

The KLARION

Newsletter of the Keuka Lake Amateur Radio Association
Spring 2018

Secretive "Numbers Stations" Persist on HF

For many years, unidentified radio broadcasts have been transmitting coded messages, using numbers, such as "6-7-9-2-6 or 5-6-9-9-0." Even today, tuning across the HF spectrum typically will yield a "numbers station," a mechanical-sounding voice (male or female) methodically announcing groups of single-digit numbers for minutes on end. According to *Radio World*, you may have tuned into a spy agency's numbers station transmitting coded instructions to their minions worldwide.

Numbers station transmissions typically consist of a voice "reading out strings of seemingly random numbers," explained Lewis Bush, author of *Shadows of the State*, a new history of numbers stations. "These are sometimes accompanied by music, tones or other sound effects," he said. The *Radio World* article quotes Paul Beaumont, an associate editor of *Eye Spy Intelligence Magazine*, a publication dedicated to espionage and intelligence, "Voice (numbers) stations are known to be spy messages."

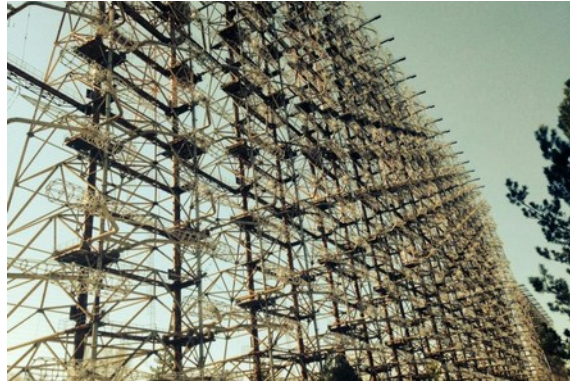
The article said that one of the best-known numbers stations was "The Lincolnshire Poacher," so called due to its use of "The Lincolnshire Poacher" folk song played on a pipe organ as an identifier. Radio amateurs used direction-finding equipment to pin down the station's eventual location to an RAF base on Cyprus, the article said.

ARRL member Chris Hays, AB6QK, on the west coast, said this week that he frequently hears a CW station on 7.163 MHz sending random alphanumeric characters, each group terminated by one or more question marks.

From the ARRL Newsletter

The Duga Radar or The “Russian Woodpecker”

For those of you who have been around a while:



This is a picture of the Duga over-the-horizon radar array. It is currently in the exclusion zone surrounding the Chernobyl nuclear site in Ukraine.

You will remember that this was the installation which made a noise like a woodpecker knocking on a tree. The antenna structure, above, was also known by the NATO moniker of “STEELWORKS” or, perhaps, “STEELYARD”.

During operation the transmitters were located a few kilometers southwest of Chernobyl while the receivers were located about 50 kilometers northwest of Chernobyl. At one time it was believed that several transmitters were in use, but, in actual fact, there was only one.

Power levels were massive, with somewhere in the neighborhood of 10 MW equivalent of isotropically radiated power (!). Frequency varied between 7 and 19 MHz (right down the pipe for the 20 meter band!), and the interpulse period was 90 ms.

Beginning in the late 1980's this signal became less frequent. In 1989 it disappeared entirely, and has not been heard from since. Incidentally (or then again, perhaps not) the “Chernobyl Nuclear Incident” roughly coincides with the cessation of the radar signal.

There is good intelligence that this radar set was located in this area to take advantage of the electric power generated by the Chernobyl nuclear station; or that this nuclear station was located and constructed specifically to provide power to the radar installation.

This signal so infuriated American amateur operators that some tried to jam the signal, by transmitting a synchronous, un-modulated, continuous wave signal, at the same pulse rate as the offending signal.

There was a “Russian Woodpecker Hunting Club” which transmitted the signals, as above. Some of these folks even had framed “Official Practice Targets” in their shacks.

The exclusion zone around Chernobyl has turned into a major tourist attraction. It is very possible to enter the zone with a minimum of fuss, muss, or bother, and perhaps get as far as the base of the STEELYARD!

Ukrainian amateurs have been able to climb this structure (please don't **you** try this!) and attach antennas to the top, or load portions of the structure itself to use as an amateur radio antenna. Brilliant re-use of a cold war structure!

Joel (KC2VAW) and Thank You! To Nancy (KS2YL) for the idea.

The IARU

If you enjoyed the two articles above, you may also enjoy the International Amateur Radio Union. This organization conducts and coordinates the types of monitoring and intelligence gathering shown in the two stories shown above.

You will remember, from your Technician license test, that there are three IARU regions, worldwide (numbered, logically enough, Regions 1, 2, and 3). We live in Region 2.

