

PARC Management team / Bestuurspan Aug. 2013 – Aug. 2014

Committee members

Chairman, Contests, Liason	Pierre Holtzhausen	ZS6PJH	zs6pjh@telkomsa.net	012-655-0726	082-575-5799
Vice Chairman, SARL liason	Fritz Sutherland	ZS6SF	fritzs@icon.co.za	012-811-3875	083-304-0028
Secretary	Jean de Villiers	ZS6ARA	zs6ara@webmail.co.za	012-663-6554	083-627-2506
Treasurer, SARS	Andre van Tonder	ZS6BRC	andre.vtonder@absamail.co.za	361-3292	082-467-0287
Motorsport, Social	Johan de Bruyn	ZS6JHB	zs6jhb@gmail.com	012-803-7385	079-333-4107
Web co-ordination	Graham Reid	ZR6GJR	greid@wol.co.za		083-701-0511
RAE, Bulletin co-ordinator	Vincent Harrison	ZS6BTY	zs6bty@telkomsa.net	012-998-8165	083-754-0115
Repeaters	Craig Symington	ZS6RH	zs6rh@hotmail.co.za		081-334-6817
Fleamarket	Alméro Dupisani	ZS6LDP	almero.dupisani@up.ac.za		083-938-8955
Clubhouse	Pieter Fourie	ZS6CN	pieter2@vodamail.co.za	012-804-7417	083-573-7048
Club activities	Richard Peer	ZS6UK	zs6uk@peer.co.za	012-333-0612	082-651-6556

Co-opted/Geko-opteer:

Auditor	Tony Crowder	ZS6CRO	tcrowder@telkomsa.net	011-672-3311	
WATTS newsletter/Kits	Hans Kappetijn	ZS6KR	zs6kr@wbs.co.za	012-333-2612	072-204-3991
Historian, Archives, Awards	Tjerk Lammers	ZS6P	zs6p@iafrica.com	012-809-0006	
Digital, photographer,sound	Theo Bresler	ZS6TVB	theo@bresler.co.za		082-698-1742

Reminder: Club Logo competition

The closing date for a new logo (without the SARL diamond) is the end of June 2014.

Let us see how creative you are.

All suggestions must be sent to the Secretary (address above)

Technology marches on..... a digital voice radio with D-Star

(dmrassociation.org)



DMR
DIGITAL MOBILE RADIO ASSOCIATION



D-STAR

Birthdays Verjaarsdae

April



- 01 Melanie, daughter of Peggy and Ed ZS6UT
- 08 Joe ZS6AIC (80)
- 04 Dino ZS6DNO
- 08 Bertha, LV van Hans ZS6KR
- 08 Klasie, seun van Sylvia en Tjerk ZS6P
- 09 Tanya, daughter of ZR6AVC and Frank ZS6GE
- 10 Joey, SW of Graham ZS6GJR
- 12 Jan ZS2LJ
- 13 Liam, son of Heather and Vince ZS6BTY
- 22 Marieta, SW of Roy ZS6MI

April Anniversaries Herdenkings

- 06 Lynn and Andre ZS6BRC ()
- 12 Rika and Errol ZR6VDR (45)
- 30 Joey and Graham ZS6GJR (31)

- 28 Tracey, daughter of Rita and Victor ZS6VG
- 29 Heather, SW of Vince ZS6BTY
- 30 Robert ZS6PRO

Lief en Leed | Joys and Sorrows

Roy ZS6MI had his eye attended to successfully.
Gawie ZS6GJM had considerable lightning damage.

Passing of Dave Larsen ZS6DN:

Dave's passing and accolade to his life's achievements were reported on SARL HQ bulletin of 2 March 2014. Your editor found that one of our current members was employed at SALBU in the heyday of its activities.

Meet Julian Bouttell ZS6AOU (in his younger days):



Diary | Dagboek (UTC times)

April.

- 03 SARL 80m QSO Party 17:00-20:00
- 05 SARL RADAR Contest
- 05-06 SP DX Contest 15:00-15:00
- 11-13 SARL National Convention
- 12-13 JIDX CW Contest 07:00-13:00
- 13 Hungarian Straght Key Contest 15:00-17:00
- 18-19 Holyland DX Contest 21:00-21:00
- 19 SARL Autumn QRP Sprint
- 19 EU Spring Sprint SSB 16:00-19:59
- 19-20 YU DX Contest 21:00-17:00
- 26-27 10-10 International Spring Contest – Digital – 00:01-23:59
- 26-27 SP DX RTTY Contest 12:00-12:00
- 26-27 Helvetia Contest 13:00-12:59

Welkom aan nuwe lede:

...Gehoor van iemand wat wag vir komitee goedkeuring.

