



ZR6FD logo

Drukwerk
printing
ZS6JPL

Papier / Paper
ZS6JPL

WATTS

11 - 2009

Year 79 +11m

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



PARC, PO Box 73696 Lynnwood Ridge 0040, RSA



<http://www.parc.org.za> mail: zs6pta@zs6pta.org.za

Bulletins: 145,725 MHz 08:45Sundays / Sondag

Relays: 1.840, 3.700, 7.066, 10.135, 14.235, 51.400, 438.825, 1297 MHz
Activated frequencies are announced prior to bulletins

Swapshop: 2m and 7.066 MHz Live on-air after bulletins

Bulletin repeats Mondays | herhalings : Maandae 2m 19:45



Ivo ZS6AXT antenna farm

Satellite, EME and SHF operations galore



In this issue

- Minutes 10 /10 Notules
- Member's pages Lede-bladsye
- Member news / Activities Lede-nuus en Aktiwiteite
- Technical PTT from audio for PSK Tegnies
- Relay contacts in DC service Bladsy agt
- Page eight

In hierdie uitgawe

Next Meeting 11-11-2009

Time: 19:30 for 20:00
Clubhouse
Building 4,
University of Pretoria
SE c/o Lynnwood and
University roads

PARC Management team / Bestuurspan Aug. 2009 - Aug. 2010

Committee members					
Chairman , Rallies, Hamnet	Johan de Bruyn	ZS6JHB	chairman@zs6pta.org.za	012-803-7385	082-492-3689
Vice-Chairman	Alméro Dupisani	ZS6LDP	almero.dupisani@up.ac.za	012-567-3722	082-908-3359
SARL liason, fleamarket					
Treasurer, Secretary	Richard Peer	ZS6UK	treasurer@zs6pta.org.za	012-333-0612	082-651-6556
Repeaters, Technical	Craig Symington	ZS6RH	craigsym@global.co.za		083-259-3233
Contests	Pierre Holtzhausen	ZS6PJH	zs6pjh@telkomsa.net	012-655-0726	082-575-5799
Public Relations	Graham Reid	ZR6GJR	greid@wol.co.za		083-701-0511
Social	Doréén de Bruyn	ZR6DDB		012-803-7385	082-857-9691

Co-opted / Geko-opteer:

Auditor	Elma Basson				
Newsletter/Kits	Hans Kappetijn	ZS6KR	editor@zs6pta.org.za	012-333-2612	072-204-3991
Asset control	Andre v Tonder	ZS6BRC	andreh.vtonder@absamail.co.za	361-3292	082-467-0287
Klubfasiliteite, vlooiemark	Willie Greyling	ZR6WGR	willie@up.ac.za		082-940-2490
Rallies	Johann de Beer	ZR6YV		011-918-1060	082-857-1561
Rallies, Hamnet, Projects	Roy Newton	ZS6XN	newtonr@telkomsa.net	012-547-0280	083-575-7332
Webmaster	Nico v Tonder	ZS6AQ	nico@admin.co.za		082-326-9345
Hiistorian/Awards	Tjerk Lammers	ZS6P	zs6p@iafrica.com	012-809-0006	
Public relations	Thobile Koni	ZS6TKO	toko40@mweb.co.za		082-493-2483
Social	Molly Peer	ZR6MOL	molly@peer.co.za	012-333-0612	

Minutes of the monthly club meeting of the Pretoria Amateur Radio Club held at the South Campus of the University of Pretoria on 10 Oct 2009

Welcome: The vice chairman welcomed all present.

Present: See register, 13 members.

Apologies: 3 as per register.

Joys & Sorrows: Jack ZS6QA is going in 4 a knee joint replacement. Richard ZS6UK had another fall from a ladder, this time doing work for the church. Pierre ZS6PJH is improving well. Hope was expressed that Bertha was well. Signer ZS6SIG had his antenna mast blown down during the storm.

Minutes: The minutes of the previous meeting were in Watts, and were accepted.

Matters Arising: None.

Finances: The balance in the current account is now R5376.28 and R3630 in cash.

Membership: There are 106 paid up members of the total of 139.