Much of the current monitoring is coming from Region 1, due largely to their proximity to the former Soviet Union, and to a very dedicated cadre of amateur operators who are willing to put in the hours and hours of monitoring time necessary to understand all of this.

You can find a “near current” copy of their work in their monthly newsletter, which is available from this link: <https://www.iaru-r1.org>.

Who knows, you might become interested enough in this work to try it yourself! Here is another good link from our own ARRL: <http://www.arrl.org/intruder-watch>.

You can also contact IARU Region 2 Coordinator Carlos Beviglia, LU1BCE at the following link: lu1bce@lu4aa.org for information or to make reports.

Joel (KC2VAW)

Call Sign History

Do you feel possessive about your call sign? I know I do. I worked hard for those five letters and a number! Yet, when we stop to think about it, we don't really "own" our call signs at all! It's probably more correct to say the the FCC "leases" them to us for the period of time we are licensed. We serve as the "caretakers" of these call signs until we become "silent key" or allow our licenses to lapse.

A bit of a different idea, eh? I thought, perhaps, it might be interesting to have a look at some call sign history to help us understand where they came from, and what they mean. Of course, this also means that we will look at the history of amateur radio itself!

In the Beginning ... The Wild Wild West!

Amateur radio was originally known as "wireless". Prior to 1912, there were no real laws, regulations, or rules. Transmitting equipment was fairly crude, consisting mainly of spark gap equipment, which had a range of about 100 miles (maybe, and depending on propagation, which was only imperfectly understood at that time).

Call signs, at least for amateurs, were equally informal, with some stations using just their first name, usually shortened to either three or four letters ("Will this is Mac; do you read me?")

Commercial interests, primarily the Marconi Co. used call signs beginning with "V" (for stations on land), or "M" (for stations on ships). Eventually, this became an issue, as it became nearly impossible to separate out "MAC" (or Milton A. Cornwall, an early amateur radio operator from the New York City area) from "MAC" (a Marconi shipboard station located somewhere between New York harbor and Newfoundland)". Pretty obviously, something had to be done!

By 1909 a book was published (the *Wireless Registry*) which purported to list all amateur call signs. Most amateurs were using three letters by this time or, less commonly two letters and a number. J.C Randall of Albany, for example, signed as "S4"; and F.W. Harris of Renton WA signed as "3B" or, perhaps "BBB", depending on how he felt on any given day.

Pretty obviously, this could not continue, and it didn't. In 1912 the *Titanic* had it's famous accident with an iceberg. In the aftermath of this disaster the US Congress initiated many changes to the countries radio system, in general, and the amateur system, in specific.

These changes were codified in the *Radio Act of 1912*, enacted in August of 1912. One of the more important provisions of this law required that all radio stations be inspected

and licensed by the federal government. Almost overnight this reduced the number of amateurs from over 10,000 to about 1,200. This provision almost killed the hobby.

All amateur or “experimental” stations were issued specific call signs and restricted to 200 meters and lower (as the higher frequencies were considered “useless”). The call signs consisted of a Arabic numeral which signified the district, followed by two letters of the English alphabet.

The districts reflected the importance of radio to shipboard traffic, with nearly all the inspectors located on the coastal areas, and only Chicago and Detroit in the interior of the country (and even these cities were heavily involved with Great Lakes radio traffic).

