AWA Newsletter

Issue 28

April 2008

Antique Wireless Association of Southern Africa

Inside this issue:

AWA Committee:

* President—Rad ZS6RAD
* Treasurer—Willie ZS5WI
* Technical—Don ZS5DR
* Net Controller—Willem ZS6ALL
* Newsletter/PRO—Andy ZS6ADY

RFI In It's Various Forms :

An Interesting thread appeared on the Collins Reflector during this month, and that was one of interference to existing equipment by RF.

I found it quite interesting to read of all the different bits and pieces that have been interfered with through RF in the USA especially, and it made me wonder if we have similar problems here in the good ole SA.

The whole thread was started when someone who had recently purchased an S line, 32S-3 Tx with 75S-3 Rx and was wondering if anybody had experienced TVI to cable TV sets with RF using normal output and then using a 30L-1 linear. Many of the replies that came back were guys that had experienced RFI to computer speakers to cordless phones, Hi-Fi equipment, normal phones, security systems etc. The most amusing one to me was one of the hams who experienced RFI to his garden sprinkler system while doing CW and how the sprinklers would pop up and down in various places as he was transmitting. The simple solution in most cases was to insert capacitors or toroids somewhere in the circuit to prevent the problem from re-occurring.

In one case, a neighbour of a ham who was subjected to regular RFI on his PC speakers, was so intrigued by the ham's hobby, that he did not want the problem solved. He actually enjoyed listening to the transmissions by the ham concerned.

Hammurland HQ 120

I wonder how many strange and wonderful tales we have in SA of RFI in various places and how they were solved ?

Might make an interesting article to publish some of them.

Andy ZS6ADY

The Vibroplex Bug -by Randy Cole, KN6W

What's a Bug?
The telegraph key was invented in 1844 by Samuel Morse's associate, Alfred Vail, and was called the "Vail Correspondent". It was basically a switch with a knob mounted on a spring-loaded lever. The design evolved somewhat until the modern design was invented and patented by Jesse Bunnell in 1881. He called his key the "Triumph Key." However, many telegraph operators who used a key for long periods of time developed a debilitating problem, which they called "glass arm." Today the same type of problem has a kinder name -- "Repetitive Motion Disorder," or RMD. Carpal Tunnel Syndrome is one type of RMD.
In 1902, Horace G. Martin, a New York inventor, patented the first semi-automatic telegraph key, which he began to manufacture as the "Autoplex." Using a battery and coil like those in an electric bell, the Autoplex made endless strings of dots when the operator pushed a lever in one direction. Dashes were made manually by pushing the lever the other way. Since only dots were made automatically, the key was called a semi-automatic key. Unfortunately, the Autoplex required a separate battery and was probably fairly expensive.
Two years later, on May 7, 1904, Martin filed a patent for a completely mechanical semi-automatic key, which he named the "Vibroplex." The Vibroplex was based on a lever that rotated around a

(Continued on page 6)

CW Net:

Just after sending out the last newsletter, I received an email from Barry, correctly identifying the bug that I had placed a photo of.

Once again, the bands never cease to amaze us. Just a week after such wonderful comms, the bands died and John ZS6JBJ disappeared into the great abyss again, only to be faintly heard once or twice during the month.

Other than that, we have had a good few callers on the net and interest does seem to be picking up. Hopefully one of these days we will see a definite improvement in the bands and the CW net.

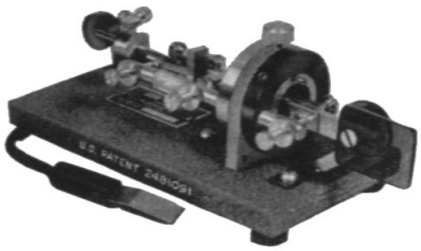
Of course it would be nice to hear some of the newcomers to CW, and I hear from various sources that there are a few of them around, but how to let them know about the AWA CW net ?

Our aim is to encourage the use of CW to keep it alive, just as we encourage the use and restoration of the old "Boat Anchors" in order to keep them alive.

There are still many DX countries active on CW, especially in Europe and the US, as well as some ardent SA CW enthusiasts chasing them, but it seems to me that once you become a DX enthusiast, the local guys can go play by themselves as they don't enjoy the thrill of the "high speed" DX'er looking to exchange a few numbers.