Club Activities

Rallies: The off-road was held last weekend. The route was changed at the last moment. The mobile repeater was on the Long Tom pass and communications worked well. The next rally is the Toyota rally from Middelburg to Bapsfontein on 23-24 October.

Flea Market: The next PARC flea market will be held on 31 October at the PMC premises starting at 08:00.

Voortrekkers: The CQ hou koers takes place on 17 October from 08:00 to 12:00. We are operating at Elardus park primary school.

Technical: Alf reported back on the spider beam antenna. The spider beam covers 10, 12, 15, 17 and 20 meters. The antenna SWR is unstable and varies.

Contests: Pierre ZS6PJH noted that we had not participated in the first leg of the SARL VHF contest, the second leg in September started on a nice site on the Magaliesberg, but our team was chased off by a veld fire., some 40 contacts were made on 2 meters. Eight antennas were installed on one mast and a problem occurred with influences between them. The Heritage HF sprint was on 24 September, 32 stations were worked on 40 meters. The second leg of the SARL HF contest is the third weekend in November.

General: Meeting dates were discussed. A proposal must be formulated and published so that member feedback can be collected.

Next meeting: The next meeting will be on Wednesday 11 November 2009 at about 20:00.

The meeting closed at 15:05 with a talk by Signer ZS6SIG on his hex beam and photos of his wind damage.

Editorial

The next issue will be the December issue and hopefully your editor can fill all the pages with something interesting. Disregarding the standard pages 1 and 2 as well as page 8 and half of the birthday page, there are 4 pages and a bit to fill with member news, ham news and technical articles.

For the umpteenth time I must appeal for suitable material to fill those pages to reflect the club's character and activities. I cannot personally act as a roving reporter and rely on you, the members, to contribute to the maintenance of our newsletter's quality of content. All of you surely have modern technology to hand that makes it just about effortless to assist and keep it from being a boring publication.

Redaksioneel

Die volgende uitgawe sal die Desember uitgawe wees en hopelik sal u redakteur al die bladsye kan vul met interessanthe. As ons die standaard bladsye 1 en 2 uitlaat, sowel as bladsy 8 en die helfte van die verjaarsdag-bladsy, is daar meer as 4 bladsye om vol te maak met ledenuus, amateurnuus en tegniese artikels.

Vir die soveelste keer wil ek graag pleit vir geskikte materiaal om die bladsye vol te maak sodat dit die klub se karakter en aktiwiteit weergee. Ek kan nie persoonlik 'n rondgaande verslaggewer wees nie en maak staat op u, die lede, om ook by te dra tot die kwaliteit van ons nuusbrief se inhoud. Almal het sekerlik moderne tegnologie byderhand wat dit moeiteloos maak om te kan bydra sodat dit nie 'n vervelige publikasie sal word nie.

Birthdays

Nov.

Verjaarsdae



Nov.

Anniversaries Herdenkings

03 Blaine, son of Heather and vince ZS6BTY
 06 Brian ZR6BJS
 06 Sollie ZS6SV
 07 Adele, lv van Hans ZR6HVG
 07 Andrew, seun van Lynn en Andre ZS6BRC
 10 Luther ZS6E **(99)**
 11 Peggy, sw of Ed ZS6UT
 12 Fritz ZS6ASF
 12 Emmerick, seun van Erna en Whitey ZS6JJJ
 16 Vlasta ZS6-2501, sw of Ivan OK1LL/ZS6CCW
 16 Jean, dogter van Lynn en Andre ZS6BRC
 19 Joe ZS6TB
 22 Chris ZS6BGH

04 Estelle en Simopn ZS6AST (37)
 11 Aletta en Alf ZS6ABA (42)

22 Caitlin, daughter of Heather and Vince ZS6BTY
 25 Gordon ZS6AGV
 25 Tony ZS6CRO
 25 Johan ZS6KZ
 26 Bridge ZS6BJM
 27 Janice, dogter van Ellen en Joe ZS6AIC
 27 Karin, lv van Sarel ZS6EK

Joys and Sorrows | Lief en Leed

Jac ZS6QA had a knee joint replaced.

† **Chrissie ZS6JX**, sw of Dave ZS6JW passed away on 8 October after years of difficult mobility and illness. Our sincere condolences go out to Dave and family. She and Dave were married for 56 years.

