

# ANTENTOP

ANTENTOP 01 2007 # 009

ANTENTOP is **FREE** e-magazine devoted to **ANTENna's**

**1-2007**

**Theory,  
Operation, and  
Practice**

*Edited by hams for hams*

**In the Issue:  
Antennas Theory!**

**Practical design of HF-VHF- UHF  
Antennas!**

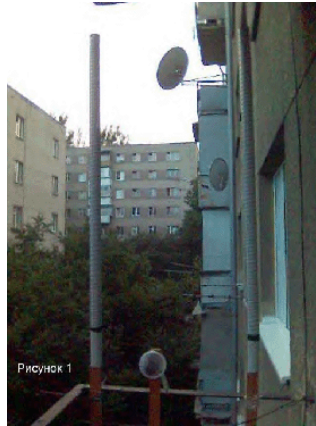
**Home brew Technique!**

**Propagation!**

**QRP!**

**And More....**

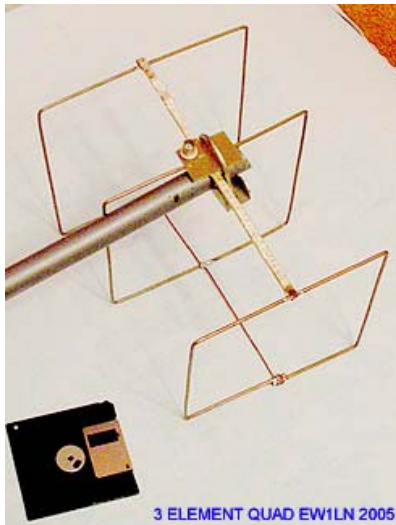
**EW1LN 433-MHz Quad**



**UR5WCA Antenna  
EDITORIAL:**

**Thanks to our authors:**

**Prof. Natalia K.Nikolova  
N. Filenko, UA9XBI  
Valeriy Prodanov, UR5WCA  
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Alexey Kostyuk, EW1LN  
ex RB5VD  
V. Polyakov, RA3AAE  
Kluyihin Alexandr, RU3GA  
G4AYO  
And others.....**



Well, my friends, new ANTENTOP – 01 -2007 come in! ANTENTOP is just authors' opinions in the world of amateur radio. I do not correct and re-edit yours articles, the articles are printed "as are". A little note, I am not a native English, so, of course, there are some sentence and grammatical mistakes there... Please, be indulgent!

ANTENTOP 01 –2007 contains antenna articles, and several historical articles. Hope, it will be interesting for you.

Our pages are opened for all amateurs, so, you are welcome always, both as a reader as a writer.

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**73! Igor Grigorov, VA3ZNV**

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**Welcome to ANTENTOP, FREE e - magazine!**

**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 8-10 month or so. A whole issue of ANTENTOP hold nearly 10 MB.

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

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Dear friends, please, note, I respect Copyright. Always, when I want to use some stuff for ANTENTOP, I ask owners about it. But... sometimes my efforts are failed. I have some very interesting stuff from closed websites, but I can not go to touch with their owners... as well as I have no response on some my emails from some owners.

***I do not know, why the owners do not response me. Are they still alive? Do their companies are a bankrupt? Or do they move anywhere? Where they are in the end?***

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Email: [antentop@antentop.org](mailto:antentop@antentop.org) subject: **igor\_ant**

73! **Igor Grigorov**, VA3ZNW

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op: UK3ZAM, UK5LAP, EN1NWB, EN5QRP, EN100GM

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**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.

**Publishing:** If you have something for share with your friends, and if you want to do it **FREE**, just send me an email. Also, if you want to offer for publishing any stuff from your website, you are welcome!

***Your opinion is important for me, so, contact if you want to say something!***

I have a big collection of pictures, I have got the pictures and stuff in others ways, from **FREE websites**, from commercial CDs, intended for **FREE using**, and so on... I use to the pictures (and seldom, some stuff from closed websites) in ANTENTOP. ***If the owners still are alive***, please, contact with me, I immediately remove any Copyright stuff, or, if it is necessary, all needed references will be made there.

and, they will do this work, and we will see lots interesting articles there.

So, if you want to put a commercial advertisement in ANTENTOP, please contact with me. A commercial advertisement will do ANTENTOP even greater interesting and various! I hope, readers do not mention against such commercial ads.