Report from Craig ZS6RH:

Work is being done on the D-star repeater for installation in the near future from the experimental highsite at ZS6SF. Thanks to ZS6SF for the ZS6TVB for donating the copper wire and earth-spike, ZS6RH and ZS6GCA for installing the earth-wire in the rain.

Malawi licensing

Roger ZS6RJ aquired a Malawi license as 7QAA for an upcoming dxpedition. The cost involved to apply and maintain it should be noted:

USD 61 per person and USD 31 bank fees to get it from there to here.

ie: Over R1000 p.a. to maintain a 7Q license!



Craig's vehicle

that does many km for his work and the club.

1997 model and more than 630,000 km on the clock!

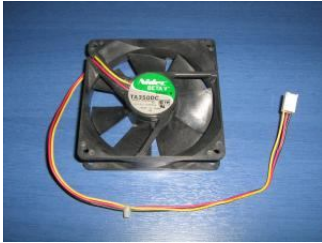
How PC Fans Work

(Grammar corrected and condensed from PCB Heaven website)

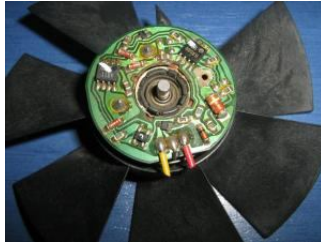
What is inside a PC fan?

There are many types of PC fans that are assembled in different ways. In this article the basic and most common fan type will be explained. A 3-wire 4 coil 80mm fan rotating at 2200 rpm. Then some other common fans will be explained.

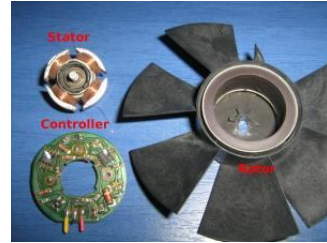
First of all they are not easy to disassemble. You will need some ingenuity and patience:



A victim in the name of science



Removing the fins from the housing, the controller is revealed



The rotor, the stator and the controller

It is more than obvious that the PC fan is not rotated from a simple DC motor. It has the permanent magnets fixed on the rotor, the stator carries the coils, there are no brushes and it has a controller for the brushless motor.

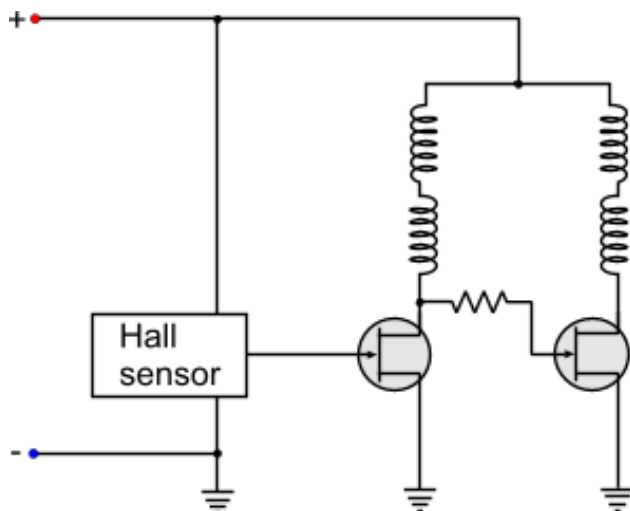
Some different PC fan types

There are several reasons that a brushless motor should be used, among them is the reliability, the power efficiency and the rpm feedback. So the motor type would not be the proper way to categorize PC fans. Instead they will be categorized with the most obvious characteristic: their connector and wires.

There are actually 3 different types of PC fans. Those with a 2-pin connector, those with a 3-pin connector and those with a 4-pin connector.

2-wire PC Fans

These are the oldest and most simple PC fans. Only two wires come out of the fan controller, the positive and the negative. Giving power to the fan, it will rotate at full speed.



The internal diagram of a typical two-wire fan is as follows:

The connector of a 2-wire fan has a red and a black cable.