Diary | Dagboek (UTC times)

Nov. 08 ARRL EME Contest 00:00-23:59
 07-08 Ukranian DX Contest 12:00-12:00
 14-15 WAEurope Contest 00:00-23:59
 14-15 OK/OM contest, CW 12:00-12:00
 21-22 **SARL Field Day Contest 10:00-10:00**
 21-22 LZ DX Contest 12:00-12:00
 21-22 All Austrian 160m Contest 21:00-03:00
 21-22 RSGB 2nd 1,8MHz Contest CW 21:00-01:00
 28-29 CQWW CW Contest 00:00-00:00

Newsless space

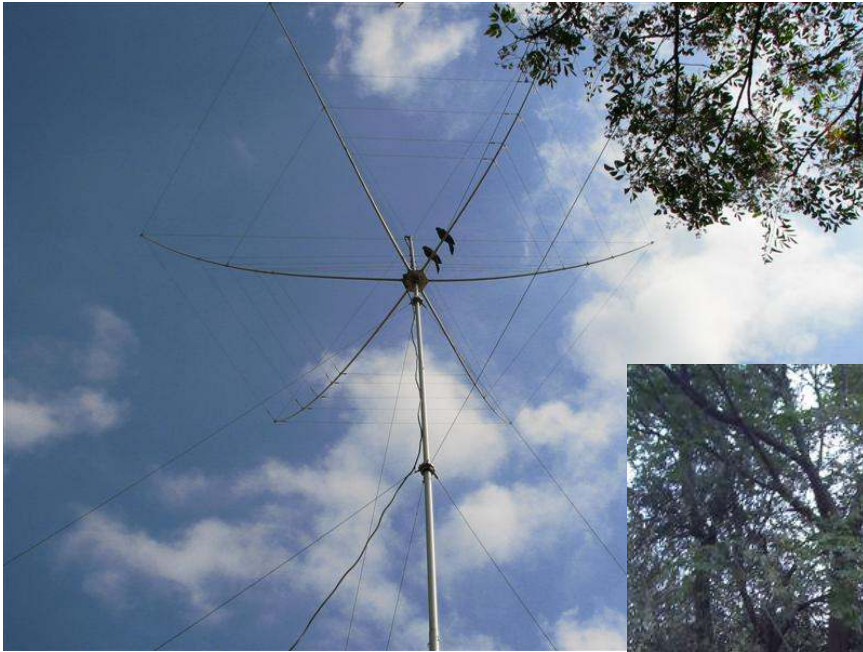
Snippets | Brokkies

Heritage Day: Pierre ZS6PJH en Pieter ZR6AHT was by **Fort Skanskop** op x September 1nm-3nm om 'n paar kontakte te maak met ander veldstasies en tuis-amateurs. **Vincent ZS6BTY** was ook daar om stasie op te stel maar moes vroeg weggaan.

SARL Contests: PARC came second in the Club Category. Thanks to ZS6ELI, ZS6AVC, ZS6BTY, ZS6PJ, ZS6BW, ZS6UT and ZS6KR who made up the aggregate for second place. (Info from HF happenings 375). Did some of you not send in logs? Let's make a bigger effort next year and diarize the relevant afternoons exclusively for contesting and related paperwork.

DX-pedition K4M Midway Atoll recently ended 19 October. Midway is an unorganized, unincorporated territory of the United States. It is less than 259 km east of the International Date Line, about 5200 km west of San Francisco and 4100 km east of Tokyo. It consists of a ring-shaped barrier reef and several sand islets. The two significant pieces of land, Sand Island and Eastern Island, provide habitat for hundreds of thousands of seabirds. The last DX-pedition was in 1996. Conditions to Pretoria were poor but 20m and 40m were workable on CW from 5pm onwards.





Traffie HX-5Bi Hex-Beam at ZS6SIG 2005-2009.

If you happened to drive near the intersection of Dely and Lois Avenue in Pretoria during the last four years you may have seen the Hex-Beam antenna of Sig, ZS6SIG on a 10m high mast. A Hex-Beam is a two-element yagi with W-shaped elements.

It is much smaller than other yagis, but offers excellent performance, low wind resistance and durability. At a distance it does not look so much like a ham antenna, but rather perhaps a six-sided laundry clothesline.

