



ZR6FD Jubilee logo!

drukwerk papier / paper
printing ZS6KO
ZS6BAQ ZS6PVW familie

WATTS

08 - 2005

Year 75+8m

Monthly newsletter of the Pretoria Amateur Radio Club
Maandelikse nuusbrieff van die Pretoria Amateur Radio Klub.

✉ PARC, PO Box 73696 Lynnwood Ridge 0040, RSA

web <http://www.qsl.net/zs6pta>

Bulletins : 145,725MHz 08:45 Sundays / Sondag
Relays : 1840, 3700, 7066, 10135, 14,200 MHz
depending on season

✂ Swapshop: After bulletin 2m and 40m (also on-line)



Nostalgia

The predecessor to your electronic counter.

More detail p2

In this issue

- | | | |
|-------------------------------|--------------------------|---------------------|
| • Editorial | | Redaksioneel |
| • History | ZS75PTA | Geskiedenis |
| • Minutes of Meeting- Jul '05 | - Notule van Vergadering | |
| • Member news and diary | | Ledenuus en dagboek |
| • Technical | | Tegnies |
| • Minutes | AGM 2004 AJV | Notules |
| • Agenda | AGM 2005 AJV | Agenda |

in hierdie uitgawe

AGM - AJV

Date: 11-08-2005
Time: 19:30 for 20:00
PARC Clubhouse,
South Campus,
University of Pretoria.
SE cnr University and
Lynnwood roads.

Management team / Bestuurspan Aug 2004- Aug 2005:

Chairman, SARL liason, WATTS newsletter	Hans Kappetijn	ZS6KR	hans@qrv.co.za	012-333-2612 072-204-3991
Vice Chairman, P.R., Fleamarket, RAE, Projects	Almero Dupisani	ZR6RY	almero.dupisani@up.ac.za	012-567-3722 082-908-3359
Sekretaris, Tydrenne, Jakkalsjag	Johan de Bruyn	ZR6JHB	johandbr@absa.co.za	012-803-7385 082-492-3689
Treasurer, Clubhouse, Database	Richard Peer	ZR6CK	peerrk@safrica.com	012-333-0612 082-651-6556
Webmaster, Projects	Sander Wissing	ZR6SW	zr6sw@qsl.net	012-661-4853 083-607-4549
Awards, Historian	Tjerk Lammers	ZS6P	zs6p@iafrica.com	012-809-0006

Co-opted / Geko-opteer:

Auditeur	Egbert Begeman	ZS6AZG	begeme@unisa.ac.za	012-347-1905
Tydrenne	Johann de Beer	ZR6YV		011-918-1060
Morse testing	Bill Ingleson	ZS6KO		012-331-2327
Tegnies	Johan Lehmann	ZR6ANF	jlehmann@csir.co.za	083-300-8677
Repeater Custodian	Hans Gurtel	ZR6HVG	adele123@absamail.co.za	082-940-0623
Klubfasiliteite,	Willie Greyling	ZR6WGR	willie@up.ac.za	082-940-2490
Repeater Maintenance	Willie du Plessis	ZS6AEA	hesterdup@webmail.co.za	012-565-5555 083-653-2101

Editorial

Your Chairman has decided that a 4-year stint in this function is enough and will stand back for new blood. My personal life has been very stressful over the past year due to illness in the family and this saga will continue for several months to come. I shall however be available to continue as Editor and ordinary Committee member.

With our AGM pending on the 11th, you have some time to consider election to the new committee and do your bit for the Club. Many of our members have to date been sitting on the sidelines assuming everything happens by itself. Contrary to that we have a dozen or so members inside- and outside the Committee that year after year throw in their weight to maintain reputation and status. Where will we be if they run out of motivation? It is important that you also make yourselves available to serve in the Committee albeit for a simple task. Many hands make light work and 7 committee members would be ideal. The necessary paperwork is attached to this newsletter.

Redaksioneel

U Voorsitter het besluit dat 'n 4-jaar tydperk in die funksie genoeg is en gaan terugstaan vir nuwe bloed. My persoonlike lewe was oor die afgelope jaar baie spanningsvol as gevolg van siekte in die familie en die sage sal nog etlike maande voortgaan. Ek sal egter beskikbaar wees om as Redakteur en gewone Komitee lid.

