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ANTENTOP is ***FREE e- magazine***, made in **PDF**, devoted to antennas and amateur radio. Everyone may share his experience with others hams on the pages. Your opinions and articles are published without any changes, as I know, every your word has the mean.

Every issue of ANTENTOP is going to have 100 pages and this one will be paste in whole on the site. Preview's files will be removed in this case. I do not know what a term for one issue will need, may be 2-3 month or so. As I have counted, a whole issue of ANTENTOP will hold nearly 10 - 20 MB .

A little note, I am not a native English, so, of course, there are some sentence and grammatical mistakes there… Please, be indulgent!

Preview: Some articles from "cooking" issue will be pasted for preview on this site, others no. Because, as I think, it must be something mysterious in every issue.

Note, in preview, ALL files more than 200 KB are zipped.

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73! ***Igor Grigorov***, RK3ZK

ex: UA3-117-386, UA3ZNW, UA3ZNW/UA1N, UZ3ZK

op: UK3ZAM, UK5LAP,EN1NWB, EN5QRP, EN100GM

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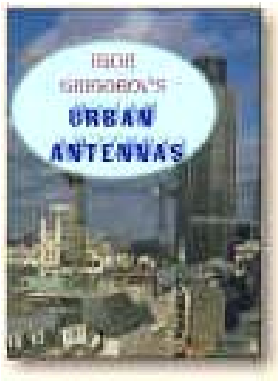
URBAN ANTENNAS - Volume 1



"...I constructed and tested hundreds of varieties of different types of antennas, which I put up and then hide on my radio set. This experience allowed me to realize I could still launch radio waves by coupling them into the ether with small antennas and still enjoy normal amateur operations, even though none of the neighbors ever suspected that there was a radio amateur working near by.... Igor Grigorov, RK3ZK"

Contest:

Part I **Invisible and Substitute Antennas**

Invisible Antennas
High-Altitude Invisible Antennas
Substitute Antennas

Part II **Antennas for Special Bands of Frequencies**

Antennas for 136 kHz
Urban CB Antennas

Part III **Special Antennas**

Underground & Spreading Antennas
Making Antennas with Coax
Making TV Antennas work for Amateur Radio
Multi-Purpose Antennas

Antenna Tuning & Adjustments – Volume1

" Having trouble getting that new antenna to work — or work very well? Or, do you want to see if you are getting the most you can out of the antenna — whether big or small — or whatever type you may have chosen to use? How do you even know if your antenna is doing its very best? This book tells you how to know — how to tune and and make proper adjustments — how to see your signal signal flow through the antenna! If you care about your signal, this book is a must for you! *Igor Grigorov, RK3ZK"*

Contest:

Part I: **Voltage Current Power & Field Measurements in Antenna Adjustments**

High-Frequency Voltage Measurements
Measurement of High-Frequency Current
Measurement of RF Power
Measurement of Electro-Magnetic Fields

Part II: **Antenna Feed Parameter Measurements**

SWR Meters on Directional Couplers
HF Bridges
High-Frequency Generators for RF Bridges
A Noise Bridge

Part III: **Alternative Methods of Antenna**

Parameter Measurements
The Grid Dip Oscillator
Measuring Amplitude vs AFR Characteristics
Using T-connectors in Radio Operations

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Antenna Theory

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Introduction into Antenna Studies: *by Prof. Natalia K.Nikolova*

1 Dear friends, I would like to give to you an interesting and reliable antenna theory. Hours searching in the web gave me lots theoretical information about antennas. Really, at first I did not know what information to chose for ANTENTOP. Finally, I stopped on lectures “Modern Antennas in Wireless Telecommunications” written by Prof. Natalia K. Nikolova from McMaster University, Hamilton, Canada. 5

EH ANTENNAS: *by Ted Hart W5QJR*

2 Ham Radio has been a birthplace for and nurtured many important inventions and discoveries. I have participated in some of those and benefited from others over the last 55 years that I have held the call W5QJR. Although I have previously presented new concepts to Hams (including the Antenna Noise Bridge in 1967 and the Small High Efficiency Loop Antenna in 1984), I now have the privilege and opportunity to present one more, one that will benefit every Ham. 14

