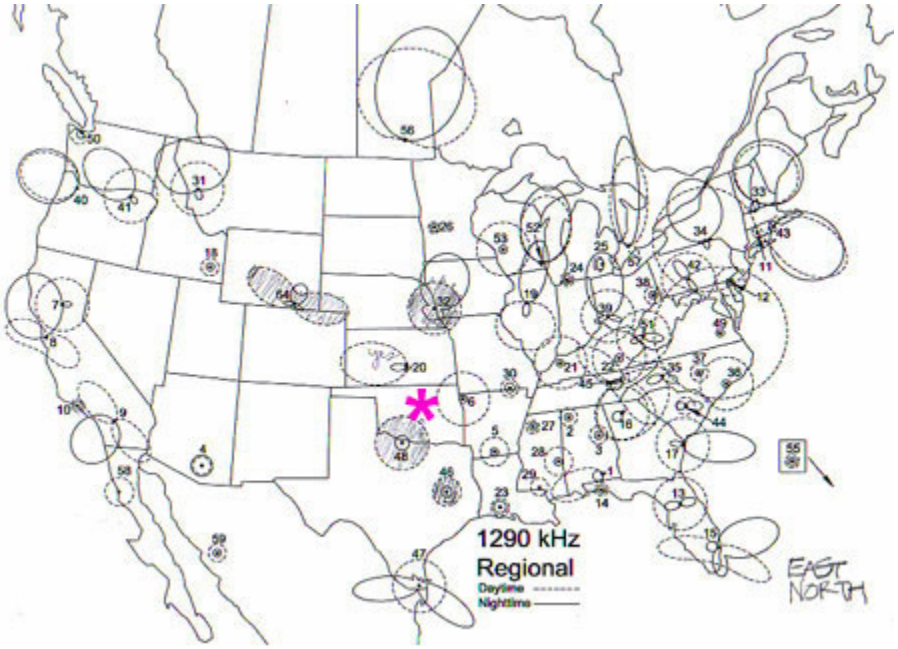
Using the NRC Pattern Book as a Serious DX Tool

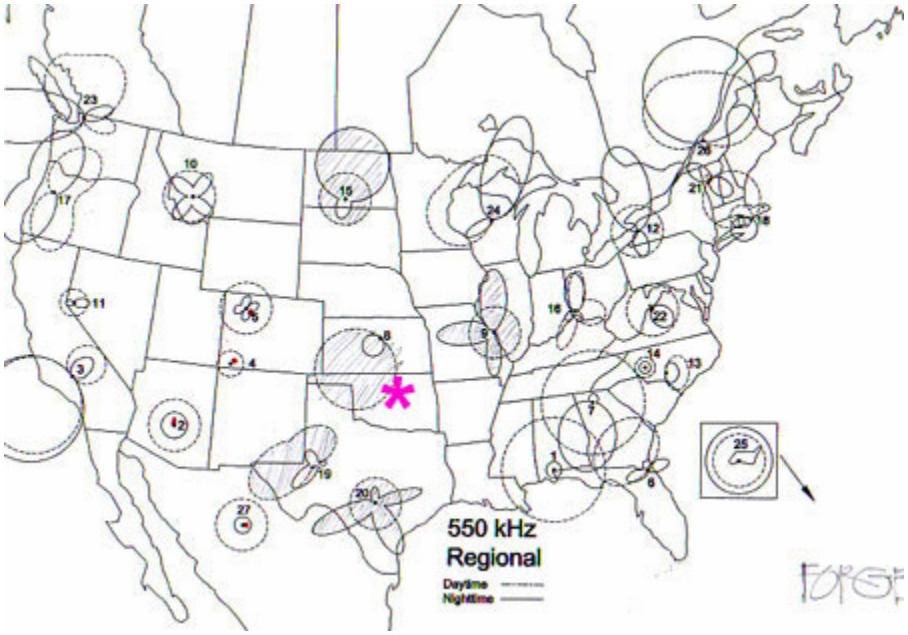
John Bryant December 2009

In truth, I feel a little silly writing a formal article on this subject. However, I cannot help myself; I've owned whatever the "current copy" of the *NRC AM Station Pattern Book* (formerly the *Nighttime Pattern Book*) for many years. I always found it handy to have around to look up a particular channel to try and understand the signals that were floating my way or to look at the patterns to see how various patterns meshed (or sometimes did not) to provide the listening public with good quality radio reception.

