

**This is information on Altitude Rings is from my Weather-Radar Training.**

**To get started, set up your speakers or your earphones. Start the “Slideshow” either by using the icon in the bottom right corner, or the tab above, and you will hear audio on each slide--except for this one. Use your page-up and page-down keys to move through the slides. You may also use the buttons in the bottom right corner. Enjoy!**

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Staff Engineer**



# Altitude Rings

You may have heard of, or seen, an altitude ring on a radar.

It is fairly common observation, and it **does not** indicate a problem with the radar system.

Let's take a look at one and see how it happens.



## Altitude Rings



Here is a typical “altitude ring” in a jet at 41,820 feet with the antenna pointed up +15 degrees. The aircraft is a Falcon 900EX jet operating a Primus 880 radar with an 18-inch antenna.



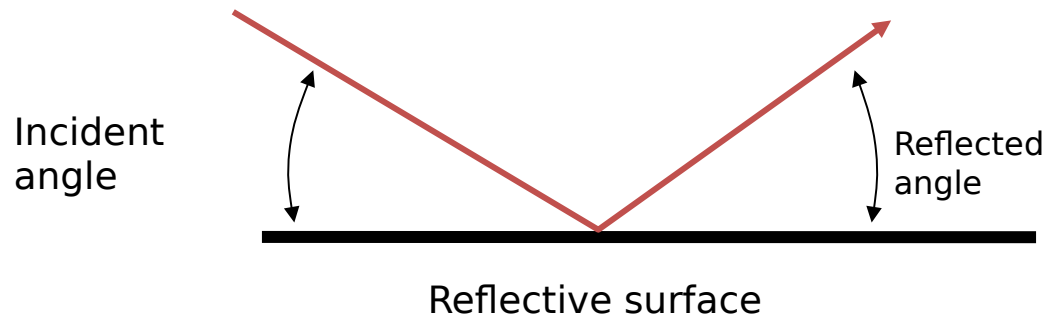
Notice the “altitude ring” is located at about 7 NM. The aircraft is 6.9 NM above the ground.

# Altitude Rings



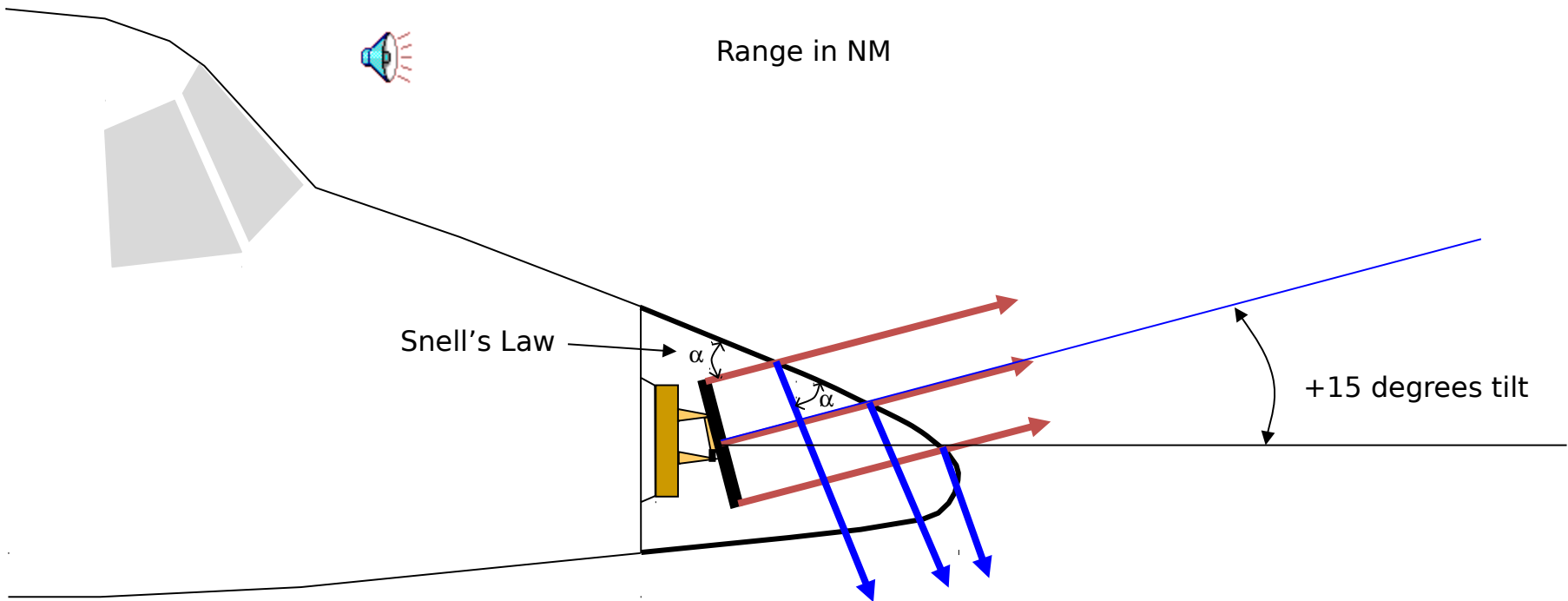
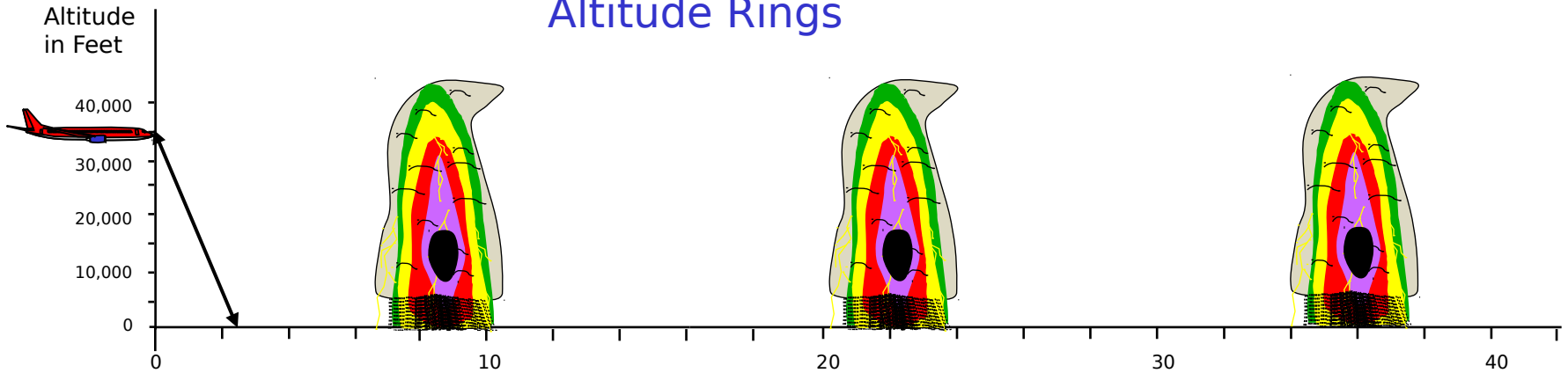
Snell's Law:

If electromagnetic radiation is directed toward a flat-reflective surface, the **incident angle** of the energy will be **equal** to the **reflected angle** of the energy.



The next slide demonstrates that situation:

# Altitude Rings



The energy will travel almost straight down to the earth and back. This is not a radar problem. It's just an annoyance.