Best 73

De ZS0AWA/CW—SK



A Dowkey Vibrator

SSB activity:

SSB remains the same as far as band conditions are concerned. Every Saturday is a challenge to see how many stations we can copy on the net.

Rad, being ideally sited in Gauteng, seems to have the best reception for local stations from Pretoria and Johannesburg, and I often listen to him giving 5/9 reports to some of the local stations that I can barely hear. We have discussed the possibility of Rad relaying on 2m to my station for the relay on to 80m, but that is still only a possibility that we will investigate a bit further.

It was good to hear Om Dick ZS1AQD visiting in the Kempton Park area again and hope he enjoyed his stay in civilization for a while. I don't know which area has more gangsters, the Western Cape or Gauteng (Hi). Definitely more Hams up here.

For local stations, try using the 80m relay.

Keep on calling in on the net on Saturdays at 08:30 on 7070. We look forward to hearing from as many of you as possible. The more we can keep Om Willem occupied, the less coffee he drinks.

AM:

Very few stations heard this last month on AM, either due to poor band conditions or a lack of interest, or both.

John ZS5JF, sent me an interesting article from the NZ "Break-In" Aug 1996. The article is from the AM group which is called "SPAM" (Society for the Preservation of AM), and I was most intrigued to read a small portion which I could relate to today.

"The SPAM Column seems to consist of nostalgic reminiscences about the 1940's and 1950's and about how great things were when we were younger. I know for a fact there is a lot of activity in SPAM members shacks on the restoration and operation of older AM gear and am left wondering if it is all one of the great mysteries. Do you want anyone else to know what you are doing ? Is it a great secret that you are going to keep to yourself ? Are you interested in helping others to achieve their goals ? Are you prepared to jot down some notes so that I can have something topical to put on this page ? Please let me have some positive response."

Looks like it's the age old problem for editors of newsletters. Do join us on the AM net's. Wednesday evening and Saturday morning 3615 is the frequency.

The Collins Wireless Telephone

Scientific American, July 19, 1902, pages 37-38:

BY A. FREDERICK COLLINS.

There are at least five different methods by which articulate speech may be transmitted electrically without connecting wires between two given points. The first and oldest of these is by conduction through land and water. In this system four conductors are earthed, two at the transmitting and two at the receiving end. In this way a portion of the current, passing through the transmitting circuit, is shunted by means of the earth between the instruments and acts upon the receiver, since this path offers the least resistance.

THE COLLINS WIRELESS TELEPHONE.

As early as 1825 James Bowen Lindsay operated a system of wireless signals by this method, but by substituting a telephone transmitter for a telegraphic key and a telephone receiver for the galvanometer speech may be as easily sent as a signal. This is usually the first method suggested to the inventor seeking to transmit articulate speech without wires, but a very few quantitative tests will show that the limitations appear almost before its commercial value begins.

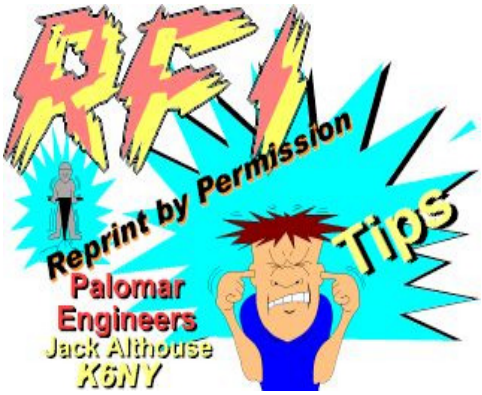
The second and most beautiful form of wireless telegraphy is due to the effects of mutual induction or the magnetic lines of force exerted by one coil of wire on another placed in the same field of force by mutual induction. This is the ideal system, since no earth connection either at the receiver or transmitter is necessary to effect transmission, but the action is due entirely to the electric whirls or vortices set up in the ether. In this case the effective distance to which speech may be sent is limited by the number of turns of wire on the coil; their distance apart and the mutual induction will then depend upon the current flowing in the primary. Like the former system, the limits are soon reached.

The radiophone and speaking telephone are two forms employing a beam of light to transmit telephonic messages. A pencil of light is allowed to fall on a mirror fastened to the diaphragm of a telephone transmitter, and by means of lenses the light is focused on a selenium cell at a distance of two or three hundred feet. In series with the selenium cell is a telephone receiver and a battery. When the sound waves of the voice impinge on the diaphragm of the transmitter, its vibrations cause the light to be displaced and its intensity on the selenium cell varied. Now selenium possesses the property of transmitting an electric current with twice the conductivity value when in the light that it possesses in the dark, so that there is a wide divergence of conductivity assured when the constantly varying beam of light falls upon it, and thus articulate speech is reproduced.