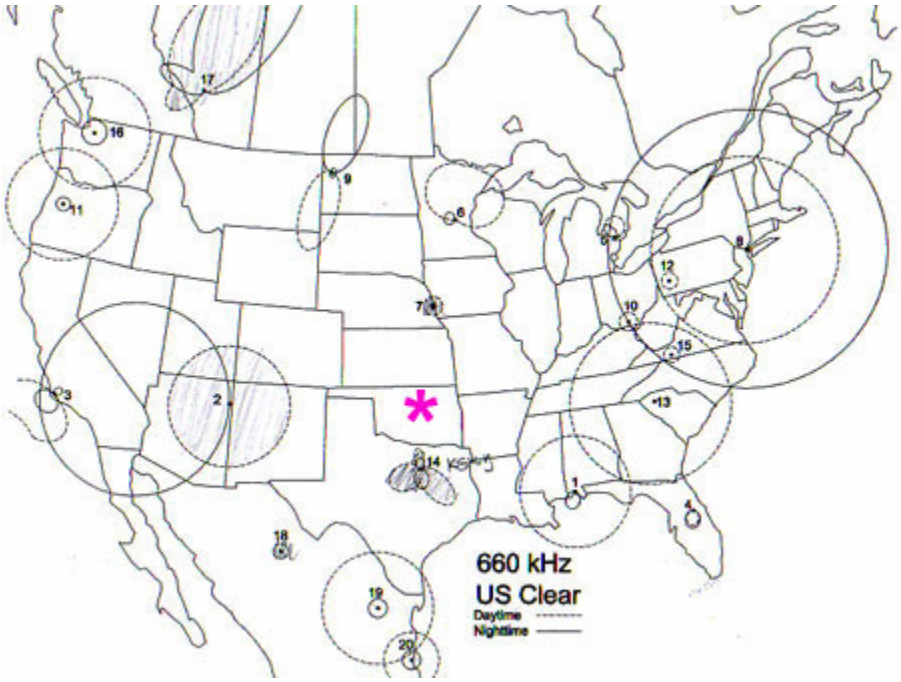
Those two views of the *Pattern Book* are all that I held until I began to get very serious about domestic AM DXing a couple of years ago. As I began keeping a serious logbook, I sort of "hit the wall" at something a bit less than 400 stations heard. I had heard all of the easy and semi-difficult stuff on practically every channel. To add to the log, I had to start playing tricks with listening at various different times, taking a close look at directional antennas and using more sophisticated methods of DX targeting to focus my efforts. The analytical tool that has become a main stay of my DXing was with me all of the time: the *NRC Pattern Book*! It is so simple and so useful that I am ashamed that I did not begin using it sooner. Here is an example of what I did and how it helped me hear even more DX:



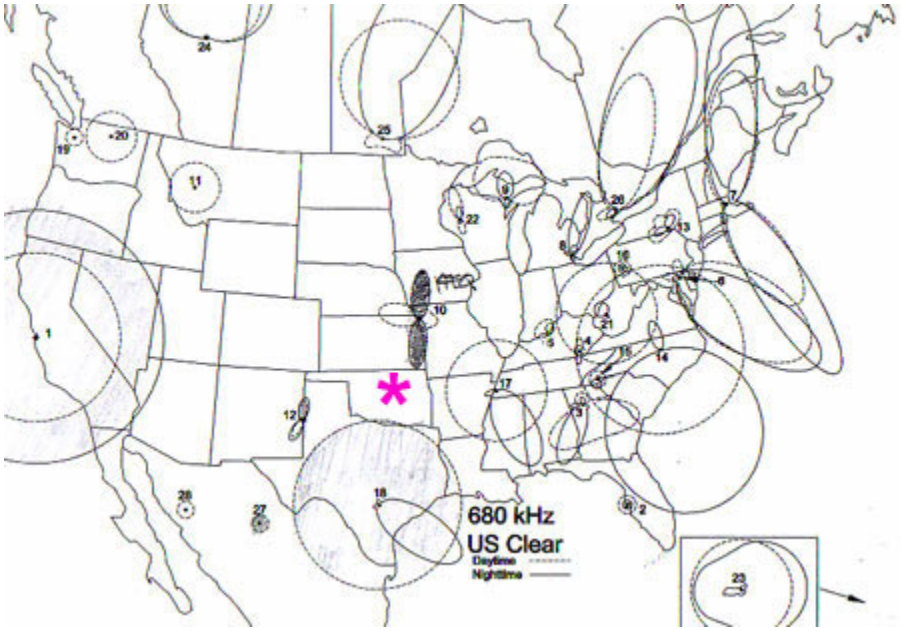
This is the 1290 kHz. map page from the *Pattern Book*. All that I did was shade in the patterns of the stations that I had heard. How simple can you get? What followed was what was important. When I started doing this, all I had was KKAR, Nebraska and KWFS, Texas, the nighttime dominant on the channel. I was using a Wellbrook array which gives me a 180 degree (almost exactly) view of the horizon as my main antenna. The first thing that I did was to point the array South *at dawn* and attempt to catch KIVY in Texas as it boosted to daytime power about 15 minutes before KWFS did. It took me several weeks of checking, but the FCC database gave me the power change times, so, I finally nailed it. From there, I pointed the array to the West and waited for good northerly conditions to catch KOWB in Laramie, Wyoming in their daytime pattern *just at dusk*. It worked like a charm.… after a couple of weeks of checking. The future? The whole East is open and rich in targets, but I need a narrow cardoid array antenna; OR, I could go outside, URL barefoot and point the antenna bar to null BOTH Texas and Nebraska and probably work to the East. **Touchdown**!



My note to myself in the lower left hand corner of this map states “FORGET!” and that is the message here on 550. It is less evident on the map than on the dial, but the stations in St. Louis, San Antonio and, especially, Salina, KS simply own my 550 dial space. It was a miracle to hear KCRS in Midland, TX. Someday, I may revisit 550 and try both SE and SW for a few more stations. However, in the meantime, there are much greener pastures.



Things are somewhat unusual on 660. KTNN in Window Rock, AZ is just not a problem and KCRO in Omaha is very difficult to hear. Beyond that, things are tougher than they appear. CFFR in Calgary ought to be impossible to hear. In fact, when I can get a null on Dallas, Calgary is almost always there! I’d guess that their actual pattern is more omni-directional than shown. The real problem, though, is KSKY in Dallas, 200 miles to the South - it just bombs in. My main goal on 660 is to somehow throw a null on KSKY and LOOK EAST… first for WFAN in New York.



The 680 channel here is an example of "you can't have too many antennas" and it exposes the main weakness of the first generation of Wellbrook Phased Arrays. KFEQ in St. Joseph, MO is a real pest here. I'd swear that they are pushing their signal directly at me. I can look straight South, though, and put KFEQ in a null. I've heard San Antonio, TX on a number of occasions and the little Mexican station in Chihuahua is not a problem to hear, either. When I look West, there is little beside KNBR in San Francisco to hear. However, with the 180 degree wide front lobe of the first generation Wellbrook, looking either North or East gives me KFEQ, St. Joseph like I was in their parking lot. Clearly, I need to null KFEQ with a Barefoot ULR, giving the Houston station a partial null, too and then LOOK EAST all evening and morning.

Well, that is about the sum of it. I gray-out each station that I've heard on each channel and then I start analyzing the channel for missed opportunities. That analysis allows me to select the specific antenna that I will use and the probable best direction to point it. In some cases, that analysis along with the FCC files, even tells me the best times to listen.

So, even though the most recent Sixth Edition of NRC's *AM Station Antenna Pattern Book* is dated 2006, it is still an excellent DX tool. Give it a try…. You'll likely be surprised at how much this low tech tool can offer. It is available on-line at http://www.nrcdxas.org/ at $16.95 for NRC members in NAm and $22.95 for non-members. Outside North America, I believe that the price is $28.00.