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### Antenna Theory

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#### **Polarization and Related Antenna Parameters : by: Prof. Natalia K. Nikolova**

- |   |  |       |
|---|--|-------|
| 1 | <p>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.</p> <p>Now I want to present to you one more very interesting Lecture - it is Polarization and Related Antenna Parameters</p> <p>Polarization of EM fields - revision. Polarization vector. Antenna polarization. Polarization loss factor and polarization efficiency.</p> | 5- 21 |
|---|--|-------|

### HF- Antenna Practice

#### **BA- Butterfly Antenna : by: N. Filenko, UA9XBI**

- |   |   |        |
|---|---|--------|
| 2 | <p>The antenna is a version of a shunt fed loop (Reference 1). However, the antenna has some advantage compare to its prototype</p> | 22- 26 |
|---|---|--------|

#### **UR5WCA Balcony Antenna for 7, 10 and 14 MHz: by: Valeriy Prodanov, UR5WCA**

- |   |   |        |
|---|---|--------|
| 3 | <p>As I am an urban resident I have not a sufficient place for my antenna. My balcony placed at 2- floor at 5- store building is my sole antenna polygon. So, I have done a balcony antenna for my favorite 7, 10 and 14 MHz- ranges. It is a helical vertical that can be matched for these bands.</p> | 27- 29 |
|---|---|--------|

#### **Circle Antenna: By Simuhin Aleksandr, RA3ARN**

- |   |   |    |
|---|---|----|
| 4 | <p>How is it happened that I did the antenna? Propagation on the 10 meter band pushed me to do the antenna. Propagation was coming, but I had not any antenna at my cottage. I really need an antenna. I have red at a text book that antenna having shape like a circle has a good characteristics. So, I decided to do a "Circle Antenna" and went to a local Home - Repair store for stuff for the antenna</p> | 30 |
|---|---|----|

### Receiving Antennas

- |   |   |        |
|---|---|--------|
| 5 | <h4><b>Mystery of the Broom Antenna : by: V. T. Polaykov, RA3AAE, Ph. D in technical science</b></h4> | 31- 38 |
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Well known in Russia broom antenna has some mysterious property. What is the property- the puzzle try to solve Vladimir Polaykov.

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	Just Design of Triplet Quad for 433 MHz	
	<b>VHF Antennas</b>	
<b>8</b>	<b>144-MHz Antenna for Satellite Communication : by: ex RB5VD</b>	<b>42</b>
	The simple antenna was tested at satellite communication. Signals from an amateur satellite (when the satellite was in visible sphere) were fine. Also the antenna worked well at local and DX QSOs.	
	<b>SIMPLE KEYS</b>	
<b>9</b>	<b>Simple Iambic Key on PIC16F628A: by Kluyihin Alexandr, RU3GA</b>	<b>43- 45</b>
	Just very simple Iambic Key made with PIC16F628A	
	<b>TRANSCEIVERS</b>	
	<b>Tube - Semiconductor Transceiver (TST) : by: va3znw</b>	
	Transceiver TST was published in my book- "QRP Transceivers and PAs from Accessible Parts "	
<b>10</b>	The book was published by me (on my own expenses) in 1991, in Belgorod, Russia. I had printed 2000 samples of the book. The book describes kits which my own company ("Vibrissa") produced at the times. First such kit was transceiver TST. Were produced 400 kits of TST (Tube- Semi- conductor- Transceiver) near 50 of them were assembled by me for customers. Of course, may be some design of the transceiver seems to be old for the days, but what I can say, the transceiver works, and works not bad.	<b>46- 57</b>
	<b>RECEIVERS</b>	
	<b>Simple SWL HF- VHF Receiver: From the book "DX Reception" (by Igor Grigorov (RK3ZK), Belgorod, 1994), pp.:76- 81.</b>	
<b>11</b>	Using only 4 cheap surplus transistors and 1 mixer SBL- 1 you can do a HF- VHF receiver that provides good reception on HF (12- 29- MHz) and ex- Soviet BC FM VHF- 61- 88 MHz. Receiver catches AM and FM with deviation more the 25 kHz. Such receiver allows very quickly to find a propagation on the spectrum of HF and VHF bands.	<b>58-63</b>

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### *PROPAGATION*

#### Long Delay Echoes

- 12 LDE... Several articles on LDE were published at Antentop (use google search engine to find all articles at the site). Evidence of different people from different countries shows that LDE is not a myth, LDE is the reality.
- Subject "LDE" at www.qrz.com was appeared at hot summer 2007. Lots interesting commentaries were at the topic. Some of the replies (thanks for courteously permission of the authors) were pasted here. Next ball to reality of the LDE 64- 67

#### *Time Warp*

- 13 Article Radio Signals out of Our Times was published at Antentop 01- 2006 as well as at www.cqham.ru. Below I paste only the feedback on the article from www.cqham.ru. Also I paste a feedback received by me on my email. You see, another hams also have met something like Time Warp in the Air.... 68-70

### QRP Homebrewer

- 14 **Key for K1 : by: va3znw** 71  
Just photos and schematic of an easy- build home- made key....