The fourth system is that employing Hertzian waves, but as the enormously high-frequency oscillations produced by the disruptive discharge of a high potential current is much too rapid to make itself manifest in a telephone receiver, the oscillation circuit which emits the waves must be damped down by the addition of capacity in the form of Leyden jars or condensers and its relation to inductance sustained by supplementing the capacity with coils of wire until the telephone receiver will respond to a vibration of electric oscillations. This system of wireless telephony offers the most interesting experimental field of investigation, but its functions are so complicated that a very limited distance has yet been obtained with it.

In making some tests in 1899 I found a method by which the disadvantages of the very rapid oscillations set up by a disruptive discharge in free air, as the spark of a Ruhmkorff coil produces, and without resorting to the loading of the oscillating circuit with artificial capacities and inductances. This was accomplished by permitting the discharge to take place in the earth instead of the air. To render this process clearer, let us employ, not only as a mere analogue, but as a similar proposition, the fact that electric oscillations emit electric waves, just as an electrically charged vibrating atom sends forth waves which are likewise of electromagnetic origin formed by the polarization of the ether. Even alternating currents of comparatively low frequency of a few thousand per second will emit long electrical waves in space, as Guarini has shown in his experiments in

(Cont p7)



Editor's Note: *antenneX* is an authorized distributor of many of the Palomar Engineers' products on a selected basis that are considered useful for its radio-related readership. The Ferrite Beads Kit and Balun Kits have now been added to the shelves in the Shopping Shack for online purchases and for your convenience.

Using Ferrite Beads to Keep RF Out Of TV Sets, Telephones, VCR's, Burglar Alarms and Other Electronic Equipment

RFI and TVI have been with us for a long time. Now we have microwave ovens, VCR's and many other devices that do wrong things when they pick up RF.

There are several ways to tackle the problem but most of them involve opening the affected equipment and adding suppressor capacitors, filters, and other circuit modifications. Unfortunately there is a serious disadvantage associated with this approach. Any modifications made to domestic entertainment equipment can - and often are - blamed for later problems that arise in it. Modifying your own equipment is not so bad, but taking a soldering iron to your neighbour's stereo is risky. An alternative approach is to use ferrite beads to reduce the amount of RF entering the equipment. If the equipment is in a metal box, or even if it's in a plastic box, if RF is prevented from entering the box on the antenna lead, the power cable, the speaker leads, the phono pickup leads, and on any other wires entering the box, it is possible to solve the problem without any modification to the equipment. Ferrite beads just slip over the wires and stop RF from going in.

Ferrite beads are made of the same materials as the toroid cores used in broadband transformers but are used at much higher frequencies. For example, ferrite Mix 43 is used for tuned circuits in the frequency range .01 to 1 MHz. It is efficient and losses are low. But, if it is used in the 1-1000 MHz range it is lossy. So when you slip a bead of Mix 43 over a wire and there is RF in the 1 -1000 MHz range going down the wire, it is just as though you put a resistor in the wire. But you did not have to cut the wire to insert the resistor; you just slip a bead over the wire. If the resistance of one bead is not enough you can add more beads or add longer beads to get more resistance. The beads, unlike a resistor, do not affect the wire at low frequencies so the audio, DC, and other low frequency components go through the wire just as though the bead were not there.

There are three bead materials in general use: Mix 77, Mix 43, and Mix 64. Mix 43 is the best for all-round use. It works from 1 to 1000 MHz. Mix 77 is a little better at the lower frequencies, so if your major problems are on 80 and 160 meters use it. Mix 64 is a little better on the higher frequencies so if your problems are mostly on two meters and up use it.

It is important to remember that the frequencies mentioned are those of the interfering signals to be eliminated, not the operating frequencies of the equipment being protected. For example: To protect a telephone operating at voice frequencies of .002 MHz we use type 43 or 77 beads to keep 14 MHZ RF out.

