Newsletter of the West Rand Amateur Radio Club.

April 1998.

Nuusbrief van die WesRand Amateur Radio Klub.

Forthcoming National Events:

MAY '98.

1/2/3: SARL AGM/Convention.
4/10: ITU Africa Telecom'98.
10 : SARL 10M QSO Party.
16 : World Telecommunication Day.
21 : Radio Amateur's Exam.
30/31: CQ WPX CW Contest.

JUNE '98.

6/7 : IARU R1 CW field day.
20/21: IARL All Asian CW Contest.
21 : SARL QRP Contest.

NOTE:

Boot sale at West Rand Club 30 May 1998. Listen to the Bulletin for time.

EDITOR.

BULLETINS:-

Sundays @ 11h30 SAST

145.625 FM
7.066 LSB
10.135 USB
+ Wefax Daily @ 52.745 FM

FROM UNDER THE CHAIRMAN'S TABLE.

Feed back checks your SWR, Feedback checks your Blood Flow, what makes the difference in almost anything you want to try in life, are you giving us yours? Is Your Club Tasty, Is it Sweet, or does it make your blood boil. Or is there Some Wacky Reason (SWR) we are on the wrong path. Do we have your correct family details, Birthday, Anniversary dates, Phone and Fax No's, Even Address's.

Please let us know at a meeting. A committee meeting or through a committee member, its the only way to let us know what we are doing wrong .... Or Right.

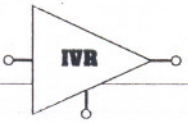
Wal.

Visit the SARL Website at:

WWW.SARL.Org.Za

BIRTHDAY LIST: May 1998.

1	Ron ZS6BHH & Pats Anniversary.
2	Gerda - Daughter of Hennie ZS6BSF.
3	Viv ZS6CAA .
3	Pat - XYL of Ron ZS6BHH.
13	Gus ZS6GRP & Rina's Anniversary.
19	Dave ZS6ACC.
24	Gys ZS6GDP.



THE ORIGINS OF RADIO.

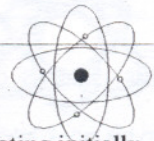
In his book Treatise on Electricity and Magnetism, published in 1873, James Clerke Maxwell brought together the known facts concerning light, electricity and magnetism. Developing from his postulation of the electromagnetic theory of light was the prediction that other waves existed which would propagate through space with a velocity equal to that of light. These would be produced whenever oscillatory currents were set up and would obey the classical laws of geometric optics.

In 1879 Professor D.E. Hughes of London demonstrated to a group of distinguished scientists that it was possible to transmit signals over several hundred yards without the use of interconnecting wires. His first experiments were conducted in his own home but on later occasions he walked up and down Great Portland Street with a telephone receiver to his ear, hearing signals up to a distance of almost 500 yards from the transmitter. For these demonstrations he used an induction coil for the transmitter and a micro phonic joint with a telephone earpiece as a receiver. It is interesting to note that much of Professor Hughes' early apparatus now has a permanent home in the Science Museum in London.

Some five years later a Professor Onesti demonstrated that if iron filings were placed in a tube of insulating material between copper electrodes, the application of a fairly high voltage could cause them to cohere, or stick together sufficiently to allow a current to pass. Revolving the tube decohered them.

In 1889 Oliver Lodge again demonstrated the same phenomena, this time between two metal spheres, and later manufactured a coherer using a micro phonic contact between a watch spring and an aluminum plate. Some two years later Professor Branley verified the previous experiments and also demonstrated that the filings could be made to cohere by an electrical discharge in the vicinity of, but not connected to, the coherer. Oliver Lodge recognized the importance of Branley's coherer and further improved it by adding a mechanical tapper to return the filings to a non-conductive condition. Using this apparatus he demonstrated equipment with a range os 150 yards to the British Association but failed to realize the potential of the device.

