricanes / Atlantic

Surface Weather Maps

National Centers for Environmental Prediction

- NOAA/NWS Weather Page [www.weather.gov]
  Path: Forecast Maps

Upper Air Charts

Storm Prediction Center

- NOAA/NWS Weather Page [www.weather.gov]
  Path: Forecast / Severe Weather / Forecast Tools / Upper Air Maps / Map Level & Time

Aviation Weather Center

- NOAA/NWS Weather Page [www.weather.gov]
  Path: Forecast / Aviation/ Forecasts / Wind-Temp / Wind-Temp Plots Map / enter Wind Speed; Vertical Level; Time

Ocean Prediction Center (500 mb)

- NOAA/NWS Weather Page [www.weather.gov]
  Path: Forecast / Marine / Map (to enlarge it) / OPC / Atlantic

Sounding Analysis

Storm Prediction Center

- NOAA/NWS Weather Page [www.weather.gov]
  Path: Forecast / Severe Weather / Forecast Tools / Observed Sounding Analysis / Map / Bigger Map / Location (Chatham – CHH)

Appendix A

Add the following definitions to the Weather Glossary:

- **Bergeron Process** The process by which ice crystals in a cloud grow at the expense of supercooled liquid water droplets.
- **shelf cloud** A low, horizontal wedge-shaped cloud attached to the parent cloud. It is associated with a thunderstorm gust front (or sometimes with a cold front). The shelf cloud should not be confused with a roll cloud – a cloud that is not attached to a parent cloud.
- **wall cloud** A cloud ranging from a fraction of a mile to nearly five miles in diameter that lowers from the base of a parent cloud. If the wall cloud rotates it is considered a precursor of tornadoes.

Replace the existing definition with the following new definition for the following term:

- **roll cloud** A low, horizontal tube-shaped cloud associated with a thunderstorm gust front (or sometimes with a cold front). Roll clouds are relatively rare; they are completely detached from the thunderstorm base or other cloud features, thus differentiating them from the more familiar shelf clouds.