I trust in EH antennas! *by Igor Grigorov, RK3ZK*

3 I carried out many experiments with CFA- EH antennas, well, not all my experiments were successful, but some of these experiments have forced me to trust in opportunities of CFA- EH antennas. I hope, that I be able to finish my experimenters with the antennas up to level when I could publish my work not being afraid that I will undergo to severe criticism. But now I want give you some examples of CFA- EH antennas in ex- USSSR Military Forces. 21

Practical Design

Nonlinear effects on antennas: *by Igor Grigorov, RK3ZK*

4 TVI and RFI appeared suddenly when my transceiver worked on amateur ranges of 10-20 meters. Earlier the transceiver worked everywhere without TV and FM radio interferences. I did not do anything either to the transceiver or the antennas. For search of the cause of interferences the transceiver was switched off from the outside antenna and loaded to a dummy load. No interferences! The transceiver was switched on to the indoor magnetic loop. Again, no interferences! Interferences appeared when the transceiver was switched on to the outside antenna. An additional low-pass filter at transceiver output did not influence the level of arising interferences. ***So, located on a roof antenna was the source of interferences.*** 23

Multi- Range Vertical Antenna UA1DZ: *by Igor Grigorov, RK3ZK*

5 Antenna UA1DZ is a very interesting multi- range vertical antenna designed by known Russian radio amateur UA1DZ. The antenna was very popular in use in the former USSR. Russian radio amateurs widely use the antenna at present days also. The antenna works with a low SWR on 40-m, 20-m and 15m. Firstly UA1DZ told about his antenna in the ether, and after that, lots Russian radio amateurs have did the antenna and Antenna UA1DZ became very popularity. 29

Hula- Hoop magnetic Loop: *by Yuri Kazakevich, EW6BN,*

6 After long QRT (birth of my daughter, changing my QTH) I was going again RV!!! So, I needed an antenna! But where can I install it? It was not possible to install any antenna on the roof of my house. I had only place for installation of an antenna, the place was my balcony of my house. Well, it was very place. What an antenna can install at the place? I though, it was only a Magnetic Loop Antenna. 30

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Once again about a magnetic loop … *by Igor Grigorov, RK3ZK*

7 For those hams who want to engage in experiments with magnetic loops on basis of hula- hoops, I have made calculations of magnetic loops antennas made on basis of hula-hoops with diameter 77 cm and 100 cm. 32

Twins Delta Loop for 145 MHz: *by Nick V. Derenko, US8AR*

8 35

Just a Twins Delta Loop for 145 MHz

Keys for QRP- expeditions**:** *by Igor Grigorov, RK3ZK*

9 37

The two articles, putting below, were published at SPRAT, the journal of the G-QRP – C # 114 and 115 accordingly. However, I think, the keys will be interesting for all amateurs.

QRP beyond belief: *by Igor Grigorov, RK3ZK*

10 38

Work on QRP is wonderful when with only several watts of power to do a DX QSO. But the surprise is especially great if a radio amateur does not know that he works on QRP... later he looks into his log and does not belief it! About such improbable work on QRP I want to tell.

Old computer's PSU gives useful parts for antennas: *by Igor Grigorov,* **RK3ZK**

11 A personal computer has become an ordinary thing in the recent time. Nearly every radio amateur has his own personal computer. With the course of time some computer's blocks fail and are replaced by new ones. Soon the old computer is replaced by a new one. Finally, a radio amateur accumulates faulty computers as well as faulty and unnecessary computer's pieces. But do not throw away the faulty pieces! It is possible to find useful applications for them in a ham practice. This article is a chat about the practical usage of an output transformer from a faulty old Power Supply Unit (PSU). 40

136 kHz LF

Superloop receiving antenna for 136kHz: *by Peter Dodd, G3LDO,*

12 About a year ago I made a receiving loop for 136kHz using computer ribbon cable housed in plastic waste pipe. It wasn't very successful. It would appear that the low Q caused by the construction of the ribbon cable was the problem. I have since made the G3LNP loop although I had difficulties with the amplifier. I finished up using a low impedance pick-up loop without the amplifier - this worked reasonably well but it did lack sensitivity. I decided to redesign the plastic waste pipe special because if its inherent weather resistant structure 45