Met ons AJV wat op die 11e sal plaasvind, het u nou 'n bietjie tyd om verkiesing op die nuwe Komitee te oorweeg en u bydrae te maak vir die Klub. Baie van ons lede het tot nou aan die kantlyn gesit en aangeneem dat alles vanself gebeur. Teenoor dit het ons 'n dosyn of so lede binne- en buite die Komitee wat jaar na jaar hulle gewig ingooi om reputasie en status te onderhou. Waar gaan ons wees as hulle aansporing verloor? Dit is belangrik dat u ook uself beskikbaar maak om in die komitee te dien al is dit vir 'n klein taak. Baie hande maak ligte werk en 8 lede sal ideaal wees. Die nodige papierwerk is by hierdie nuusbrieff aangeheg.

Front page: The BC-221 Frequency meter

This equipment became available to amateurs after WWII in many varieties. Before the digital counter, the 5-tube BC-221 was the only option not only for accurate frequency measurement but also as an RF- and to some extent an audio signal generator. Originally a lab instrument, it was mass-produced as maintenance instrument for the front lines and B-17 flying fortresses on-board. The US Navy had a more neatly built copy known as the "LM". Every set had a numbered calibration book with 3250 factory-measured points. These books were one of the first examples of automated measuring and printing which was certainly hi-tech at the time as the rate of production satisfied daily production quotas for wartime requirements.

Considerable operational skill was required to zero-beat the correct harmonics and then to refer to the calibration book to convert dial settings to frequency. No direct connections were necessary. Field accuracy was stated as 0,02% up to 20MHz but under laboratory conditions at least 10 times better. Some models such as the -N -AA -AE -AG and AK(wooden box) were temperature compensated by means of rings in the coils operated by a bi-metal spiral.

Batteries were housed inside as well as some spare tubes and the operating manual. The calibration book and circuit diagram are attached to the inside of a concertina front cover hinged at the bottom so as to make all data available to the operator when open. Consumption was 6,3V 1A and 135V 20mA. Full destruction instructions were also printed in case of hasty battlefield departures. As late as 1963, these instruments were considered a 'good buy' and hams operated them on home-brew mains supplies.

References: Surplus Radio Bulletin 9/97 pp 13-17 and Wireless World 8/63 pp 403-406
Photo: ZS6KR - Model BC-221AK - serial SC5017A - Manufactured Aug-1944

ZS 75 PTA

1930-2005

PTA Ham in trouble... (From our archives. No reference to call sign and date. Outcome unknown)

Dear Sir,

re: RADIO TRANSMITTER IN NAME OF B.A. MITCHELL.

With further reference to my complaint regarding the a above, I have to state that I strongly object to the licence in respect of the radio transmitter being renewed on the following grounds:-

1. Interference with the reception on the wirelesses of the tenants in the building.
2. Mr Mitchell did not tell me that the electric wiring of the building would be tampered with when he installed his machine. The electrician from the Municipality who saw to the electrification in the building when it was built was annoyed with this tampering.
3. I was not told that the whole of the roof of the building would be used for the aerials. I object to anyone except a plumber or a painter walking on the roof. The tenants now blame the walking on the roof for the leakages which not only have to be rectified but the ceilings have to be distempered again.
4. Flat 10 is being used as a workshop and the light oak stained deal floor cannot stand up to the hammering which goes on there.

Generally speaking this tenant is a problem and a nuisance.

Yours faithfully,

SIGNED. (MISS) E.M. OWEN.

NOTICE OF ANNUAL GENERAL MEETING.

The Pretoria Amateur Radio Club hereby wishes to inform members and interested parties that its 75th AGM will be held at the Clubhouse premises 8pm Thursday 11 August 2005.

KENNISGEWING VAN ALGEMENE JAARVERGADERING.

Die Pretoria Amateur Radio Klub gee hiermee kennis aan alle lede en belangstellende partye dat sy 75e AJV by die Klubhuis op Donderdag 8nm 11 Augustus 2005 gehou sal word.