So when you buy beads you must specify both the physical size (FB-3, FB-8, etc.) and the material (Mix 77, Mix 43, etc.) depending on the frequency of the RF interference. FB-1, FB-3, and FB-7 have .05" holes that will slip over bare #18 gauge wire. FB-8 has a .09" hole and will slip over the insulation of #22 wire. FB-24 and FB-63 have .2" holes to go over larger wire or cable. FB-56 has a 1/4" hole to clear RG58/RG-59/RG-58X. FB-102 and FB-124 have 1/2" holes to clear RG-8/RG-11.

Cables. So far we have talked about slipping beads over individual wires. But, in many cases, we are going to find two wire speaker cables, two wire or three wire power cables, twinlead antenna cable, and multi-wire control cables. Cable wires are close together and act just like a single wire as far as RF pickup is concerned. So the whole cable can go through the bead and this will suppress RF transmission through all the cable-wires. This is a lot easier than putting beads on each wire.

Twinlead is a special case. If you put a bead on each wire you'll kill the TV signal. But if the whole twinlead goes through a single bead, the TV signal goes on through but the RF interference is suppressed by the bead. This is because the twinlead is a transmission line to the TV signal but looks like a single wire to the RF interference.

This brings us to coaxial cable. The signal going through the coax is confined to the inside of the coax shield. But the outside of the shield acts just like any wire; it can pick up RF and that RF can be carried to the TV or monitor. Shield beads placed over the cable will suppress this interference.

Toroids. When we start talking about slipping beads over coaxial cable and multi-wire cable we see that we may need beads with pretty big holes. Also, if the cable has a moulded plug on the end (like some power cords, for ex-

ample) the plug has to go through the hole and we may need a very big hole indeed. Fortunately a variety of ferrite toroid cores are available with holes as big as 1.4" diameter. They are not available in all the same materials as beads but in similar ones. As a guide when specifying toroids for RF suppression: Mix 43 is the best for all-round use. It works from 1 to 1000 MHz. Mix 77 is a little better at the lower frequencies, so if your major problems are 80 and 160 meters use it. Mix 61 is a little better on the higher frequencies so if your problems are mostly on two meters and up, use it.

After you put that big plug through the toroid hole you'll find that the toroid fits the cable very loosely. Don't worry. It will still work fine. If there is room to do it, loop the cable around and run it through the toroid again. Do this as many times as you can. Each turn is just like adding another toroid. And, using the big Mix 61 cores, you add an inductive choke where two turns is four times as good as one turn, three turns is nine times as good, etc.

Split Beads. This is a new development to solve the problem of putting beads or toroids over cables that have big plugs on the end. They are beads that have been cut in half. You put the two halves over the cable and wrap them with tape to hold them together. The mating edges are polished smooth so the two halves mate very closely.

They are available with centre holes of 1/4" and 1/2' diameter. Also for flat computer cable 2 or 2-1/2" wide. It is important that the two halves of the split beads fit exactly together. So the 1/2" hole beads cannot be used for cables larger than 1/4". It does not matter if the cable is smaller than the hole. All split beads now available are of 43 material which is the best overall material for 1-1000 MHz interference suppression.

Telephone Interference. The standard telephone is highly susceptible to RFI. The telephone wiring in the house and outside on poles make a large receiving antenna. And in the telephone instrument are voltage-variable resistors that act like detector diodes so nearby radio stations are clearly heard. The solution is to keep RF out of the telephone by putting ferrite beads on the telephone cable as it enters the instrument. The plug of modular telephones will go through F82 toroids. Unplug the wire from the telephone, put it through the hole of the toroid (three or four times if there is room) and plug it back into the telephone. Or use a split bead.

Burglar Alarms. These are much like telephones in that they have extensive wiring throughout the building that acts like an antenna to pick up RF. The solution is the same: Use beads or toroids on the wire entering the electronics box to keep RF out. It also may be necessary to put beads on the 115-v AC power cord.

TV Sets. Put a bead or toroid on the power cord as it enters the set. Toroids or split beads on the antenna cable also may be needed.

VCR's. The VCR is a real RFI problem. Ferrite beads on all wires entering the VCR can eliminate RFI from most amateur bands. But on 80 meters even this doesn't always work. It may be necessary to shield the VCR housing to completely eliminate RFI.

Stereo. Long speaker wires can act like an antenna to pick up RF and feed it into the output of the amplifier. The amplifier's feedback circuit allows the RF to reach the input where it is rectified, amplified and then heard in the speaker. The solution is to use beads on the speaker wires just as they leave the amplifier. RF can enter the stereo system through the power cord. Use a split bead or a toroid on the cord just as it enters the stereo.