Measuring the earth resistance of an LF-antenna system:

by Dick Rollema, PAOSE

13 There were some requests for info on the way I measured the earth resistance of my antenna system. In 1988 …. 48

14 ***The First Russian LF expedition:*** *by Ed, RU6LA* 49

Just photos

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Propagation

Antennas in the mountains: *By Igor Grigorov, RK3ZK*

15 — Those radio amateurs who are going on a high-mountain radio expedition must know about the following thing. Clouds and snow do harmful effect to antennas in the mountains. During my previous mountain trips I ran into this effect. — 50

Antenna – Island: *by John Doty*

16 — Another surprise was longwave. I'd never really heard any longwave broadcasters before. From my home in Bedford, Massachusetts I can occasionally hear a word or two in between noise bursts and beacons, but never anything listenable. However, from the island I found that I could often hear European longwave broadcasters …. — 56

Pedersen ray propagation: *by Robert Brown, NM7M*

17 — Pedersen ray propagation takes place at the transition from one ionospheric region to another, the lowest being between the top of the E-region and the bottom of the F1-region while the highest at the F2-peak which divides the bottom and topsides of the F-region. — 58

Earth Shadow, propagation related to earth shadow:

18 *by Michael Higgins, EI 0 CL,* — 60

Not well understood it seems but the Earth Shadow has an enormous effect on over the horizon single and multi hop propagation on the HF bands.

LDE, another look to inexplicable effect: *by Igor Grigorov, RK3ZK*

19 — Sometimes we receive strange radio signals delayed compare to sent radio signals. The delaying time may take up to 30 minutes! We do not know yet, where the signals travel in the delaying time. Modern experiments confirm LDE, and scientists keep silence about the inexplicable effect. Only supporters of UFO respond to it confidently… — 61

EARTH ACUPUNCTURE: ***Feedback on the problem…***

20 — I think, that our planet, the Earth, has specific spots, which are almost identically to acupuncture spots placed on a human body. I called them “White Spots”, “Black Spots” and “Inverse Spots”. We have a good radio transmitting or receiving in White Spots, very bad radio transmitting or receiving in Black Spots, and we have some strange things in Inverse Spots. I guess, that many of hams do not agree with me. They say, “The propagation of radio waves obeys only to known laws. Okey, I do not want to argue with the hams, I only want to show my FEEDBACK. But, before the FEEDBACK, I want to tell once more my observation of the unusual effect, called ***EARTH ACUPUNCTURE***. — 62

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Black holes in the ether: *by Sergey A. Kovalev, USONE,*

21 In the beginning I shall quote Igor Bunich's book " Fuhrer's Pirates". The book describes one strange event, which was while a campaign of German raider "Atlantis" at the end of August, 1941…. 71

History

Russian Far and Near Space Antennas: *by Alexey EW1LN,*

22 All of the Antennas are located near Evpatoria, between village Vitino and Molochnoe….. Just photos with comments 74

Recognizing some of the many contributions to the early development of wireless telegraphy: *by Leonid Kryzhanovsky St. Petersburg, Russia and James P. Rybak Grand Junction, CO USA*

23 At an earlier date, Popov had written: "The credit for the discovery of the phenomena which have been taken advantage of by Marconi is due to Hertz and Branly; then go a number of applications initiated by Minchin, Lodge and many others after them, including myself; and Marconi was the first to have the courage to take his stand on a practical ground and reached large distances in his experiments" 76

Fessenden and Marconi: Their Differing Technologies and Transatlantic Experiments During the First Decade of this Century *by John S. Belrose, VE2CV*

24 Many scientists and engineers have contributed to the early development of electromagnetic theory, the invention of wireless signaling by radio, and the development of antennas needed to transmit and receive the signals. These include, Henry, Edison, Thomson, Tesla, Dolbear, Stone-Stone, Fessenden, Alexanderson, de Forest and Armstrong in the United States; Hertz, Braun and Slaby in Germany; Faraday, Maxwell, Heaviside, Crookes, Fitzgerald, Lodge, Jackson, Marconi and Fleming in the UK; Branly in France; Popov in the USSR; Lorenz and Poulsen in Denmark; Lorentz in Holland; and Righi in Italy. The inventor of wireless telegraphy, that is messages as distinct from signals, is Italian-born Guglielmo Marconi, working in England; and the inventor of wireless telephony is Canadian-born Reginald Aubrey Fessenden, working in the United States. 86

25 ***Black Magic Design: The Complete Smith Chart*** 100