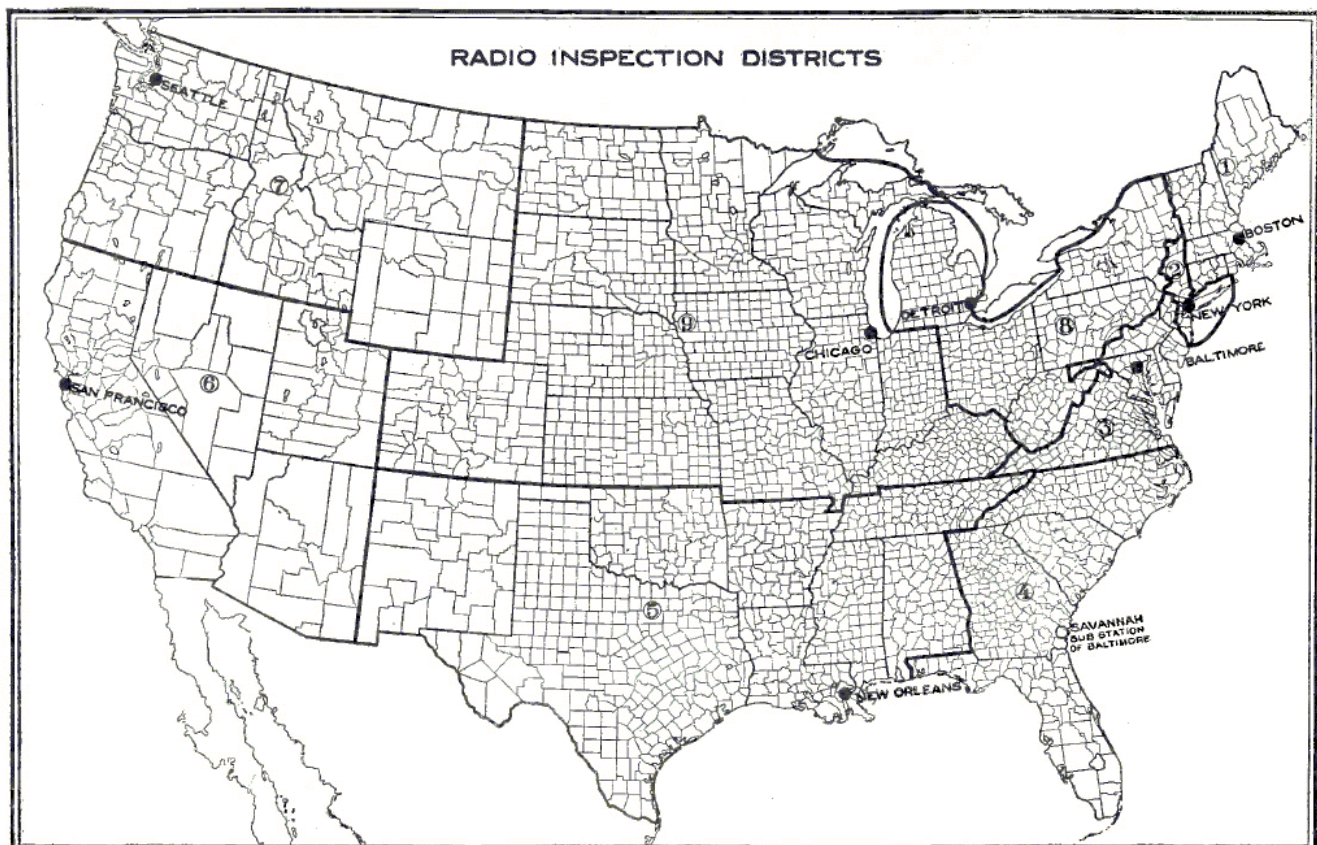
1. BOSTON, MASS.: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
2. NEW YORK, N. Y.: New York (county of New York, Staten Island, Long Island, and counties on the Hudson River to and including Schenectady, Albany, and Rensselaer) and New Jersey (counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth, Hudson, and Ocean).
3. BALTIMORE, MD.: New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia, Delaware, all counties south of the Blue Mountains, and Franklin County), Delaware, Maryland, Virginia, District of Columbia.
4. SAVANNAH, GA.: North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. NEW ORLEANS, LA.: Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. SAN FRANCISCO, CALIF.: California, Hawaii, Nevada, Utah, Arizona.
7. SEATTLE, WASH.: Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. DETROIT, MICH.: New York (all counties not included in second district), Pennsylvania (all counties not included in third district), West Virginia, Ohio, Michigan (Lower Peninsula).

9. CHICAGO, ILL.: Indiana, Illinois, Wisconsin, Michigan (Upper Peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

Had you been an amateur during this era, and lived in this part of the state; your call sign might have been something like "8AB". We lived in the eighth district (administered from Detroit MI). The "AB" is a random combination. The only restriction was that the letters "X", "Y", and "Z" were not to be used as the first character following the numeral.

On April 7th, 1917, amateur radio came to a halt, as radio amateurs were ordered to disassemble and render unusable any transmitters, receivers, and antennas. All licenses were immediately revoked.

America had gone to war. While amateurs might be unlicensed, they were considered a valuable war asset. They were expected to sign on to help in the coastal wireless stations or to join the Signal Corps.



Map Shows the Various Radio Districts of the United States. Districts Are Enclosed in Heavy Lines and Numbered in Accordance With Numbers Designated for the Districts by the Department of Commerce. The Cities Are Shown at Which the Chief Radio Inspectors of the Districts Are Located.

Next newsletter we will look at the period from 1918 to 1941.

Joel (KC2VAW)

For Next Time

- **More on the History of Amateur Radio Call Signs**
- **A 2 meter Yagi Antenna You Can Build for Almost Nothing**
- **What Would You Like To See?**

Operate in Public

Explain What You are Doing

Talk to People

Use our spectrum or someone else surely will!