Members: Please consider serving in the next Committee. Your expertise may be required. Help spread the load. --- Let someone nominate you or nominate yourself.
AGM Agenda, Nomination- and Proxy slips are attached to this newsletter.

Lede: Oorweeg asb. om in die volgende Komitee te dien. U kundigheid is dalk nodig. Help om die las te versprei. -- Laat iemand jou nomineer of nomineer jouself.
AJV Agenda, Nominasie- en Volmag strokies is by hierdie nuusbrieff aangeheg.

Minutes of the monthly club meeting of the Pretoria Amateur Radio Club held at the South Campus of the University of Pretoria on 14 July 2005

Welcome: Hans ZS6KR declared the meeting open and welcomed all who attended.

Attendance: The meeting was attended by 24 members. Apologies were received from Don ZS6AQS, Joe ZS6TB, Vince ZS6BTY, Hal ZS6WB, Almero ZR6RY, Bill ZS6KO, Egbert ZS6AZG, Hillary ZR6HAP and Edwin ZR6ESP.

Personal Matters/Lief en leed: Mary Ingleson,lv van Bill ZS6KO is in die bed met longontsteking.

Matters arising from previous minutes: None.

Minutes of previous meeting: The minutes of the previous meetings as published in Watts were approved. Proposed by Alf ZR6ABA and seconded by Johan ZS6JPL.

Club Activities/Klub Bedrywighede:

Rallies/Tydrenne : Johan ZR6JHB het terugvoering gegee oor die post mortem van die Total Tydren. The next Rally will be the Hencom Panelbeaters/Barlow World Subaru Rally on the 6th August 2005 in the Witbank area. The rally will be run over a distance of 99.67 km consisting of 8 stages. Johan needs 10 fieldstations, 1 control station and 2 mobile stations. Members who can assist with comms on the event can contact Johan at 082-492-3689.

Social/Sosiaal:

Johan ZR6JHB het berig dat die volgende sosiale byeenkoms tydens die klub se AJV sal wees en dit belowe om iets spesiaal te wees aangesien dit die klub se 75ste AJV sal wees.

Foxhunts/Jakkalsjag: Foxhunts will resume in September.

Financial report: Richard ZR6CK reported on the club's finances.

Technical: Pine ZS6OB reported on the status of the repeater – Hans ZS6KR complained that he can still hear the fan making a noise.

Interference on 145,725MHz known to be caused by a radio on an aeroplane – owner of plane has been spoken to but nothing has been done to rectify the problem – must be reported to ICASA.

10m Repeater: Johan ZS6JPL frustrated by non-response from SARL. Chairman will take up the matter.

Fleamarket/Vlooiemark: Next Fleamarket 3 September 2005 at PARC

Ham Dairy

July 19 – Schools open

30 – 31 IOTA contest

Aug 07 – SARL HF Phone contest

06 – 07 10 – 10 International Summer contest

08 – Public Holiday

11 – PARC AGM !!

General/Algemeen: Motivations requested for awards at AGM – advise any committee member.

Pierre Holtzhausen ZS6PJH (ZR6PJH) en Sander Wissing ZS6SSW (ZR6SW) is geluk gewens met hul opgradering van ZR na ZS.

Presentation/Aanbieding : Pieter ZR6AHT - Video on Earthing Techniques – Thanks Pieter!

Next meeting/Volgende vergadering : AGM 11/08/2005 AJV /08/2005

Meeting closed at 21.15

ZR6JHB

Nota van redakteur: die video en lesing oor weerligbeveiliging wat Pieter ZR6AHT gegee het, het almal seker onrustig laat voel oor wat kan gebeur! Dit was baie insiggewend en leersaam. Van ons gaan sekerlik weer met nuwe oë kyk na ons installasies...

