

ANTENTOP

ANTENTOP 01 2011 # 015

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

1-2011

**Theory,
Operation, and
Practice**

Edited by hams for hams

**In the Issue:
Antennas Theory!**

Practical design of HF Antennas!

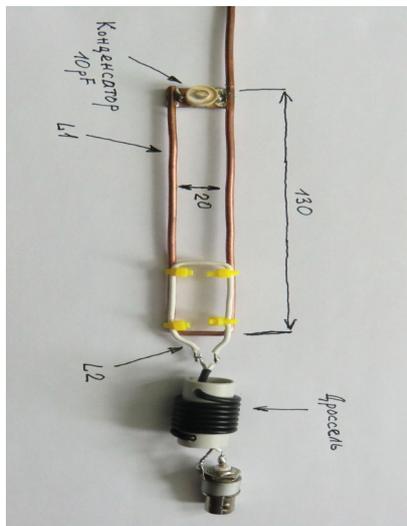
Underground Antennas!

**Practical design of VHF/UHF
Antennas!**

Regenerative Receiver!

And More....

**DL1BA Fuchs Antenna
for the 2- meter Band**



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Efficient Dipole Antenna

UA6HJQ



EDITORIAL:

Well, my friends, new ANTENTOP – 01 -2011 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 –2011 contains antenna articles, description of antenna patent, Regenerative Receiver. 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.

73! Igor Grigorov, VA3ZNW

ex: RK3ZK, UA3-117-386, UA3ZNW, UA3ZNW/UA1N, UZ3ZK

op: UK3ZAM, UK5LAP, EN1NWB, EN5QRP, EN100GM

Thanks to our authors:

Prof. Natalia K.Nikolova

Nick Kudryavchenko, UR0GT

Boris Krivosheev, R9WI

Igor Lavrushov, UA6HJQ

Vladimir Semenov, RU4SJ

Roman Sergeev, RN9RQ

And others.....



Contact us: Just email me or drop a letter.

Mailing address:
209- 5879 Bathurst Str., Toronto,
ON, M2R1Y7, CANADA

Or mail to: antentop@antentop.org
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subject: **igor_ant**

73! **Igor Grigorov**, VA3ZNW

ex: UA3-117-386, UA3ZNW, UA3ZNW/UA1N, UZ3ZK, RK3ZK

op: UK3ZAM, UK5LAP, EN1NWB, EN5QRP, EN100GM

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Antenna Theory

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Cylindrical Antennas - Classical Theoretical Models: 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. **5- 24**
- Now I want to present to you one more very interesting Lecture - it is **LECTURE 9: Cylindrical Antennas - Classical Theoretical Models.**
- Reciprocity theorem. Self-impedance of a dipole using the induced emf method. Pocklington's equation. Hallen's equation...

HF- Antenna Practice

- Super Broad Band HF- VHF Antenna: Igor Lavrushov, UA6HJQ**
- 2 I desperately need in RX/TX antenna that could be work at HF- VHF bands without any tuning. The antenna should be work at any conditional and should be simple in design. Below you find description of my design of such antenna... **25- 27**
- Vertical for the 20- meter Band: by: Boris Krivosheev (R9WI ex RA9WFD)**
- 3 The antenna design is based on the known "Bazooka" antenna... **28- 29**
- Helical Antenna for 20 meters Band: by: Vladimir Semenov (RU4SJ)**
- 4 Antenna bandwidth 13.941- 14.504 MHz. SWR 1.0:1.0 at 14.207 MHz. The Helix Antenna was fed by 75- Ohm coaxial cable in 15.82- meter length... **30**
- Urban Antenna: by: Vladimir Semenov (RU4SJ)**
- 5 I have to use the antenna with a transceiver with RF- power 87- Wtts. Antenna was installed at a balcony in the second store of a multi- store building. Direction of the balcony is to the South. Antenna was tested at 80, 40 and 20- meter Band. **31- 32**



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Design of a simple EH- Antenna for the 20- meter Band ...	
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Multiband Vertical Stub Antennas: by: Roman Sergeev (RN9RQ)	
Before describing of the antennas I would like to talk why those ones were designed. At fall 2009 the Youth Collective Radio Station RK9QWN had to change room inside the building. Old antennas were removed because the roof was repaired. So it needed to install new antennas. The question was- what should be the antennas like?	
8	38- 39
Asymmetrical Trap Dipole Antenna: by: Roman Sergeev (RA9QCE)	
Ham knows and widely used to the Symmetrical Trap Dipole Antennas. Classical example of such antenna is W3DZZ antenna. At my opinion such antennas has just one benefit- patterns of the antennas are almost the same at the different bands. However, the antennas have lots disadvantages. There are heavy weight, complexity in design, large enough windage, the narrow bandwidth at the lower bands, high SWR at some bands.	
Asymmetrical Dipole Antennas (that are used by hams) are free from some of lacks of the Symmetrical Trap Dipole Antennas. However the main lack of the Asymmetrical Dipole Antennas is the main lobe of the diagram directivity at lower bands is toward to main lobes at the other upper bands.	
An antenna that is almost free from the disadvantages was design by me by combination of these two types of antennas- Symmetrical Dipole Antennas and Asymmetrical Dipole Antennas. I called the new one prototype "Asymmetrical Trap Dipole Antenna."	
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Vertical Open Stub Antenna for the 40 and 20- meter Band: by: Nikolay Kudryavchenko, UR0GT	
The antenna has enough good parameters at the 40 and 20 meter Bands. Antenna does not need any counterpoises. Antenna should place at some distance (say more the 1- meter) above the ground. To prevent radiation from the outer braid of the coaxial cable a good RF- Choke should be installed at the feeding terminals...	

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- The both antennas have resonance at 160 and 80- meter bands. There are hi- ohmic antennas, so, these ones need an ATU for the feeding
- 11** **MOXON for 15 and 10- meter Bands: by: Nikolay Kudryavchenko, UR0GT** **49- 51**
- It is just Optimized Moxon for the 15 and 10- meter Bands.
- 12** **Antenna “Strela”: by: UA4SZ Valery Kiselev** **52- 55**
- Antenna Strela (in transcription from Russian it means “Arrow”) is a modification of the well-known dipole antenna Bazooka that is widely used by hams.
- However antenna Strela is contained less stuff for manufacture, antenna Strela is lighter then antenna Bazooka. Antenna Strela has good matching with the coaxial cable and SWR of the antenna on the working Band looks like better then Bazooka could provide there
- 13** **Efficient Field Low Height Dipole Antenna for the 20- meter Band: by: Igor Lavrushov, UA6HJQ** **56- 59**
- The antenna was designed for using in a mountain hiking where the main requirement is a low weight and high efficiency at the limited stuff around there.

VHF- UHF- Antennas

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- Simple design of a vertical YAGI antenna for the 2- meter Band



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