

The
Broadcasters' Desktop Resource
www.theBDR.net ... edited by Barry Mishkind – the Eclectic Engineer

Tower Topics

Inspecting Your Towers
Why? Who? When? How? What?

[August 2012] Most stations have an auxiliary transmitter and generator, for example, to cope with emergencies like power loss. But few have a "spare" tower, and the loss of a tower can be crippling – taking the station off the air. Preventing problems before they appear is the key.



All too often, towers are like part of the landscape. We know they are there, standing tall. We just assume they always will be there. That is until one falls over.

Of course, no one wants to arrive at the site to see a downed tower.

As strong and silent as they seem, the past year has seen severe weather bring down a number of towers around the country. From tornados to heavy icing, there are some things that simply cannot be anticipated.

On the other hand, a tower should not be lost due to lack of preventive maintenance. Or, a worst-case scenario: when a tower becomes unsafe to climb – and then you find out the local zoning will not permit a replacement.

Clearly, a proactive tower maintenance plan is important.

TOWER SERVICE CALL

Tower maintenance is not totally unlike car maintenance, although you do not take it to the shop – in effect the shop comes to the tower.

Just like those regular 5000 mile oil changes and periodic inspections, there are regular things that must be done to a tower to ensure its continues to perform. Such a regular, planned schedule will help prevent problems from reaching the point where they threaten the tower's integrity and lead to structural failure.

The proper maintenance cycle starts with an inspection of the tower structure and surroundings.

WHEN

Whether your towers are new or old, they need to be checked regularly. How often?

Jason Kardokus, of the Northstar Broadcast Contractors suggests: "It all depends on your environment and type of tower, but I would say a good plan would be every one to five years for a basic inspection and every three to ten years for a full inspection.

"For instance, if you have an unlit, unpainted 199-foot AM tower in a non-corrosive environment that has been there several years, then it is appropriate to have a basic inspection every five years or so and a full inspection every ten.

"On the other side of this is the tower on a seacoast, in a continuously wet environment, or intense storm area where actual damage to the structural members may be taking place in a fairly short period of time. In these cases it would be wiser to do a cursory inspection once a year, with a more complete, full inspection done every three years."

The bottom line: If you do not know when your tower last was inspected last or if you know it has been more than five years then do that full inspection now, and then set it up for a routine schedule in the future.

WHO YOU GONNA CALL?

Choosing the right tower crew to do your inspection is probably as important as how often.

When having an inspection done, be sure to get the tower company's qualifications. Even better, a recommendation from a respected friend can be very helpful. Get someone with common sense and a good reputation.

A good tower crew will catch things early. A bad one might just climb up, climb down, and give you a shock and a bill (which could also be a shock).

Curt "Cowboy" Flick, a long-time tower expert working out of Ohio, says "The difference between a good inspection and a not-so-good inspection is real diligence in looking at *everything*, and touching whatever can be touched."

Equally, it is important to watch out for the "Doomsday Scenario." Just as you might experience an "upsell" at some of those oil change companies, Kardokus says in most cases you should be cautious about smooth talkers who find a lot of things to do "up there."

Kardokus says, "If someone says your tower is about ready to fall down and here is how much its going to cost to fix it, then be very wary! This may sometimes be the case, but in my experience, not usually."

The best tower crews will give you a clear, understandable report on current conditions and a balanced plan on what you need to do now to keep the tower in good condition mechanically – and in regards to your painting and lighting requirements.

BEFORE THE CREW ARRIVES

Although your goal is to find a trusted tower crew to rely upon, you should still have an idea yourself about the condition of your towers.

That means it is important to do your own regular inspections, checking the following for any corrosion or damage. What are some of the easy things that you should already know?

The prime indications of a tower's condition are easy to check: is the tower straight? Paint also is easy for you to check on. Is it peeling, exposing the steel to the elements? Or, is it so faded, you cannot clearly see the bands from a mile or so away? How about the fence? Is it in good shape, secure, locked? And those guy wires – it should be pretty obvious if they are too loose.

Kardokus shares this list for your basic routine tower inspection:

- Tower members – at least as far as you can see.
- Bolts and other hardware; are there any signs of major rust?
- Paint condition; bright, not peeling.
- Weep holes (sometimes painters cover them!)
- Guy wires are taut and free of trees, etc.
- Insulators.
- Antennas.
- Antenna mounts.
- Antenna Tuning Units and/or isocouplers condition.

Flick notes that it is a good idea to get a good high powered set of binoculars or a telescope to check out the higher sections, where the paint fading is visible more rapidly. Hunters will find that that their rifle scopes will serve them well.

WHAT YOU SEE

Kardokus recommends that, as you go, you should take pictures of the parts of the system.

He says: "Be proactive: if something does not look right during your inspection, then it probably is not right. That may sound a bit too simplistic, but more often then not when something does not seem right or look right it probably is in more ways than just looks. "

While what is needed may be different from your expectations, the more you know, the less likely you will be surprised – either by the tower crew finding things you do not expect or by missing trouble spots you know need attention.

WITH A PROFESSIONAL EYE

Once a crew is on site, the very first thing they will want to check is whether the tower is in a condition where it can be safely climbed.

Flick says that when he first comes to a site, he looks for "Paint, rust, general appearance." Also, "mowing, [and] the over-all general condition of the grounds. All of that is a tip-off as to maintenance, and just how closely one should need to look at the rest of it, and what might be expected" as the inspection is done.

Before getting on a tower a good tower man will, according to Flick, initially check "anything that can be seen and/or touched," which includes the guy wires and anchors, the condition of the metal, and whether the tower is plumb." If they're not straight, [I] think carefully about whether they will support a man," he said.

How much care the station has given to the tower over the years is another good measure of what is likely to be found and what maintenance is needed. If there are trees growing through the guy wires or vegetation is encroaching on the ball gaps, those are not a good signs. Badly peeling paint is another sign that trouble may lie ahead.

Flick makes a good point: "… keep in mind that if it looks bad on the ground it's *much* worse aloft, and that just because it looks "passable" on the ground does not mean it's passable aloft. Towers deteriorate from the top down – and not at all linearly."

Of course it is always easier if the tower was erected properly and then cared for over the years.

Karkodus says: "A good, clean, quality install usually gives attention to detail. That makes the process easier. Sure, things do deteriorate over time (loose guys, corroded members, environmental damage, etc), but when you start with a clean install, it is easier to see as things happen."

Next time we will take a closer look at each part of the inspection and see how good maintenance keeps towers standing tall.

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Some tower crew options:
Curt Flick and Associates – Akron, Ohio – 330-645-6383
Northstar Broadcast Contractors – Seattle, WA – 206-788-0660

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