FM Radio Stations

Have you ever searched for a radio station with a dial or search button on a radio? Were you surprised at how many stations you passed? If you live in a large city, there were probably lots of stations to choose from. How do you suppose all those radio stations stay separated from one another? The answer lies in the rules created by the Federal Communication Commission (FCC).

**Interference**

You have learned that FM radio waves have a variety of frequency carrier waves. If two radio stations broadcast on the same frequency, they would interfere with each other. The interference would make it impossible to hear either station very well. The FCC, therefore, made rules that radio stations must follow.

**Airplane Safety**

One of the first rules is that no one can broadcast above 107.9 MHz. This is because airplanes communicate with the ground and each other on these frequencies. If a radio station's carrier wave were to interfere with instructions from a control tower to an airplane, lives could be put at risk.

1. What do the letters FCC stand for?

2. Why is it illegal for a radio station to broadcast above 107.9 MHz?

3. Why is it illegal to broadcast below 88.1 MHz?

4. What is the exception for broadcasting below 88.1 MHz?

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**The Lower End**

The lower end of the FCC scale for radios is 88.1 MHz. Below this is reserved for television stations. Radio waves would interfere with television waves, hampering communications. However, the FCC will allow radio broadcasts to produce transmissions lower than 88.1 MHz if the carrier wave does not go farther than about 60 meters.

**What about radio antennas?**

Antennas pick up radio frequencies and reamplify them to provide strength for traveling longer distances. The FCC has strict regulations on where a radio station can place an antenna. There are so many EMF waves with antennas that they cannot be too near homes or other buildings. They must be at least 3 to 16 km from the transmitter site. Obviously you would not want to put an antenna in a valley where it could not receive the radio waves. However, putting it high on a hilltop requires special permission to make sure it is not in the path of airplanes.