We have been talking about keeping RF out of equipment. You can also use beads and toroids to keep RF in. That fish tank heater that makes all that racket on 80 meters is using its power cord and the house power wiring to radiate interference. A bead or toroid on the power cord right at the heater can keep the noise from entering the wiring. Computer power cords and connecting cables can be treated in the same manner. Sometimes RF comes out of a transceiver's power cable. A toroid can stop it. Or RF flows on the outside of the antenna cable, going right around your lowpass filter. Again, toroids to the rescue.

Computers. Computers are a part of many modern amateur radio stations. Often they are directly connected to the transceiver for RTTY, packet and other digital modes. They also are used for contest scorekeeping and other uses. Computers generate RFI because they use digital waveforms in the high frequency band that have high harmonic content. They can cause interference throughout the shortwave band and even into VHF.

Some of the interference is radiated from the circuit boards but the most common source is interference conducted out of the computer on the many cables that connect it to its monitor, its keyboard, its printer, and the radio or its data controller interface.

To get rid of the interference, it is helpful to try to find which cable it's coming out of. Start by tuning in the interference and writing down the "S" meter reading. Then disconnect, one at a time the devices connected to the computer and as you do so note any change in "S" meter level. Disconnect the printer, the modem, the keyboard, the mouse, the monitor, the data controller, and anything else connected to the computer. Hopefully this procedure will give a good clue as to where the problem lies.

If you isolate the major problem to one external device, place toroid cores or split beads over the lead from the computer. Do this right at the exit point from the computer. Also, if the affected device is itself an active generator, a monitor for example put beads right where the leads come out of it. Watch the "S" meter for any change - this tells you if you are getting somewhere. Also, if the device has a power cord or a telephone cord put beads on them. Always remember that telephone and power wires can conduct interference outside your residence and near your antenna.

Split beads usually are the best for computer RFI. The cables have big connectors that won't go through a reasonable size toroid. Removing the connectors to slip on a toroid and then rewiring the connector is a lot of work and you might make a rewiring mistake and get into real trouble. Split beads are great! And they are effective from 1-1000 MHz. Just be sure that the two halves of the bead fit tightly together.

If a bead reduces but does not eliminate an interference signal, try more beads. If one is good, two are better. In stubborn cases add capacitors. A capacitor from a lead to a ground converts the bead into a low pass filter. Use ceramic disc capacitors of .001 to .01 µF. In a multi-wire cable one bead serves all but you will need a capacitor to ground from each wire.

Each interference problem is different. You have to try this and then try that until you find a solution. Using the principles outlined here, ferrite beads and toroids can be extremely helpful. **–30-**

Editor's Note: **Here's an interesting & important question and answer that popped up:**

Q. What is the best place to insert such devices? Is it at the antenna, as the article recommends? What would be wrong with putting it at the transmitter? Isn't a series resistor still a series resistor, as long as it's anywhere between the source and the load?

A. The balun must be right at the antenna. It is not in series between the source and load. Coaxial cable acts like a 3 wire cable: 1) The inner conductor, 2) The inside of the shield, and, 3) The outside of the shield. The power flows through 1 & 2. Due to skin effect the current on wire 2 (inside of the shield) does not penetrate the shield and flows only on the inside. This leaves the outside of the shield free to carry a different RF current. The current coming up the inside of the shield is supposed to go to one side of the antenna but there is nothing to stop it from flowing down the outside of the shield. Without a balun some part of the current will flow down the outside. The balun prevents that by presenting a resistance (or an inductance) to this path. If the balun is down at the transmitter this current can flow that far and thus will radiate. The balun does not affect the path between transmitter and antenna; just this unwanted current path on the outside. Ferrite bead baluns are only practical as 1:1 ratio. Ferrite transformer baluns can be made also in 4:1, 9:1 etc.

(From Page 1)

vertical pivot. Pushing a paddle mounted on one end of the lever to the right and holding it there caused a spring-mounted contact on the other end of the lever to vibrate against a stationary contact, making strings of dots. Dashes were made manually by pushing the lever to the left and releasing it.

