July 23, 2025

Why AM Reception Can Get Worse in the Summer – And Tips on What to Do About It

If your AM radio reception seems worse in the summer, you're not imagining things. Between long daylight hours, more interference, and changing atmospheric conditions, summer can throw a wrench into even the best listening setups.

Whether you're parked at a rest stop trying to catch your favorite talk show, listening in bed at home, or sitting in your garage workshop with the radio on, those familiar fades and static bursts might be showing up more often.

Here's why that happens – and what you can do about it.

☀️ 1. Longer Days, Weaker Signals

AM signals reach your radio in two main ways: **groundwave** and **skywave**. Here's the quick breakdown:

- **Groundwave** signals travel along the Earth's surface. These are what you pick up from local stations during the day.
- **Skywave** signals bounce off a layer of the atmosphere called the **ionosphere**. These signals allow you to hear distant stations – hundreds or even thousands of miles away – *but it's much better after dark.*

During the summer, we have more daylight and more solar radiation hitting the ionosphere. That extra sunlight **prevents skywave signals from reflecting back down to Earth**, meaning long-distance AM stations either fade out early or don't come in at all until very late.

🛠️ What you can do:

- Listen later at night, after the ionosphere has settled.
- Focus on strong local stations during daylight hours, especially those with good groundwave coverage.
- Make sure your radio is well-positioned and designed for AM performance (not all are).
- Consider purchasing an external antenna or you can build your own AM loop antenna for free

3. What About Line of Sight?

We often get asked: *Is line of sight important for AM?*

Here's the short answer: **Not really.**

"**Line of sight**" is how **high-frequency signals** (like FM, Wi-Fi, and TV) travel. These signals move in straight lines and are easily blocked by terrain, buildings, or trees. That's why your Wi-Fi cuts out behind a thick wall, or your FM station drops when you go behind a mountain.

AM signals, on the other hand, are low frequency and travel differently:

- **They hug the ground** (groundwave) and **bounce off the sky** (skywave).
- They're **not limited to straight-line paths** and often **go around obstacles** instead of needing a clear shot.

📶 Signal Travel Comparison:

Signal Type	Frequency	Travel Type	Line of Sight Needed?	Range Potential
AM Radio	530–1700 kHz	Groundwave & Skywave	□ No	Up to 1000+ miles at night
FM Radio	88–108 MHz	Line of Sight	□ Yes	30–100 miles
Wi-Fi	2.4–5 GHz	Line of Sight	□ Yes	100–300 feet (or longer if you get one of our CC Vector Long Range Wi-Fi systems, but still line of site)

4. Thunderstorms & Electronics = More Interference

Lightning strikes from distant thunderstorms, even hundreds of miles away, generate bursts of static that AM is very sensitive to. This is especially common in summer.

Add to that, more plugged-in electronics like air conditioners, fans, solar inverters, and pool pumps, and you've got a recipe for local interference that creates hum, buzz, or whining sounds across the dial.

🔧 **What you can do:**

- Turn off other electronics near your radio, especially anything with a motor or digital control.
- Try battery power instead of plugging into a wall socket (less chance of line noise).
- Move your radio around the room – even a few feet can help. AM antennas are directional, so rotating the radio can also clean up the signal.

5. Dry Ground Weakens Local Signals

AM signals that travel by groundwave need **moist, conductive soil** to reach you. Dry summer conditions can reduce conductivity and shorten how far those signals travel, especially in rural or desert areas.

Tip:
Choose a radio with excellent AM sensitivity and selectivity. You might also consider a **tuned AM antenna** or try listening in open areas or near water for better results.

□**Important reminder:** If static is the problem, a sensitive radio can make it worse. Visit this blog post for more tips on radio noise and static.

6. Know Your Station: Power, Distance, and Direction Matter

Even with the best radio and setup, you won't always get the station you want. That's because:

- Many AM stations **must reduce their power or change direction at night** by law, to prevent interference with other stations.
- Some stations run as low as **500 watts** during the day (*with only double digits at night*), which simply can't cover long distances, especially with dry soil or electrical noise nearby.

Example: If you're trying to pull in a 500-watt station from 100 miles away during the day, you're likely out of luck and it's not your radio's fault.

🔎 **Tool Tip: Radio-Locator.com**

This free tool lets you look up:

- Day vs. night coverage maps
- Transmitter power and location
- Frequency and call sign details
- Signal patterns (especially useful for directional stations)

Knowing what's realistic to receive can save you a lot of time, energy, and frustration.

7. Still No Signal? Try Internet Radio

When conditions are bad, or when stations change their broadcast pattern at night, even the best AM radio might not pick up what you want.

That's when **internet radio** becomes your best backup.

With a device like our **CC WiFi 3 Radio**, you can stream over 25,000 stations, including your favorite AM talk shows, with no static, no fade, and no interference – as long as you've got Wi-Fi.

It's not portable like a pocket radio, but for bedside, desktop, or shop listening, it's a rock-solid alternative.