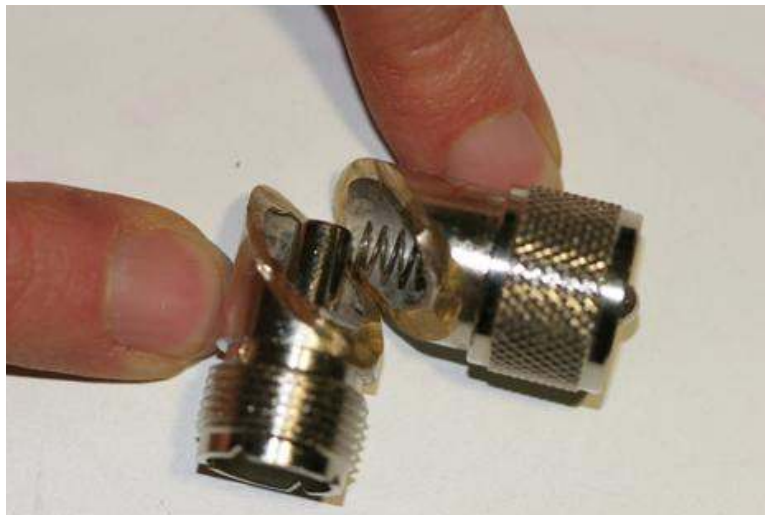
Buyer Beware!

Paul ZS6BAQ decided to operate on his recently purchased elbow adapter that had an intermittent contact and took this picture.

Ed: A while ago I became aware of odd resistance readings between both ends of brand-X elbow adapters and reported this to the supplier.

The supplier responded and reported that after investigation all stock had been returned to the manufacturers.

Unfortunately various shops still sell brand-X elbows and rather stay away from them. If you need a 90° connection, look for a 90° cable connector or branded elbows.



Birthdays

Aug
Verjaarsdae



01 Sue ZS6SUE, sw of Don ZS6CRT
03 Paul ZS6BMF
05 Hans ZR6HVG
06 Estelle, lv van Simon ZS6AST
06 Edwin ZR6ESP son of Richard ZR6CK and Molly ZR6MOL
07 'JB' ZR6YV
07 Hubert ZS6HVM
08 Ray ZS6ALG
10 Anne ZR6AUL, daughter of Frances ZR6AUT
10 Wally ZS5WP
11 Lorraine, sw of Stan ZS6SDZ
14 Harry ZS6HRD
15 Samantha, daughter of Don ZS6CRT and Sue ZS6SUE
15 Molly ZR6MOL, sw of Richard ZR6CK
16 Marie, dogter van Hansie ZS6AIK
16 Daniel ZR6AUS

Aug

Anniversaries Herdenkings

07 Peggy and Ed ZS6UT ()
09 Vlasta and Ivan ZS6CCW ()
27 Bertha and Hans ZS6KR (39)
27 Anne and Jac ZS6QA ()

22 Neville ZR6NBA
22 Hal ZS6WB
23 Otto OE9OWV / ZS6OFW
25 Doppies ZS6BAQ
26 Sinéad, daughter of Vince ZS6BTY
28 Jean ZS6ARA
29 Louise, dogter van Dawid ZS6DSG
30 Jonathan, son ZS6CRT and ZS6SUE
30 Don ZS6CRT
31 John, son of Bernie ZS6ANU

Simpatie

Die klub wil graag simpatie betuig aan Willie ZS6AEA en lv Hester asook die du Plessis familie met die onlangse verlies van hulle seun.

Sick Parade | Krukkelys

- Colin, the son of Bernie ZS6ANU was seriously injured in a mine accident underground. We sincerely hope that recovery can be complete and wish courage and strength to Colin and the Ginsberg family.
- Selma, sw of Joe ZS6TB recently underwent a bypass operation.
- Bertha, lv van Hans ZS6KR was onlangs weer onder behandeling en sal Augustus nog 'n operasie ondergaan
- The Inglesons went through some serious winter ailments.

PARC Diary | Dagboek

Aug 07 SARL HF Phone Contest..... !
07 SARL President's Net and Intechnet
06-07 10-10 International Summer Contest
08 School holiday
11 PARC AGM
20 RTA open day at SARL
28 SARL HF CW Contest..... !
Sept 03-04 All Asian SSB DX Contest
IARU Region1 Field Day
RSGB SSB Field Day
08 PARC Club meeting

Forgot ? Vergeet

Please renew your membership that was due on June 30.