Martin was probably not the sole inventor of the semi-automatic key. William O. Coffe of Cleveland patented a mechanical semi-automatic key with a vertical pendulum on January 11, 1904. He must not have sold many copies of his "Mecograph" with the vertical pendulum, because only one is known to exist today. However, he made and sold a number of Mecographs in several different versions with horizontal pendulums.

The Vibroplex did help telegraphers avoid RMD, but it also helped them send faster, which meant they earned more money, since telegraphers were generally paid by the word. Within about ten years, the Vibroplex and a number of clones made by others became very popular.

In those days a poor telegraph operator was called a "bug," and some operators bought a key from Vibroplex or a competitor and started using it without much practice. The result was poor sending, and the keys themselves became known as "bugs."

The Vibroplex Company has made a variety of bugs during its long history. Some models are unusual, some are scarce, and some are common. Several other manufacturers made clones and copies of Vibroplexes, some legal and some illegal. Some of the people involved are interesting and colorful, including Martin himself and J. E. Albright, who ran the company for more than forty years, many of them spent in court defending his product.

No, this picture is not the wrong way, this is an Upright Vibroplex.

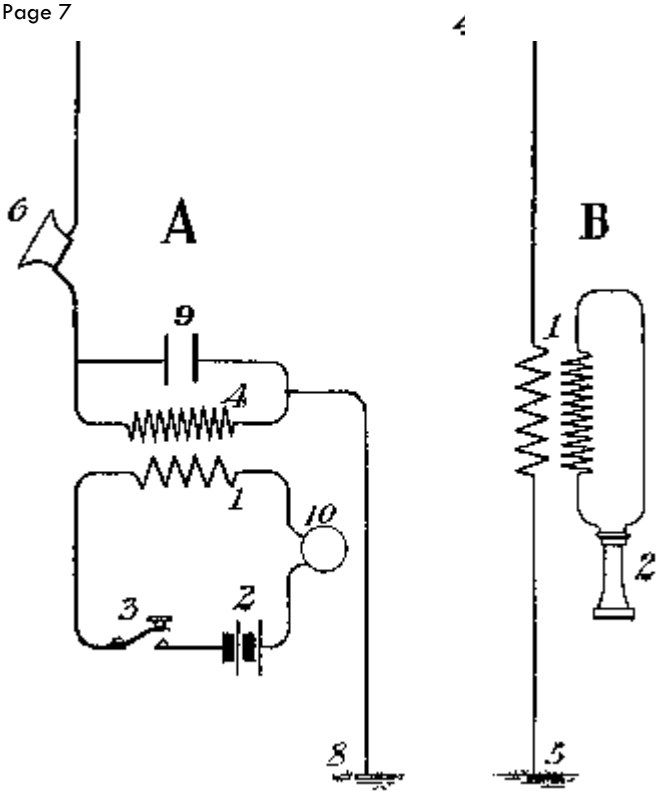


DIAGRAM OF WIRELESS TELEPHONE.

(from p3)
wireless transmission between Antwerp and Brussels. The length of the waves depends on the periodicity of the oscillations, the oscillations on the inductance, capacity and resistance of the circuit, and these in turn on the constants of the ether.

The constants of the ether are its elasticity and its density. The elasticity of the ether is not known absolutely, but is measured by its reciprocal or dielectric constant, which is the ether modified by its relations with gross matter, and is called its specific inductive capacity. Ether, when in close proximity with gross matter, apparently assumes a greater density than in vacuum or free air, however paradoxical it may seem; it is now well known that it is not the conductor or wire joining an electrical circuit which conducts the electricity, but the tube of ether including the wire. The atoms of which the earth is composed are likewise permeated with the ether to a much greater extent than the atoms of gases forming the air. To this condition Tesla has given the name of bound ether. Similarly as mediums of greater densities transmit sound waves to greater distances than mediums of lesser densities, so the bound ether of the earth will propagate electric waves of proper length to greater distances than those of the ether-bound air. As an illustration, in the case of sound waves, if a bell is struck in free air it can be heard at a distance of a mile, it could be heard at a distance of twelve miles if struck under water, for water has a density twelve times that of air; now, when a rapidly alternating current of high potential is discharged into the earth and there allowed to restore the equilibrium, electric waves are emitted and propagated through the earth; the length of the waves is determined by the frequency of alternation and the distance of propagation will depend upon the density of the medium.