### *Free e- book*

#### **"QRP Transceivers and PAs from Accessible Parts ": by Igor Grigorov, UA3ZNW**

**(\*pdf), 28 pages.**

- 15 Book in Russian. The book was published by me (on my own expenses) in 1991, in Belgorod, Russia. I had printed 2000 samples of the book. Of course, it was not best paper used for the book as well as not good quality of printing. The book describes kits which my own company ("Vibrissa") produced at the times. Naturally, the book was the manual for the kits. Were produced 400 kits of TST (Tube- Semi- conductor- Transceiver) near 50 of them were assembled by me for customers, 200 kits SQT (Semi- conductor- Quartz- Transceiver), near 30 were of them were assembled by me for customers, 200 kits of PA, near 60 were of them were assembled by me for customers. 72
- Of course, the book will be interesting for all amateurs, not only for QRP- fans. Book weights 6,2 MB, so, it may take time to download.

Below you can see the Contents of the book and path to download.

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	<b><i>DX Reception.: by Igor Grigorov, RK3ZK</i></b>	
	Book in Russian "DX Reception" was published by me in 1994, in Belgorod, Russia. It was printed (for my own expenses) 2000 samples of the 96- pages book. Only 1 of them I have in my stock for now.	
<b>16</b>	<p>A long time I have been a fan of DX- SW radio reception. Till now I with great enjoy listen SW radio. It is really fan for me. The book contains description of antennas, some useful circuits, advices for DX- reception. All the antennas and circuits were proved by me.</p> <p>Book weights 13,3 Mb, so, it may take time to download.</p> <p>Of course, the book will be interesting for all amateurs, not only for fan of DX- SW Radio..</p> <p>Below you can see the Contents of the book and path to download.</p>	<b>73- 74</b>

## HISTORY

	<b>RAEM/mm Is My Callsign: by Ernst Krenkel, RAEM. (Translated in English by G4AYO</b>	
<b>17</b>	<p>The last voyage of E.T. Krenkel - a voyage to the Antarctic Circle, took place in 1968. He headed a voyage of the scientific-research vessel Professor Zubov, which was bound for the shores of Antarctica to relieve its staff of winterers found there, and also for oceanographic research.</p> <p>Below we publish extracts from the diary of E.T. Krenkel, which he kept during the voyage on the Zubov. He was a gifted narrator, graphic, with apt language in which were no trite sentences or clumsy wording. Ernst Teodorovich appears before us as a very ordinary man who with boyish ardour is concerned with his daily watch on the air for radio amateurs.</p>	<b>75- 79</b>

## Application for HF- VHF radio amateur station

	History goes away out of us... We lost in time papers, things and may be something else. That is why AntenTop published some old papers, old schematics, old photos.	
<b>18</b>	<p>At this stuff you can see a copy of an application for a radio-amateur station. This application was used from 1965 till 1995 in the USSR, then in Russia.</p> <p>Below you can see the translation of the application and the scan of an original paper.</p>	<b>80- 82</b>

## Old Equipment

<b>19</b>	<b>Russian Receiver R- 311</b>	<b>83- 84</b>
	Just brief description, photos and schematic diagram.	
	<b>Russian Receiver R- 326</b>	<b>85-88</b>
<b>20</b>	Just brief description, photos and schematic diagram.	

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<b>22</b>	<b>FM Radio Channels and Frequencies</b> Just List of frequencies/Channels used by FM Radio	<b>90</b>
<b>23</b>	<b>One Coil Loop: Igor Grigorov, RK3ZK</b> Hams often use One Turn Loop in their homebrewing. Such Loop may be used in a transmitting/receiving HF- VHF Magnetic Loop Antenna , in a simple VHF oscillator working on transmitting without antenna , in receiving VHF antenna for simple VHF receiver.	<b>91- 92</b>
<b>24</b>	<b>Inductor Data</b> It is easy to find the inductance of an inductor using equation shown on Figure 1. However, very often ham use for implementation of the inductor some normalized forms. So, it is possible to do tables that are contained data for such forms. Just tables with inductance data.	<b>93- 96</b>
<b>25</b>	<b>Lightning Tank Calculator</b> Very often an amateur need calculate parameters of resonator tank (see Figure ). Certainly, there are lots programs that can do the calculations. However very quick and with acceptable tolerance amateur can do it using given here Table.	<b>97</b>
<b>26</b>	<b>Capacitor Code</b> Just Number, Letter and Color Capacitor Code	<b>98-99</b>
<b>27</b>	<b>Inductor Color Code</b> Just Inductor Color Code	<b>100</b>