The red cable goes to the positive of the power supply and the black to the negative.

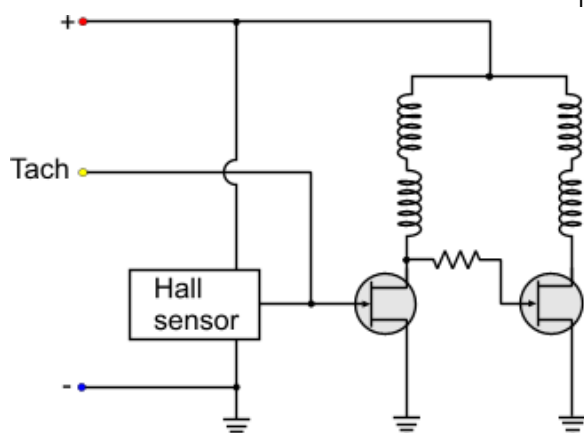
Usually, for more flexibility, they have a male-female 4-wire molex power connector.

In one end of the connector the fan is connected in parallel with the 12V (YELLOW - BLACK).

Therefore, the fan is powered normally and the cable of the PSU can be used to power another device.

3-wire PC Fans

A very common type of PC fan. These fans introduced the "tacho" for the first time. The first two wires are the power supply of the fan. The third wire, comes directly from the output of the [Hall sensor](#). This output generates 2 pulses per one revolution of a fan. The fan is then connected to the motherboard. From the third wire, the motherboard can "read" the tacho of the fan and see if the fan is running at how many RPM. If the motherboard sees no pulses or very low rpm, then the characteristic buzzer sounds to inform the operator that something is wrong.



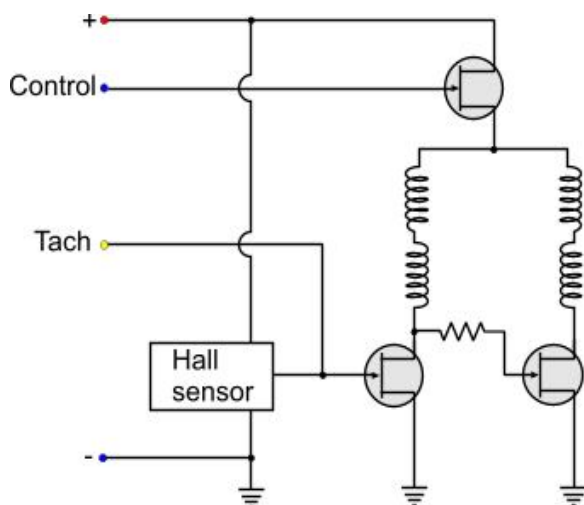
The internal diagram of a typical three-wire fan is as follows:

It seems that for once more, the manufacturers did not have the same wire provider, or their wire providers did not have the same colored-plastic provider... Two fans with 3-wire connectors may not have the same wire colors. Thus we have to rely on the connectors which are standard. So, as you look from the key-side of the connector, number 1 is the most left pin:

- 1: Negative power supply (black)
- 2: Positive power supply
- 3: Tacho

4-wire PC Fans

This is the most modern type of PC fan designed to be controlled with a PWM signal to regulate its speed. All fans actually can be controlled with PWM, but this particular type can also provide tacho feedback simultaneously, something that the 3-wire fan cannot do under normal circumstances. The controller and the Hall sensor are always fed with constant current. An FET transistor feeds the coils. The gate of the transistor is actually the fourth wire. The PWM pulses drive the coils via the transistor but the controller along with the Hall sensor are not affected at all. This change can be seen in the internal diagram of a typical 4-wire fan:



Usually, the diagram is more complicated than this but gives an idea about the principle of operation of PC PWM fans. The controller actually checks the PWM input pulses and sends pulses to the transistor accordingly. If the PWM duty cycle is below a threshold value, then the fan either shuts down, or it remains in a stable "LOW" rpm. Some types even keep running with 0% duty cycle. This is usually done by special design in critical applications. As for the pinout. Just do not trust the colors. From the key-side of the connector, number 1 is on the left:

- 1: Negative power supply (black)
- 2: Positive power supply
- 3: Tacho
- 4: PWM control

Can I connect a 3-wire fan to a 4-wire connector?