During a sudden wind storm in Pretoria during the evening of Friday, October 9, the mast on which the Hex-Beam was mounted suddenly gave way and the Hex-Beam came crashing down. Fortunately, the antenna itself landed intact.

Sig gave a short presentation of the event the next day at the October PARC meeting. Look for the Hex-Beam to reappear soon at another QTH in Pretoria...



Paul ZS6BAQ

het 'n kuiertjie in Switserland gemaak by 'n ou vriend van hom.

Dit lyk of 'n koue bier in die klimaat tog wel goed afgaan...



Viv ZS6BZS' bungalow burnt down



All that is left of the bungalow (subdivided for 4 people) at Broederstroom Old-Age Home on 12:30 AM Sept 20. All his possessions were burnt. Amateur-wise he is also sorry to have lost his gold SARL Jack Twine award and some radios. His cell phone has been replaced and his number is 082-770-0594 if members wish to contact him. Offers of assistance can be made to the editor Hans ZS6KR (phone numbers on page 2) as the old-age home is very far from shops and much-needed food and clothing will have to be taken or mailed to him. Thanks in advance.



Energy-saver lamp contents

After a fall of a reading lamp, the energy-saver lamp housing was split open and exposed its electronics.

Currently no circuit diagram of such devices has come to hand but it can be seen to be of some complexity.

This particular one has never made RFI so this is what a good type probably contains.

QRV Tech cc offers the following services:

- General equipment repairs and calibration
- Small-scale design and manufacturing
- Technical writing
- 3rd Party scrutiny of projects and documents
- Expert TV repairs and second-hand TV sales
- MFJ 259/69 Analyzer repairs and calibration

and products:

- Morse Reader PCB, PIC and LCD kit
 - Legal limit 40m dipole traps
 - Radio power supply OV protection kits
 - Nissei SWR/Power meters HF and VHF/UHF
 - Connectors RF and DC
 - Plug-in triple sequential industrial timer
- Contact Hans at 012-333-2612 or 072-204-3991



Amateur Electronic Supplies

Your Affordable Amateur Radio Dealer

Johan Lehmann ZS6JPL

083 3008677 / 012 8413648

aesham@telkomsa.net

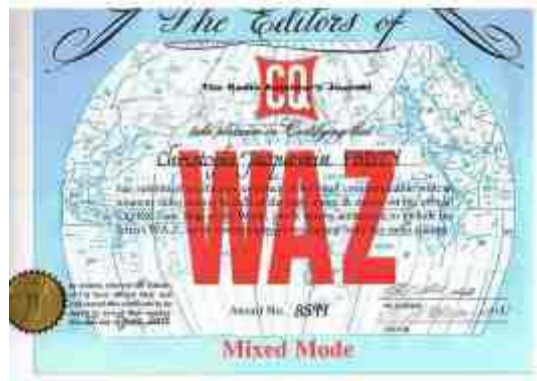


CABLE & INTERCONNECT SOLUTIONS
FOR TELECOMS, BROADCAST
AND MIL/AERO MARKETS



CQ announces 75th anniversary Worked All Zones award

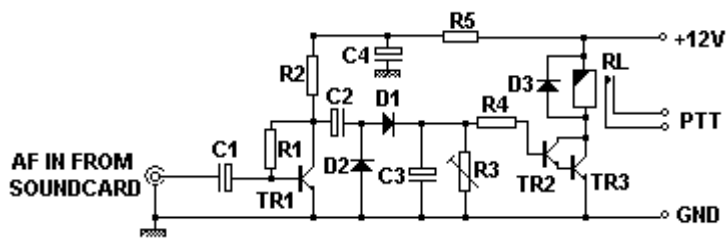
The November, 1934, issue of R/9 magazine announced a new operating award for radio amateurs, designed to encourage the growing popularity of contacting stations across the globe, what we know today as DXing. The award was called Worked All Zones and was to be granted for making confirmed contacts with hams in each of the 40 zones into which the world had been divided by R/9's editors. Today, 75 years later, R/9 has been succeeded by CQ magazine and WAZ Worked All Zones sponsored by CQ since 1945, continues to be one of amateur radio's most prestigious operating awards.