Meanwhile the existence of these waves was also experimentally verified in 1887 -88 by Heinrich Hertz whose further work was concerned with proving that these waves did have the quasi-optical properties predicted by Maxwell fifteen years previously.



In his experiments Hertz used spark-gap transmitters operating initially on a wavelength of 10 m and later on 66 cm. In each case, the transmitter was placed along the focal line of a cylindrical reflector and the receiver, which consisted of a spark gap at the centre of a dipole, was situated along the centre line of a further similar reflector. With this simple apparatus, Hertz was able to detect radiation at a distance of several metres and by rotating the receiver by 90° showed that the radiations were polarised. This was further confirmed by an experiment in which he interposed a wire grating between transmitter and receiver and demonstrated that if the wires of the grating were parallel to the transmitting and receiving dipoles, the grating was transparent to the radiation but if at 90° it was opaque. He also demonstrated shadowing by opaque objects and by means of a large prism of pitch cast in a wooden box, he showed that refraction as much as 22° was possible. From these experiments he deduced that the Refractive Index of pitch to these electromagnetic waves was 1.69 compared with a value of between 1.5 and 1.6 for similar substances when transmitting light.

In the succeeding decade many workers extended Hertz's work using even shorter wavelengths. With wavelengths in what is now known as the centimetric region, quasi-optical experiments were performed which would not have been possible with Hertz's metric wavelength. Typical of these was a demonstration of double refraction of 8 mm waves by Peter Lebedew in Moscow.

In 1895, Popov in Russia, applying Hertzian principles to the study of atmospheric electricity, developed a receiver for the reception of Hertzian waves which worked quite well over limited distances. In the same year, however, Marconi produced the first really reliable detector using a coherer of his own invention.

In his first practical demonstrations on Salisbury Plain the following year, Marconi used a wavelength of 1 m, utilising parabolic reflectors behind both transmitter and receiver. Later, however, due to ease at which they could be generated, Marconi's interest turned to longer wavelength and it was not for nearly two decades that he again returned to the metric wavelengths. Also in 1895, a naval officer, Captain H.B. Jackson succeeded in establishing ship-to-shore wireless communication, but for military reasons the work was carried out in secret and the results were never published.