These waves are, of course, normally radiated in every direction, but it has been found possible to reflect them and so make them unidirectional within certain limits. Fig. 1 shows photographically the wireless telephone transmitter the author devised for field work. Fig. 2 is a diagrammatic drawing of the system which has been patented in the United States and Great Britain. In the patent specifications a telegraph key is substituted for a telephone transmitter, as the system is interchangeable and may be used either for wireless telephony or telegraphy with some minor changes and additions.

Referring to Fig. 2, *A* is a transmitter and *B* the receiver. The primary coil is shown at 1 and is in series with the battery, 2, and the key, 3. One terminal of the secondary winding, 4, is connected with a special form of transmitter, 6, and this to a large capacity, 7. The opposite terminal of the induction coil is earthed at 8, and bridged across the terminals of the secondary is the condenser; 10 is a "variator," which will be again referred to. The receiver is quite simple and consists essentially of a transformer coil, 1, a telephone receiver, 2, and a battery, 3; the condenser, 4, of large and equal capacity to that employed in the transmitter, and 5 the earthed terminal

The action of the instruments is as follows: When the key, 3, closes the primary circuit the current is automatically varied by a special device, 10, which takes the place of the ordinary interrupter; this produces alternations in the secondary coil, 4, giving rise to high potentials at the terminals, 7 and 8. This potential difference is, however, modified by the transmitter, 6. The surging of the alternating currents through the circuit formed by 7 and 8, emits waves principally at 8, and these traveling with the speed of all other electromagnetic waves reach the earth plate, 4, and, finding an ether path of greater density surrounding the circuit, 4 and 5, it traverses that circuit in preference to passing onward through the earth, since the former offers the least resistance. This sets up alternating currents in the transformer coil, 1, and these are impressed on the telephone receiver, 2. The capacity areas, 4 and 7, should be large and of special construction to secure the best effects. The capacities, 4 and 7, are not elevated, and the larger the capacities the greater the distance over which articulate speech may he carried without wires.

Both the transmitter and receiver are mounted on tripods providing the operators with testing apparatus almost as portable as a camera. The tests, from the incipiency of the idea of wireless telephony, have been made at Narbeth, Pa., where the conditions were all that could be desired. In 1899, speech was transmitted by this system a distance of 200 feet; in 1900 a mile was covered, when with the equipment shown in the engravings articulate speech was transmitted across the Delaware River at Philadelphia, and in 1902 with the instruments placed on hills separated by a railroad, valleys, wooded lands and numerous streams a distance of three miles was attained. The results have shown the possible commercial value of this system of wireless telephony, which is soon to be perfected for actual use. ☺

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Antique Wireless Association of Southern Africa

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Mission Statement

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yesterdays radio transmitters and receivers. To encourage all like minded amateurs to do the same thus ensuring the maintenance and preservation of our amateur heritage.

Membership of this group is free and by association.

Wanted / for Disposal / Notices

Wanted:
1. For Racal RA117 or RA17 S meter or scrap receiver with one in.
2. Jones plugs 4pin and 8pin female RAF pattern
3. Valve type BL63/VR102 International octal twin triode.
Please let me know if the AWA is bringing any stuff to the flea market that can help with the R1155/T1154 projects (There are 3 of them. ZS1MUS Dick, ZS6MUS Dave and mine)
73
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A useful tip for restorers of boat anchors that have rubber components such as military headsets etc.

Coat the rubber parts with glycerine and leave in the sun to soak in. Then wipe off the excess and sprinkle with baby powder.

I recently saw a 20 year old car that had this treatment once per year. Its rubber components were in pristine condition.

73 de Pine, ZS6GST

SWAZILAND DX TRIP

Don't forget the Swaziland DX trip from the 10th to 13th April. Details in the Feb Newsletter or contact Cliff ZS6BOX—csmyth@altron.co.za.

AWA OPEN DAY
05 April 2008

The AWA open day will once again be held at the TAC at Rand Airport.

Last year was a great turnout and we hope to have a similar response this year.

There will of course be the Flea Market, boerrie rolls, hamburgers etc and the use of the Restaurant at the TAC with Bar Facilities.

AWA Valve QSO Party
3 & 4 May 2008

Start getting your rigs in good operating order for the Valve QSO party. On Saturday 03 May from 16:00 to 18:00 SAST is the AM session and then on Sunday 04 May 16:00 to 18:00 the SSB session. More details will be made available closer to the time.