Final Tips for Better AM Reception in Summer

- Listen later at night for skywave stations
- Use a radio with high AM sensitivity and low noise floor
- Rotate or move your radio for better reception
- Reduce electrical interference around your setup
- Use a tuned external antenna if needed
- Understand your target station's power and coverage
- Use Radio-Locator.com to do your homework
- Try internet radio when AM just won't cooperate

Still Have Questions?

At C. Crane, we've been obsessed with improving AM reception for over 40 years. We're always happy to help troubleshoot your setup or recommend the right gear — no scripts, no bots, just real people who care about good reception and audio.

We'd love to hear from you. What's the furthest AM station you've picked up? Do you have a favorite trick for pulling in a weak signal? Do you notice a difference in the summer? Drop us a note in the comments or send us an email — your tip might help another listener.

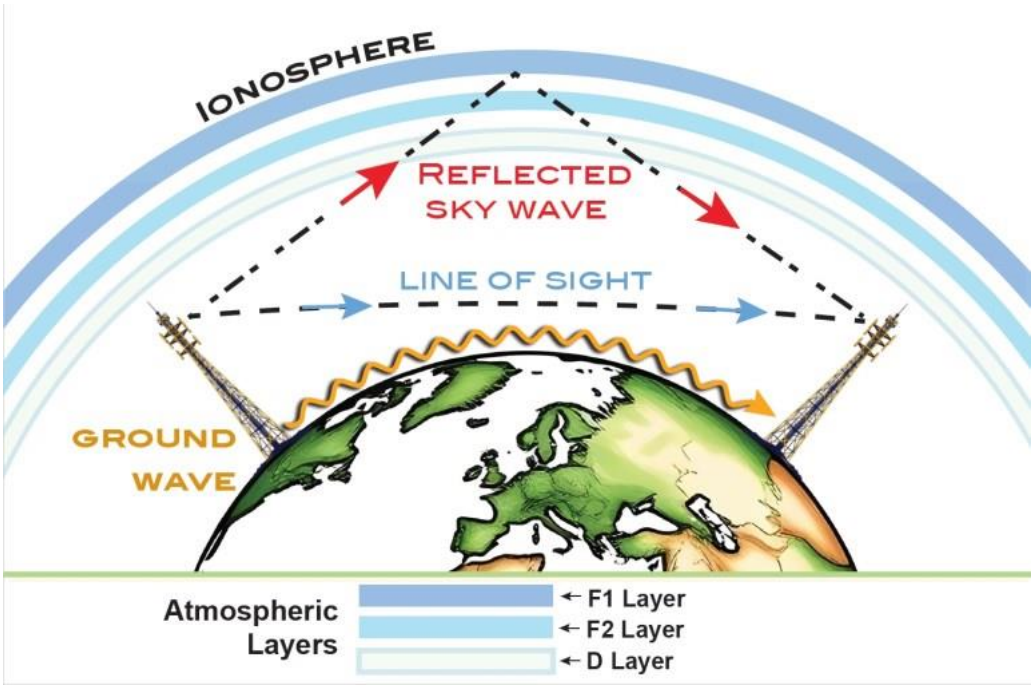
Extra Insight for Serious Listeners

Here's a more in depth look at Skywave – This is an excerpt from our ***Shortwave Tips and Antenna Booklet for the Non-Rocket Scientist*** that we used to produce. It continues to provide a great explanation for how radio waves travel.

How Radio Waves Work

A radio wave can be received by three different paths as the signal leaves the transmitting station. A signal will travel by ground wave, by line-of-sight, or by a reflected sky-wave. The reflected skywave is responsible for long-distance communications and is the most intriguing for world-band radio.

A radio wave can leave a transmitter's antenna and travel around the planet because of the ionosphere. The ionosphere contains several layers which are responsible for reflecting radio signals. These layers in the earth's atmosphere are filled with charged particles. The radiation from the sun electrifies these particles, which causes them to be charged. The electrified region is what reflects the radio waves back to earth.



The D layer is the lowest electrified layer of the ionosphere. This is the layer that causes problems for broadcasting. During the day, when there are a lot of solar flares, radio waves get absorbed by the D layer, which is why signals do not transmit very well during the day. Solar flares are intense variations in brightness that occur when built up magnetic energy is suddenly released. The D layer almost completely disappears at night, allowing the F layers to reflect radio signals.

Another effect on signal transmission is from sunspots. Sunspots are cool spots on the surface of the sun. They represent a time of high solar activity. For shortwave listening, the more sunspots the better.

The F1 & F2 layers are the highest layers. F1 & F2 are responsible for reflecting shortwave signals. These layers normally reflect signals from the radio stations, so the signals reach distant places around the world. If we didn't have the F1 & F2 layers to bounce the signal, the curvature of the earth would cut off the transmission. A good analogy is a light beam reflected by a mirror. In the same way you can reflect light with a mirror; radio waves are reflected by the F1 & F2 layers.

The interaction of these layers is complicated. They change from day to night, from season to season, and from year to year. There is usually more activity during the evening than in the daytime.