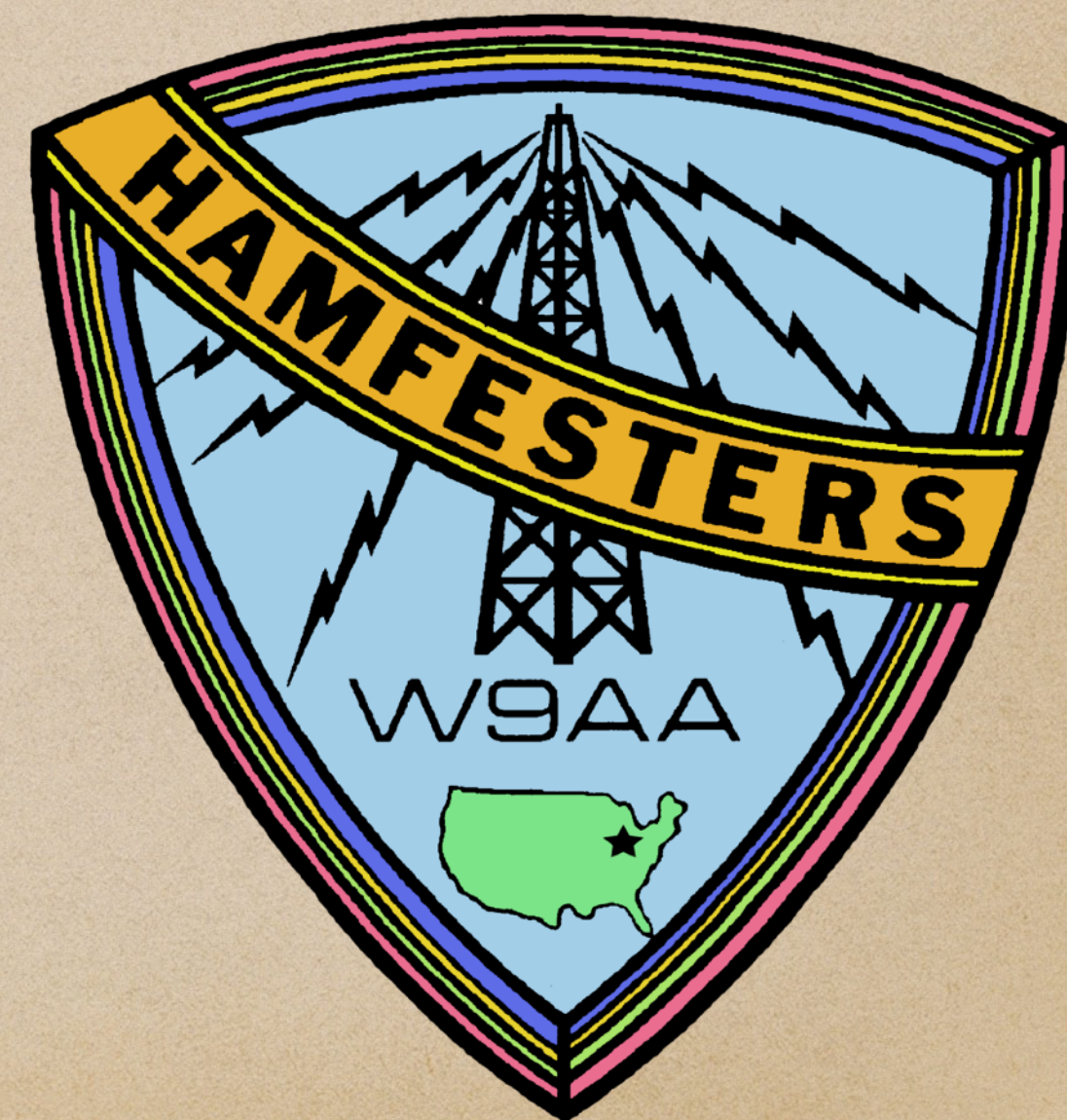


HF Mystery Antennas

What are those antennas for?

August 6, 2021

Brian Davis, W9HLQ



Mystery Antenna

- ◆ Several beams pointing NE
- ◆ One installed poorly , maybe not used
- ◆ Note the microwave dish pointing south



Mystery Site

- ◆ Looks like an old cell tower
- ◆ Only one power meter: only one user
- ◆ The coax leads into the shed
- ◆ Who could it be?
- ◆ Let's see.....



The tower base and perimeter fence.