Hernu u lidmaatskap asb. Wat op 30 junie verval het.

R50 to FNB Account 546 000 426 73
FNB Branch Lynnwood 25 20 45

Snippets | Brokkies

- Nog twee nuwe ZS roepseine: Sander ZR6SW het ZS6SSW geword en Pierre ZR6PJH het ZS6PJH geword. Baie geluk. Kandidate met name Almero ZR6RY, Johan ZR6JHB en Richard ZR6CK het onlangs evaluasie geslaag en sal ook binnekort met nuwe roepseine spog.
- Pine ZS6OB het by ons laaste vergadering aangekondig dat hy die agentskap vir ICOM in Pretoria verkry het. By sy QRA sal 'n operasionele fasiliteit geskep word om demonstrasie modelle te sien en te bedien. Navrae by 082-447-7823.
- Our Technical Evening on Monday 25th featured a talk on satellite working by Egbert ZS6AZG and attracted interest by 18 stations. The discussion revealed that satellites can also be a full-time hobby and much more time will in future be spent on the subject. Remember to make Monday evenings 21:30 a must.

Try this site for no-nonsense downloads of manuals, specifications, modifications and antennas at www.ham.dmz.ro

Build a 12V-15V supply tester

Hans ZS6KR

Here's a project that has proved invaluable when checking DC power supplies for current capacity and regulation.

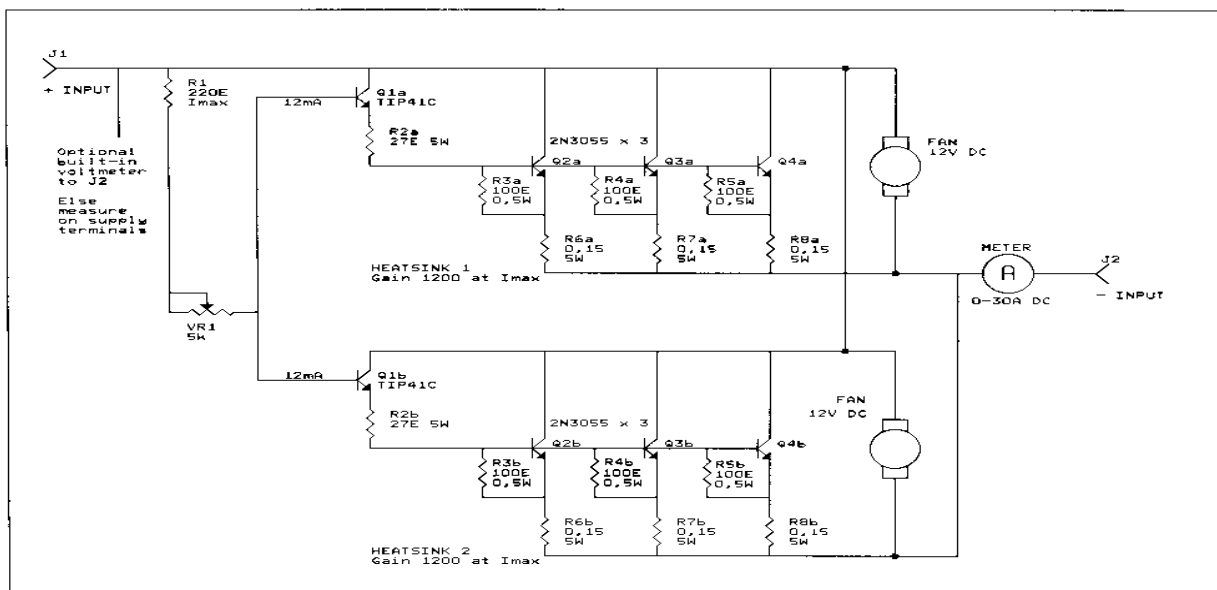
It basically is a controlled current sink which can be manually adjusted to check power supply or battery capacity up to a maximum of 28 Amps at 12-14V DC.

This can of course not be done indefinitely as there will be considerable heat dissipation in the unit. At 20A and say, 12V some 240W of heat is generated and considerable heat sinking is required for the transistors carrying that current. Additionally built-in fans can augment cooling for long-term tests.

