Russian HF Beacons

Revision date: 26 January 2026
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The beacons and markers are on the air since the late 1960s. Until the late 1980's these beacons could be heard on numerous frequencies throughout the SW spectrum. After the disintegration of the Soviet Union, many of them disappeared and only a few survived. Some of them were very active, especially station "P" but that marker also disappeared in 2011.

HF beacons ….
Some call them Single Letter Beacons, Single Letter High Frequency Beacons, Radio Beacons, or Cluster Beacons.

What is their purpose? you might ask. Well, before we knew more about them, there were a number of theories; amongst them are several weird ones. Some thought that they are river beacons, others were convinced that the beacons are in fact UFO homing beacons. One person suggested that the beacons are part of the Russian strategic missiles network. He thinks that the Russians activate their nuclear missiles using the beacons. Odd huh?

In reality, however, most of these beacons are propagation beacons owned by the Russian navy.

When I visited Russia's frigate Neukrotimy in Rotterdam on 22 April 1997 (see picture), its radio officer told me that the cluster beacons indeed belong to the Russian Navy. That was the confirmation of a theory that many dxers had for years.

Picture © Ary Boender

The beacons that we hear today are mainly groups of propagation beacons. These groups are often called "Cluster beacons" because they transmit in clusters, groups of beacons close to each other.

The current cluster center frequencies are 3594, 4558, 5154, 7509, 8495, 10872, 13528, 16332, 20048 kHz.

	Cluster beacon slots:	Example of a cluster:
A typical cluster looks like this:	.7 D, Sevastopol (RCV)	D - 8494.7
	.8 P, Kaliningrad (RMP)	P - 8494.8
	.9 S, Severomorsk (RIT)	S - 8494.9
	.0 C, Moscow (RIW)	C - 8495.0
	.1 A, Astrakhan	A - 8495.1
	.2 F, Vladivostok (RJS)	F - 8495.2
	.3 K, Petropavlovsk Kamchatskiy (RCC)	K - 8495.3
	.4 M, Magadan (RTS)	M - 8495.4

Only a few none-cluster beacons/markers are still heard in 2026. Their purpose is unkown. The old channel markers like P, R, W, and Yu are all gone.

The two survivors are beacon L, St. Petersburg on 5156.8 and 8497.6 kHz. This beacon is not always on the air.

The other one is “V”. This beacon always transmits on two frequencies. They pick two new frequencies each month, often between 3 and 7 MHz. On one frequency a slow “V” is sent and a fast “V” is sent on the second frequency.

The Russian Air Force, to be more precise the Tu-95MS Bear H net, also transmits markers. Usually every 20 minutes for 2 to 5 minutes. The meaning of these markers is still not clear. They are sent when a channel is ready for traffic but what the different letters mean …… The markers are: C, G, K, L, N, R, S, Ü, V, W, Z.

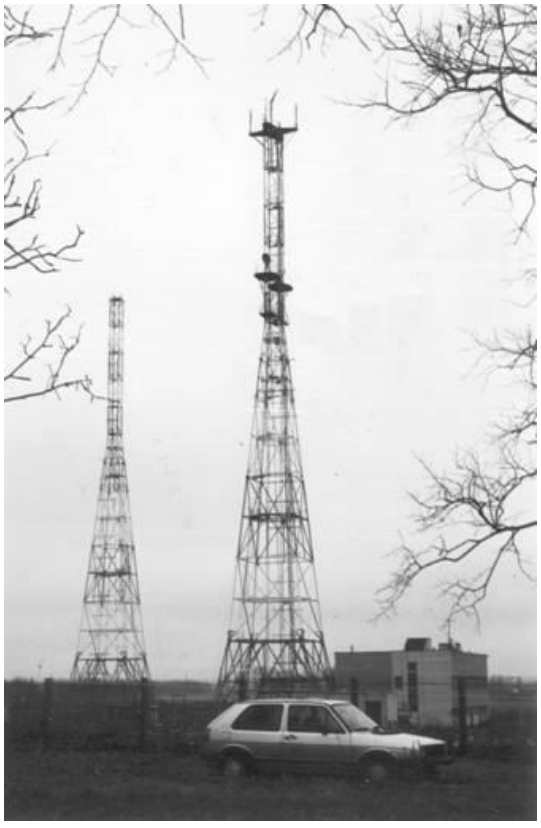
Jammer station “U”

A piece of history to end this document. This beacon used to be very active on many frequencies. The beacon was transmitted in FSK and the traffic on the frequencies was RTTY.

In his excellent book “Jamming”, Rimantas Pleikys writes:

"The data from the archive was found by long-time Ministry employee, Mr. A. Stelingis, who at one time was responsible for the operation of jamming objects. During one conversation a secret came to light about a long time mystery regarding the Soviet 'U' channel marker. I was able to monitor the work of this marker at 16 frequencies.

The 'U' marker disappeared from the airwaves in the spring of 1990. I have recorded an occasion when the 'U' marker ran on 13 frequencies simultaneously! My colleague, A. Stelingis, confirmed that these channels were continuously monitored at the jamming correction and control posts.

The 'U' channels were used to transmit orders to the jammers - most likely to issue jamming frequency times and schedules. It must have been that 'U' channels were used as backup instead of the teletype link to Moscow. (It is also believable that the 'U' marker was on the shortwave bands was used also for civil defense and other purposes). It is worthwhile to note that when the USSR ceased its jamming on 30-11-1988, the 'U' marker transmitters continued to operate for almost another 18 months! This would indicate that throughout most of the USSR jamming systems continued to be kept ready to start again."

Panevėžys local radio jamming station (10x5 kW) in Lithuania. (from Rimantas’ book “Jamming”)