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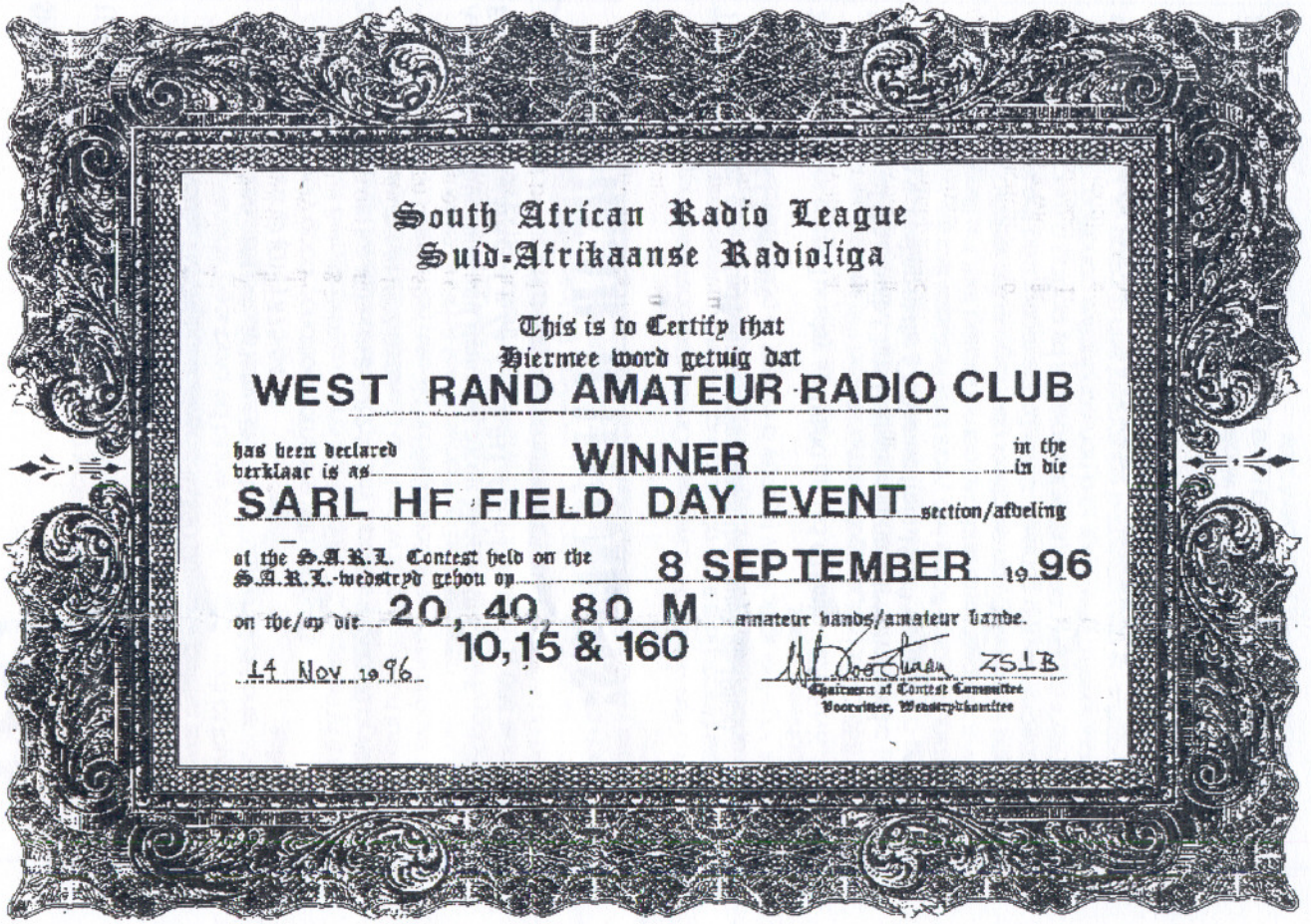


South African Radio League
Suid-Afrikaanse Radioliga

This is to Certify that
Hiermee word getuig dat

WEST RAND AMATEUR RADIO CLUB

has been declared WINNER in the
verklaar is as in die

SARL HF FIELD DAY EVENT section/afdeling

of the S.A.R.L. Contest held on the 8 SEPTEMBER 19 96
S.A.R.L.-wedstryd gehou op

on the/op die 20, 40, 80 M amateur bands/amateur bande.
10,15 & 160

14 Nov 1996

ZS1B
Chairman of Contest Committee
Voorsitter, Wedstrydkomitee

4.

WOW

SWOP SHOPPE:

1) Kenwood TS820 + Station Monitor SM220, ATU AT 200 and SP820 speaker with filters. - R3000-00.

   Icom-229H mobile FM 2M transceiver - R1500-00 -

   Kenwood TH-28A - FM Handy Talky - RX 2M & 70CM - TX 2M only.
   Contact Theuns @ (011) 475-6491.
   All above in very good condition complete with manuals.

2) B25 HF Radio with full ATU built in. 12 to 24V input. - R1200-00 or WHY.
   Contact Anton @ 081-307-0308.

Articles for publication and items for Swop Shoppe to Editor.
Email: Theuns@Mweb.Co.Za - Tel: 011-475-6491.

REGULAR HAPPENINGS:

1) Club meeting every 2nd Monday evening of the month @ 19h00 SAST at the Clubhouse.

2) Morse classes every Tuesday @ 19h00 on 145.625mhz - ZS6ENK.

3) 1st Monday of the month Chris Botham will run a technical and construction workshop at the Clubhouse from 19h00.

SUPPORT YOUR CLUB!

FROM THE WEATHERMAN ON 52-MHZ.