The unit shown could safely do 5 minutes at 20A and that is more than plenty for any test. Generally a supply regulation test takes less than half a minute.



DESIGN



There are two banks of 3 power transistors driven by two emitter-follower driver/control transistors and a common control potentiometer. The current gain for each bank is around 1200 when using 2N3055 transistors and with an input current of say, 10mA we get 24A total through the ammeter to ground. The fans are shown as permanently connected but the author has a small front panel switch to bring them in when necessary. The resistors R3,4,5 leak away leakage currents that can cause thermal runaway and R6,7,8 equalize current distribution.

CONSTRUCTION Building the unit is a matter of using what you can find and is mainly a mechanical project. All items were flea market purchases and stripped equipment parts collected over the years.

Two heat sinks were bolted together side by side in the centre and the whole heat sink unit suspended by four 5mm nylon bolts through the enclosure sides for isolation, so that all transistors could be mounted directly without collector isolation.

Two ex-computer fans were fashioned into the rear of the box and orientated for extraction to the outside. The enclosure had various orifices for letting air in.

NOTE: The connections to the unit and the supply under test can cause voltage drops at high currents. True regulation figures are best noted on a digital voltmeter connected directly to the source terminals. Instead of manual control, a waveform can be superimposed onto the potentiometer circuit and the unit converted to a battery- or supply exerciser.



Mars Spectacular

The Red Planet is about to be spectacular! July & Aug, Earth is catching up with Mars in an encounter that will culminate in the closest approach between the two planets in recorded history. The next time Mars may come this close is in 2287. Due to the way Jupiter's gravity tugs on Mars and perturbs its orbit, astronomers can only be certain that Mars has not come this close to Earth in the last 5,000 years, but it may be as long as 60,000 years before it happens again.

The encounter will culminate on August 27th when Mars comes to within 34 649,589 miles of Earth and will be (next to the moon) the brightest object in the night sky. It will attain a magnitude of -2.9 and will appear 25.11 arc seconds wide. At a modest 75-power magnification Mars will look as large as the full moon to the naked eye. Mars will be easy to spot. At the beginning of August it will rise in the east at 10p.m. and reach its azimuth at about 3 a.m.

By the end of August when the two planets are closest, Mars will rise at nightfall and reach its highest point in the sky at 12:30a.m. That's pretty convenient to see something that no human being has seen in recorded history.

So, mark your calendar at the beginning of August to see Mars grow progressively brighter and brighter throughout the month. Share this with your children and grandchildren as no one alive today will ever see this again.

Static electricity in Petrol Stations - Danie, ZS6VWD (article lifted from another newsletter)



Ed: This Shell bulletin refers mainly to self-service stations, but even when being served, most rules below also apply.

People should be warned about the outbreak of fires resulting from static electricity while they are pouring in petrol.

150 cases of this type of fire have been investigated and the results were very surprising.

- 1- Of the 150 cases, more happened to women than men, due to their habit of getting in and out of the vehicle while the petrol is being poured in.
- 2- In the majority of cases the people had re-entered their cars when the hose was still pouring petrol out (the danger of the triggers on the nosepieces). When they finished refueling and got out to remove the hose pistol the fire began, as a result of the static electricity.
- 3- The majority of those affected used rubber-soled footwear and clothes of synthetic fibers.
- 4- Never use mobile phones when filling up with fuel.
- 5- It is well known that it is the vapour that comes from the petrol that burns and causes the fire when it makes contact with static charges.
- 6- In twenty-nine of the cases analyzed, the people re-entered their vehicles and later touched the pistols during the petrol fuelling process. This happened in cars of different varieties of makes and models.
- 7- Seventeen fires occurred before, during or immediately after the cap of the petrol tank was removed and before starting to fill up with petrol.
- 8- The static charge often results from when a passenger **rubs his/her clothes against the upholstery of the seats on getting in or out of the vehicle**. To avoid this, it is recommendable that NOBODY gets in or out of the vehicle while the petrol is being poured in. Movement in or out should only be done BEFORE starting, or when the fuelling is finished and the petrol cap placed.
- 9- MAXIMISE THE PRECAUTIONS if the petrol has spilt or splashed onto the ground. Highly inflammable vapours are immediately produced which can be ignited by sparks of static electricity from the turning on of electronic equipment (mobile phones, remote controls, etc.) or by the ignition of the vehicle itself. **BEFORE starting up the engine again, the spilt petrol must be gathered or neutralised by the petrol station staff.**

LOADING PETROL IN YOUR VEHICLE: Stop put the handbrake on and turn off the engine, radio and lights.

