Mysterious Cases of Absorption of Radio Waves

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I have read the article "Black Spot in the Air" (***Reference 1***). I would like to add to the article my information about others mysterious cases. For one case I was an eye-witness.

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In 80-s I worked on faculty of physics of Moscow Institute of Geodesy and Cartography, where I was engaged in scientific job connected to physics of the sea and ocean. In July, 1983, I had a scientists trip on a hydrographic vessel which went from Vladivostok to Petropavlovsk. Our major job was near Kuril ridge. There was no interesting in the trip, usual scientists trip, neither storm at the sea nor good weather - more often fog, the vessel slightly swings in drift on the sea, thick sea birds sit on water and wait for the next portion of meals. The temperature of the sea was + 4 C degrees, air + 6 C, on a wet deck is cold.

I share cabin with a good boy, Victor, he was a hydrograph from Nahodka. Last inmate of the cabin leave an acoustic system in cabin fitted case. I decided to make a simple middle wave receiver inside the acoustic system. So, when the receiver was ready I have installed outdoor (I can correct, "outcabin") antenna. It was a wire going out cabin window to life-boat and then to a mast.

Moscow Institute of Geodesy and Cartography (Picture of 2005 y.)

The receiver worked perfectly. We can hear very loud and clear two Japanese middle- wave stations that were broadcasting in Japanese language. That was not interesting... Except an early morning. In the morning the stations broadcasted morning gymnastic, in Japanese of course. Certainly we did not understand Japanese, but to listen the broadcasting was so funny that we laugh loudly at least five minutes- it was ours excellent morning gymnastics for all day.

So in one foggy morning I turn on the receiver and… Nothing to hear. I begin to search for malfunction in the receiver. While a time Victor came back from breakfast and told me that receiver in the cabin - company is broken too, so, it would be better for me to repair that receiver. After that I began to suspect, that both receivers are right, malfunction is in the Air.

In the cabin - company the large tube receiver "Belarus" only hissed a little but it was received absolute nothing. Usually the receiver plays very loud Petropavlovsk not so loud Habarovsk, Vladivostok and Magadan. I took my breakfast very quickly and then went to ship radio operators.

Map with pathway of the Vessel

Receiver R- 250, USSR, 1970-S

Receiver Belarus, USSR, 1962

Right at the beginning of the voyage I have repaired their tube VHF transmitter (it begun provided communication on to tens miles instead of hundred meters before). The ship receiver R-250, with the regular ship aerial for long and middle waves, had received nothing on to the waves. The Air was live only higher 3.8 MHz, I heard powerful station from the American Navy Base on Guam. Then, others Japanese and Asian stations were broadcasting.

The radio operators were not surprised by the phenomenon. They told me such effect not too rare here. We hear nothing at the long and middle waves for two or three days. After that, the Air began gradually to be live. This case I briefly described in my article "Forgotten meteorology " (***Reference 2***).

The publication had lot of feedback. One of readers, A. K. Pastuhov from Podmoscovie, has presented me used, but accurately bound book of D. N. Nasilov "Radiometeorology." The book was in my references list.

Quote from the book, page 98:

"At flight of June 9, 1936 at 8.00 p.m., above Moscow on a plane through cold air front took place breakage of communication. When the plane go through the cold front, radio operator did not hear Moscow HF station which was on the reverse side of the cold front on distance 15 km from the plane, but they heard very loud HF radio from Smolensk (several hundreds km) that was at the same side (with the plane) of the cold front…"

Lots similar cases were written in the book. For example, was written phenomenon of losses communication on VHF between two planes when the planes were divided by clouds.

N. Nasilov explains this effect by refraction on the layers of fog or clouds. I have accepted this explanation as a working hypothesis. Recently, attentively read all feedback on my article, to Kovalev article (Reference 1) and with publication by I. Grigorov "Antennas in the mountains" (***Reference 3***) I understood that the explanation is not enough. Not any fog or cloud strongly absorbs radio waves.

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We need some more conditions. I believe the main condition is electrization of drops of clouds or fog. To absorb radio waves the fog or cloud should have conductivity. At this case, the cloud not only screening antennas, drops of the cloud absorb energy of the wave. In depend of the sizes of drops the cloud may have frequencies of heavy absorption. The frequencies may be at LW, MW, HF or VHF ranges.

The electrization can be called the by the different reasons: flares on the Sun, tectonism, and so on. However, probably, the main reasons of the electrization are in process of evaporation - condensation (that, in particular, results to electrization of clouds) and in downpours of space particles, which are common at poles and in auroral zones, where, accordingly, we notice more cases of abnormal absorption.

References:

1. Black holes in the ether: by Sergey A. Kovalev, USONE:- Antentop -1, 2003: http://www.antentop.org/

2. Vladimir Polyakov, ""Forgotten meteorology" - Radio, 2004, № 7, pp.: 29, 30. (in Russian)

Also see: ftp://ftp.radio.ru/pub/2004/07/29.shtml

3. 3. Antennas in the mountains: *By Igor Grigorov, RK3ZK* :- Antentop -1, 2003: http://www.antentop.org/

The cloud does absorption of Radio Waves

http://www.qrp.ru/