In celebration of the WAZ's 75th anniversary, CQ magazine is announcing a limited-term "Diamond Jubilee WAZ" award. A special certificate will be issued to amateurs who make contacts in all 40 CQ Zones of the World between November 1, 2009 and December 31, 2010. Certificates will be numbered but there will be no endorsements. Confirmations will not be required.

However, it is expected that applicants will continue to uphold amateur radio's longstanding tradition of honesty and selfregulation. Standard WAZ application fees will apply. Complete details on the Diamond Jubilee WAZ Award will be in the October 2009 issue of CQ, and are posted on the CQ website, www.cqamateurradio.com, with a link from the October issue highlights page. WAZ is the second oldest amateur radio operating award still offered today. The only current award that is older is the International Amateur Radio Union's Worked All Continents award. The ARRL's DX Century Club (DXCC) award was introduced in 1936. To date, more than 8,600 basic WAZ awards have been issued. More information on the WAZ award program is available on the CQ website at www.cqamateurradio.com/awards.html

AUDIO DERIVED PTT FOR PSK ETC G3VFP



C1, C2 = 2.2UF 16V

C3 = 1UF 16V

C4 = 10UF 16V

R1 = 1M

R2 = 10K

R3 = 100K PRE SET

R4 = 1K

R5 = 100R

TR1,TR2,TR3 = 2N2222 OR BC337-40

D1,D2,D3 = 1N4148

RL = OUC-SS-112D SUB MINIATURE 12V

THIS CIRCUIT WORKS OKAY, BUT INTENDED AS A DEVELOPMENT FOR AUDIO DERIVED PTT FOR PSK ETC WITHOUT THE NEED TO USE A COM PORT FOR PTT.

Long Term HF Propagation Prediction for Nov 2009

courtesy ZS6BTY

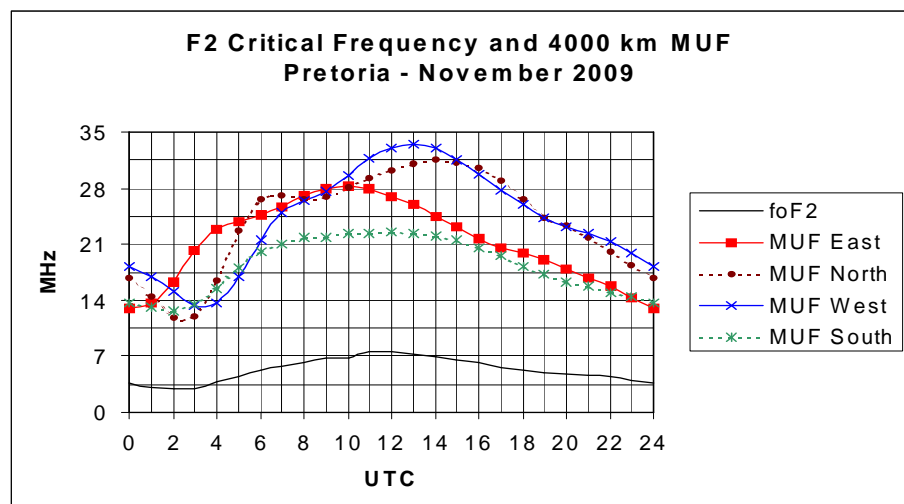
(see also our website propagation tab)

DX Operating

The graph shows the 4000 km maximum useable frequency (MUF) to the East, North, West and South from Pretoria for the first hop using the F2 layer.

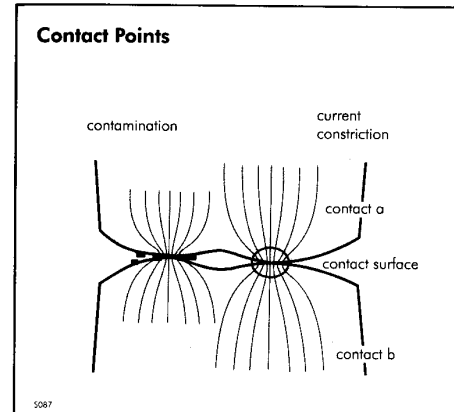
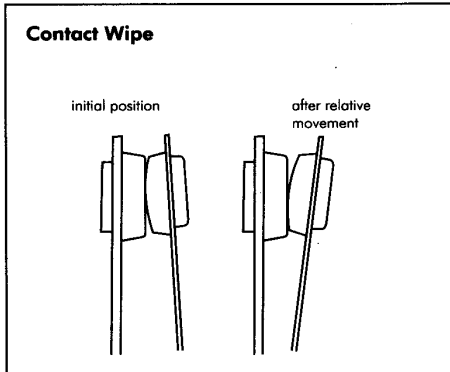
Local Operating