The Rebirth of HF



Paul Denisowski, Product Management Engineer

ROHDE & SCHWARZ

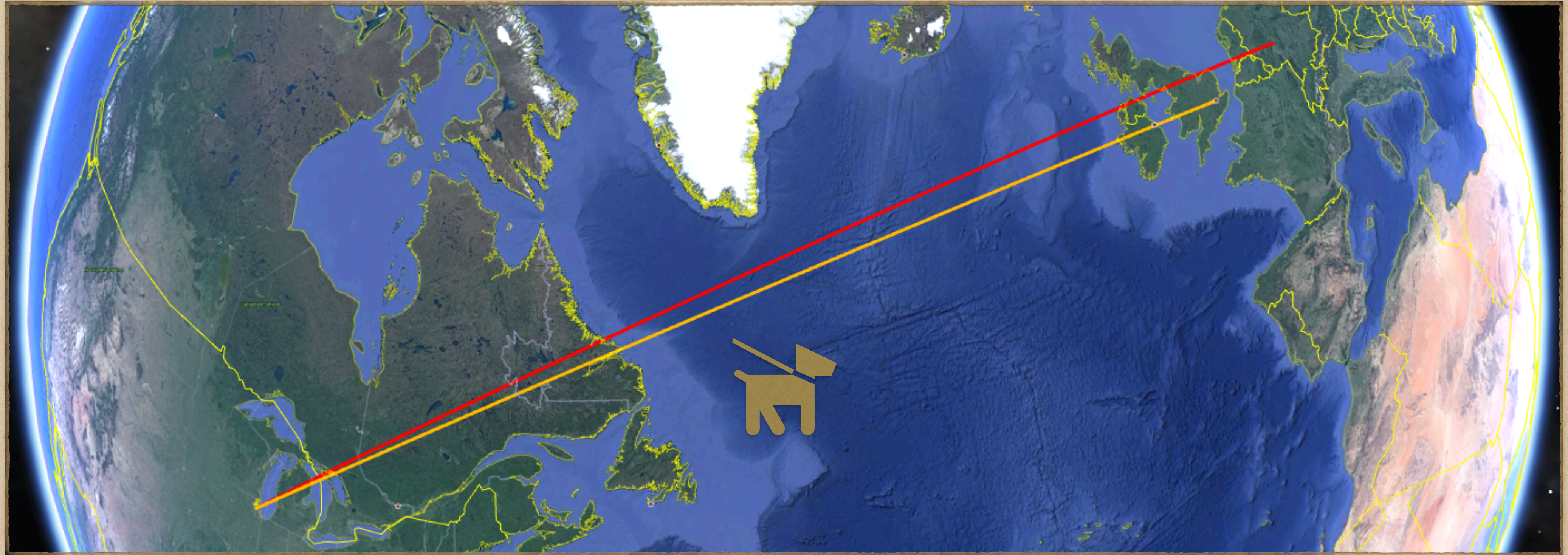
Make ideas real



Mystery Antennas

By the way, we know HF does not need re-birth, it never went any where!

- ◆ These antennas were found west of Chicago
- ◆ They are not cell towers for sure
- ◆ Some sort of industrial communications?



Guess this is a link to Europe

Beam angle is 45°

West Chicago site

- ◆ Author was out riding his bike and came up the site.
- ◆ Many questions concerning the configuration
- ◆ HFT - **High Frequency Trading**