NEVER: Never return to your vehicle while you are pouring in fuel.

PRECAUTION: Get used to closing the car door on getting out or into the vehicle and in this way the static electricity will be discharged on touching something metallic. After closing the door TOUCH THE METAL PART OF THE BODYWORK before touching the petrol pump pistol. By doing this the static electricity in your body will be discharged on the metal and not on the pistol if you are pouring yourself.

WIRELESS AND TELEVISION REVIEW

Better and Bigger

1935

Price One Shilling

DISTANT STATIONS ON ONE VALVE AND NO AERIAL!

Victor King contributes an astounding little set to this bigger and better "Wireless." It is a one-valver operating in accordance with a modernised super-regenerative principle. It has simple, home-made coils, and the set costs only about One Pound to build. And yet such is its colossal sensitivity that it is possible to tune in distant stations on a diminutive frame aerial. Stations hundreds of miles away have been heard on this extraordinary set without either an aerial or earth!

How's Your E=IR?

BY ROBERT P. BALIN

<p>1.</p>	<p>Ohm's Law is the most valuable tool in electronics. It tells how voltage, current, and resistance are related to each other in a closed electrical loop. Test your knowledge of Ohm's Law in d.c. circuits by solving for the unknown voltage, current, or resistance in each of the ten circuits shown here. Assume that the meters have no effect on the circuits. Answers to quiz can be found on page 112.</p>	
<p>2.</p>	<p>3.</p>	<p>4.</p>
<p>5.</p>	<p>6.</p>	<p>7.</p>
<p>8.</p>	<p>9.</p>	<p>10.</p>

POPULAR ELECTRONICS

HOW'S YOUR E=IR? QUIZ ANSWERS

(Quiz appears on page 32)

- In a series circuit, voltage drops are directly proportional to the resistances across which they are measured: $E_1 R_2 = E_2 R_1$; $E_1 / 5k = 8V / 20k$; $E_1 = 2V$.
- Current through a resistance is equal to the voltage drop across the resistance divided by the resistance value: $I = E / R = 8V / 2k = 4mA$.
- Total current flows through all components in a series circuit: $I = E / R = 20V / 32k = 6.25mA$; $R = E / I = 5V / 6.25mA = 8000 \text{ ohms}$.
- Components that do not form a complete electrical loop have no voltage drop across them: $E = I / R = 2mA(8k) = 16V$.
- The currents in parallel branches are inversely proportional to the resistance in each branch: $I_1 R_1 = I_2 R_2$; $I_1(40k) = (15 - I_1)160k$; $I_1 = 12mA$.
- An unknown resistance is found by dividing the voltage drop across it by the current through it: $R = E / I = 10V / 2mA = 5000 \text{ ohms}$.
- The voltage drop across a resistance is the product obtained by multiplying the total current through it by the resistance value: $E = IR = 8mA(5k) = 40V$.
- The voltage drop between the mid-points of a balanced bridge is zero; hence the current is also zero.
- Voltage drops across parallel branches are all equal: $E = IR = 10mA(100k) = 1000V$; $R = E / I = 1000V / (50mA - 10mA) = 1000V / 40mA = 25,000 \text{ ohms}$.
- The sum of the voltage drops in a closed loop exactly equals the applied voltage: $50V + E_k = 40V + E_{10k} = E_{app}$. Hence, $E_{10k} = 2(E_k)$; $50V + E_k = 40V + 2E_k$; $E_k = 10V$; $E = 40V - 10V = 30V$.

"If you see a bomb technician running, follow him" - USAF Ammo Troop
 "Five second fuses only last three seconds" - Infantry Journal