The F2 critical frequency (foF2) is the maximum frequency that will reflect when you transmit straight up. E-layer reflection is not shown.

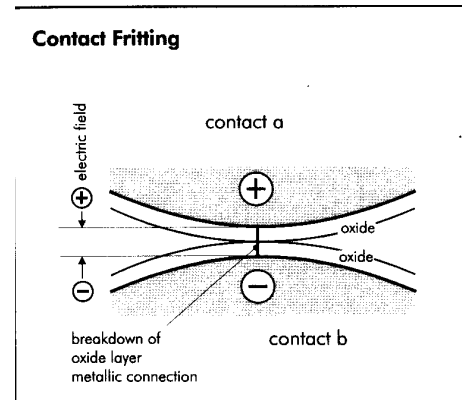


Electromechanical relays are still with us since their inception more than 160 years ago. This summary touches on making the right choice of contacts and measures to improve lifetime. Relay contact systems are a compromise to effect high conductivity, resistance to oxidation and/or chemical reactions, wear and thermal influences.

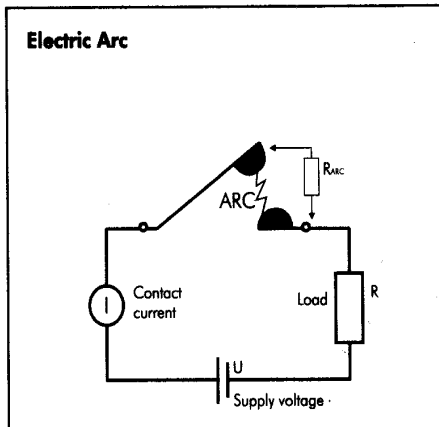
Contact Resistance. Real contacts have resistance and the nature of the contact area channels current flow as shown. Contact surfaces are invariably covered with thin layers of oxides, sulphides and other compounds formed by gas molecule absorption. Particles created by wear also appear soon after use. Mechanical cleaning can be designed in to allow contact surfaces to wipe across each other to destroy non-conductive films and move debris.



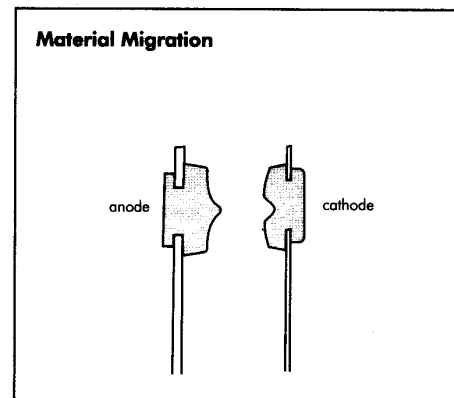
Electrical cleaning. The low- and non-conductive layers can also be destroyed by the effects of high current heating the contacts, arcs during contact bounce causing extremely high temperatures, and **fritting** which describes the electrical breakdown of the oxide/foreign layer when a sufficiently high voltage is applied across a closed contact. Since the distance between the actual conductors on both sides of the foreign layer is extremely small, an extremely high electric field is generated that can break down that layer, suddenly cause a high current density and thus destroying the layer with the resulting heat.



Arcing and sparking. An electric arc is a current-intensive gas discharge which occurs when opening a switch or as a result of a flashover (spark).