GEOSTATIONARY WEATHER SATELLITES:

These satellites are located at a specific altitude from the earth at which the rotation of the satellite follows exactly that of the earth. This is the so called geostationary orbit, at about 36,000 km. From the reception side, stations in the satellite's footprint have continuous visibility, making ti possible to use a fixed, high performance antenna.

Signals from these satellites are generally around 1.7 GigaHertz, which is a microwave frequency. For reception of such signals, special high gain antennas are required. Signal losses must be kept to a minimum, through the use of good quality connections and low loss cable. An external low noise pre-amp (mounted near the antenna) is almost universally employed.

Often, the pre-amp is also fitted with a down-converter, allowing for the use of cheaper cable on the down-lead and more widely available VHF receivers.

LOW ORBITING WEATHER SATELLITES:

These satellites orbit the earth at a relatively low altitude of a few hundred kilometers, literally skimming the earth's surface. Consequently, they travel at a very high speed, circling the earth every few hours.

Such satellites can only be received when their footprint is visible. Special software, such as Instant Track, is available to predict and track these satellites.

Signals from these satellites are in the band 137-138MHz (VHF). For reception of such signals, it is possible to use either a fixed omnidirectional antenna, or a motorised directional antenna.

RECEPTION:

The signal from both types of satellite is a 50kHz wide FM signal, which carries a 2.4kHz video subcarrier. The video subcarrier is amplitude modulated.

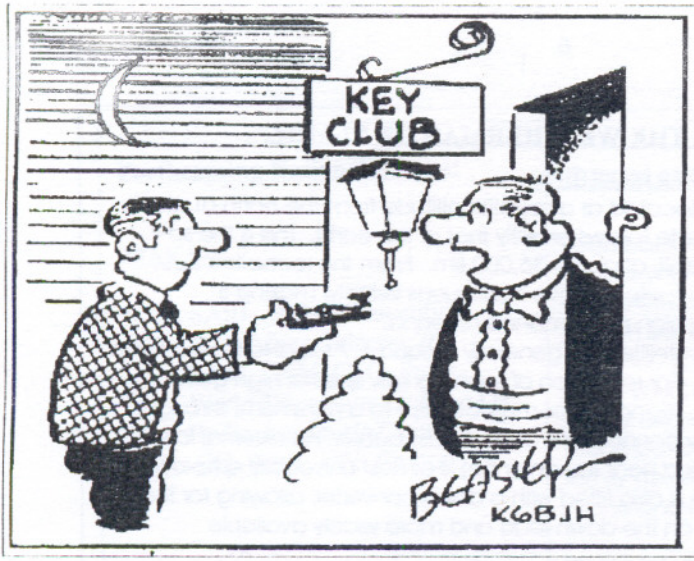
The signal has a wider bandwidth than narrow band FM used for fovoice communication, and a narrower bandwidth than that used for commercial FM broadcast stations. This means that the signal will be distorted if received with a narrowband FM receiver. A wideband FM receiver works fine, but the audio output will be lower than normal.

WEATHER SATELLITE RECEPTION:

Apart from using a specialised receiver or scanner, it is possible to use a standard FM broadcast receiver together with a frequency down-converter.

DECODING THE SIGNAL:

Receiving the signal is not enough to produce an image on your computer. Something is needed to convert the signal into an image. FTV uses the SoundBlaster card as a decoder. There are other systems which use external decoders which are connected to the serial or parallel port.



Clubhouse: **Erf 2447**
Kroton Street
WELTEVREDENPARK Ext. 12.

Tel: 475-2368

The year is almost over and it is time to get together and elect a new committee. Details of this will be announced later. I have taken the liberty to enclose a membership form for your convenience. Membership fees must be paid by latest 31 July 1998. Without members and membership fees the club can not exist. Please pay your membership fees and watch the Club grow!

The Editor.

Apologies for this months late delivery but rather late than never.

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