WEST CHICAGO TOWER MYSTERY

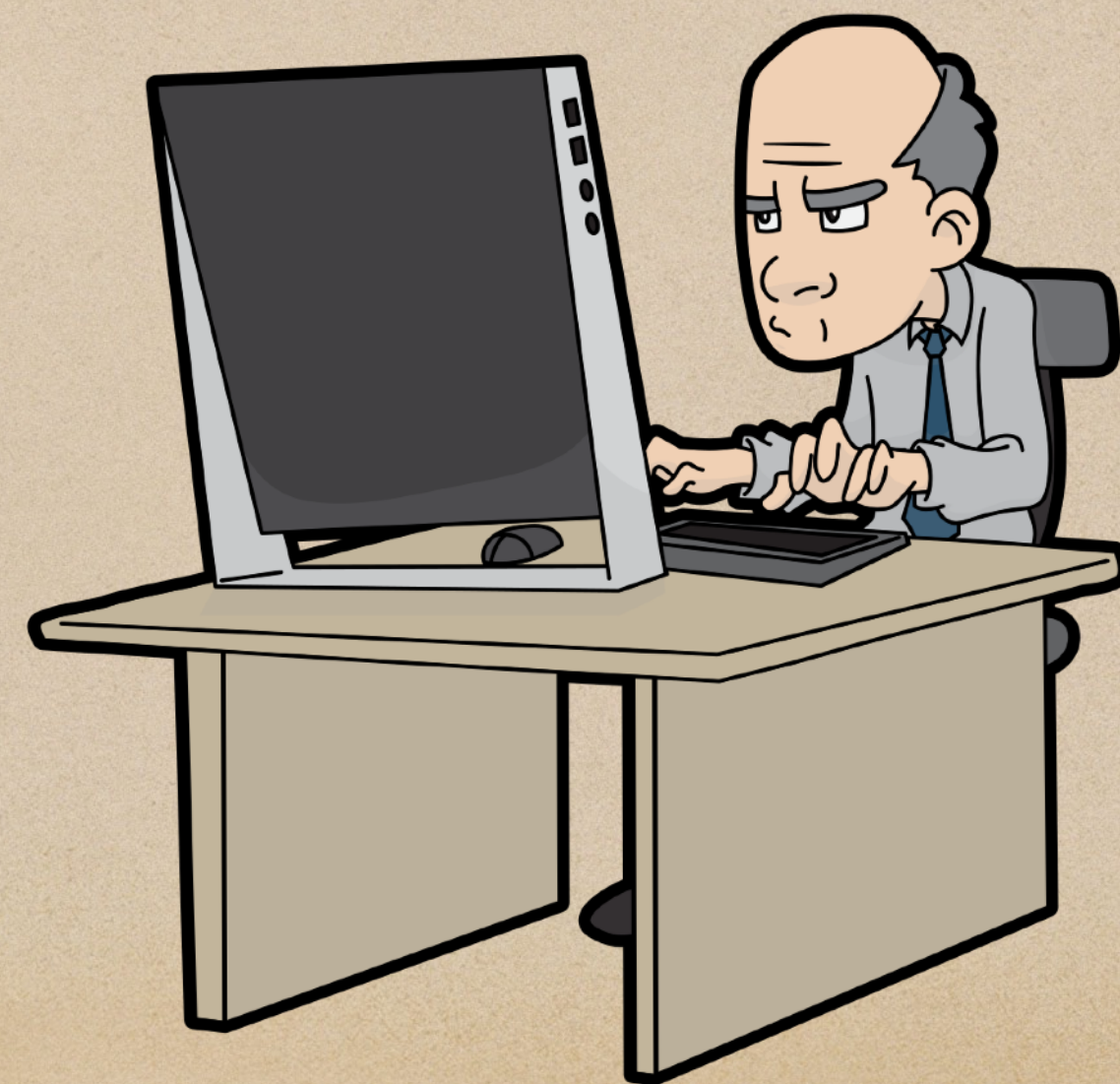
7 May 2018 – 85 Comments

Since 2014 this blog has extensively covered the wireless networks built by high-frequency trading (HFT) firms or network providers to reduce latencies between the different exchanges around the world (market makers need fast connectivity to manage risk, news traders also need to be fast, etc.). This epic investigation on microwave, which started with [HFT in my backyard](#), will be fully reported in a book I'm currently writing (in French for now). As I'm quite busy with this writing (and other/more interesting matters about market structure), I didn't really have the time to check out what I have been hearing about "shortwave" or "high frequency" radio. This is the way high-frequency trading firms may use shortwave radio to directly connect widely-separated locations (in short, traders are willing to use shortwave to cross oceans with less latency than any fiber - like Hibernia). But recently I got more intel about the situation (and some fun anecdotes). With some help from the US, I found that a firm purchased a field for more than 1\$M to build towers and antennas; with some help from the EU, I got hints about Germany; and I dug into UK public records. I even met, last March in Amsterdam, people involved in those projects. Not surprisingly, at least five HFT/market making firms showed up behind the shell companies/names they use to hide. The usual suspects.

What is High Frequency Trading?

A method of trading that uses powerful computer programs to transact a large number of orders in fractions of a second.

Typically, the traders with the fastest execution speeds are more profitable than traders with slower execution speeds.



Mystery Site

- ◆ Some think this is a link for low latency stock trades
- ◆ Chicago to New Jersey link typically is 14.5 ms; some firms ran cable direct and reduce the time to 13.1 ms.; then further to 12.8 ms.
- ◆ Some HFT firms went to air based connections and the time dropped to 8.5ms.



The tower base and perimeter fence.

Mystery Antenna

- ◆ Initially microwave links were used, but all the intermediate processing added delay
- ◆ Using HF direct links all the delaying stops are bypassed.
- ◆ A large investment firm in Colorado paid for their own fiber cable to connect them to Japan.



Summary

- The High Frequencies are as useful and viable as ever
- They are not going away.
- They are being used by amateurs, military and increasingly by commercial interests

Let's get on the air and work those stations and antennas, grab some DX while we are at it! See you on the airwaves.

Blog Links

- ◆ <https://sniperinmahwah.wordpress.com/2018/05/07/shortwave-trading-part-i-the-west-chicago-tower-mystery/>
- ◆ <https://sniperinmahwah.wordpress.com/2014/09/22/hft-in-my-backyard-part-i/>
- ◆ <https://www.investopedia.com/terms/h/high-frequency-trading.asp>
- ◆ <https://www.investorsunderground.com/high-frequency-trading/>
- ◆ <https://swling.com/blog/tag/shortwave-trading/>