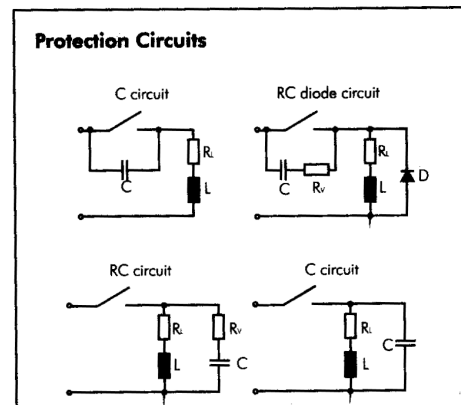


Under certain circumstances the air path is ionized atoms are broken up into ions by thermal effect and/or by the effect of a high electric field. The air thus becomes conductive and its conductivity is maintained if enough energy is supplied – also maintaining the load current to some degree. The path temperature can be 6000 deg and higher causing evaporation or **sputtering** of the contact material leading to material



wear and migration from cathode to anode causing rapid wear. (DC circuits only) Craters and cones eventually lead to failure due to mechanical interlocking and the reduced air gap.

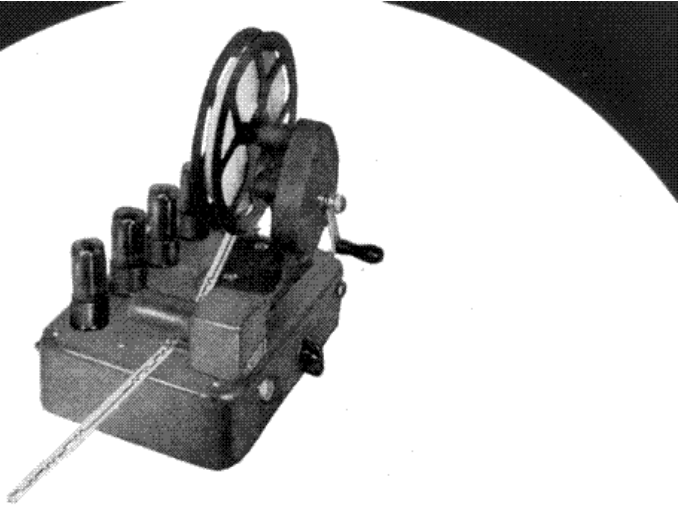
Last but not least, arcing is also possible upon the closure of contacts due to decreasing distance - albeit rapid – and contact bounce.



Switching off inductive loads the energy stored in the inductance is a secondary energy source which causes an arc to be maintained longer until all energy has been converted to heat. Several contacts in series can extinguish an arc faster due to the longer overall arc path. Contact protection is possible with external components to effect arc suppression by stealing energy out of the arc. An inverse diode (reverse voltage rating 10x) across the load is one method whilst another is a resistor-capacitor series combination across the load. Similar reasoning applies to protecting the switching contacts. Rules of thumb are:

$C=0,5-1\mu\text{F}$ per Ampère of load current
 $R=0,5-1\Omega$ per Volt contact voltage or 0,5-1 times the load resistance.

1946



McELROY Phototube Keyer PTK-400

Now Priced Within Reach of All

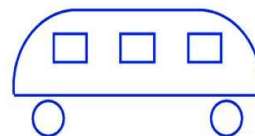
The Phototube Keyer, invented by Ted McElroy more than ten years ago, and widely imitated, has been simplified and made more rugged. Like the Wheatstone Code Tape Perforator, this unit is priced so drastically low that it is now available for schools and clubs throughout the world, as well as for individual amateur and professional operators. The operator may build his own tape pulling arrangement with a phonograph motor, or use the ATP-400 unit. The PTK-400 scans 3/8" recorded tape photoelectrically and delivers a tone code signal to from 1 to 50 headphones for operator training, and runs at either low or extremely high speeds. Each practice roll, complete with a 16 mm. metal movie reel, costs \$2.00; at 20 w.p.m., it provides an hour's unattended transmission. . . . A special set of ten rolls, recorded by McElroy, comprises a complete course of instruction for \$20.00. The PTK-400 is priced for immediate delivery at \$45.00.

Amazing Anagrams

- Astronomer : Moonstarer
- Desperation : A rope ends it
- The eyes : They see
- The Morse code: Here come dots
- Dormitory : Dirty room
- Eleven plus two: Twelve plus one
- Mother in law : Woman Hitler

PRE-SCHOOL TEST FOR YOU

Which way is the bus below traveling?
To the left or to the right?



The proposed electricity hike may force us to be more ingenious or go back to coal energy technology...