Yes you can. If you notice the pinout of the fans, the 3 first pins are the same for the 3 and 4 wire fans. Also, the keys are the same for both connectors. The 4-wire connector has smaller back-key to accept the smaller 3-wire fan connector keys. The fan will always run at full speed (as the control pin will not be used), but the rpm feedback (tacho) of the fan will operate normally and the motherboard will read the rpm normally.

Can I connect a 4-wire fan to a 3-wire connector?

Yes you can but the connector is larger. The keys of the 4-wire fan have the same distance as the 3-wire connector. The fan will operate at full speed all the time, as the 4th wire from the PWM control will be on air. The motherboard will normally read the rpm feedback from the fan tacho.

25 years of the World-Wide-Web

info from My Broadband 9 March 2014

Twenty-five years ago, the World Wide Web was just an idea in a technical paper from an obscure, young computer scientist at a European physics lab. That idea from Tim Berners-Lee at the CERN lab in Switzerland, outlining a way to easily access files on linked computers, paved the way for a global phenomenon that has touched the lives of billions of people. He presented the paper on March 12, 1989, which history has marked as the birthday of the Web.

But the idea was so bold, it almost didn't happen.

"There was a tremendous amount of hubris in the project at the beginning," said Marc Weber, creator and curator of the Internet history program at the Computer History Museum in Silicon Valley.

"Tim Berners-Lee proposed it out of the blue, unrequested."

At first, said Weber, the CERN colleagues "completely ignored the proposal."

The US military began studying the idea of connected computer networks in the 1950s, and in 1969 launched Arpanet, the forerunner to the Internet. But the World Wide Web was just one of several ideas to connect the public.

Berners-Lee convinced CERN to adopt his system, demonstrating its usefulness by compiling a lab phone book into an online index. A key aspect of the design put forward by Berners-Lee was that it worked across various computer operating systems. And it offered the ability to click on links to access files hosted on computers located elsewhere.

The Web was not a winner out of the gate.

There were rival online services such as US-based CompuServe and France's Minitel but they involved fees, while Berners-Lee's system was free.

"It started as a real underdog; no one would have predicted the system would have succeeded," Weber said.

The Gopher system owned by the University of Minnesota was beating the Web in the early 1990s.

Weber credited former US vice president Al Gore with helping the Web topple Gopher by getting government agencies in Washington to use the system. The launch of the Whitehouse.gov website was seen as a huge stamp of approval for the Web.

In 1993, the Web system was released free into the public, while those behind Gopher started charging, according to Weber. "Most people don't realize that both the Web and the Internet had competitors," Weber said. "Had they lost the battles, we would still be going online, but it could certainly be different, a lot more top-down control like the walled garden at Facebook." Web competitors were online environments controlled by operators.

Under the Berners-Lee model, people were free to publish what they wished on Internet-linked computers. Internet titans such as Google and Yahoo were built on helping people find pages of interest as the amount of information being hosted on servers exploded.

"At its birth, many of us were guilty of a lack of imagination and just didn't see what the Web would do to the future," Gartner analyst Michael McGuire told AFP.

"The personal computer changed the way we work, but it was the Web that disrupted and changed a lot of industries." The ability to freely access files on the Web has shaken traditional business models in music, film, news and more.

"The Internet pushes power to the edges," said Jim Dempsey, vice president for public policy at the US-based Center for Democracy & Technology.

"Anybody can be a listener and anybody can be a publisher on the same network; there has never been anything like it."

A powerful underlying tenet of the Web is that it is egalitarian and open, but those principles are under threat, according to Dempsey.

It remains to be seen whether the Web is hobbled with regulations and fragmented by governments walling off portions in countries.

"You will never stop the teenage kid from watching little snippets of cute cats," Dempsey said.

"The trouble is you could limit the ability of people to criticize the government or make a tiered Internet in which it is harder for innovators, critics, or human rights activists to reach a global audience."

Threats to a Web based on equality concern its creators, according to Weber.

While the Web unified the Internet decades ago, there is nothing "written in stone" saying it can't fragment anew, the historian reasoned.

In the US, major Internet service providers have won the right to give some online traffic preferential treatment, and governments have shown willingness to invade online privacy or restrain Web freedom.

A big battle for the shape of the Web could be the effect of billions more people getting online with smartphones in parts of developing parts of the world.

"The Web is really only half built; it is not worldwide yet," Weber said.

Feeding an antenna stack

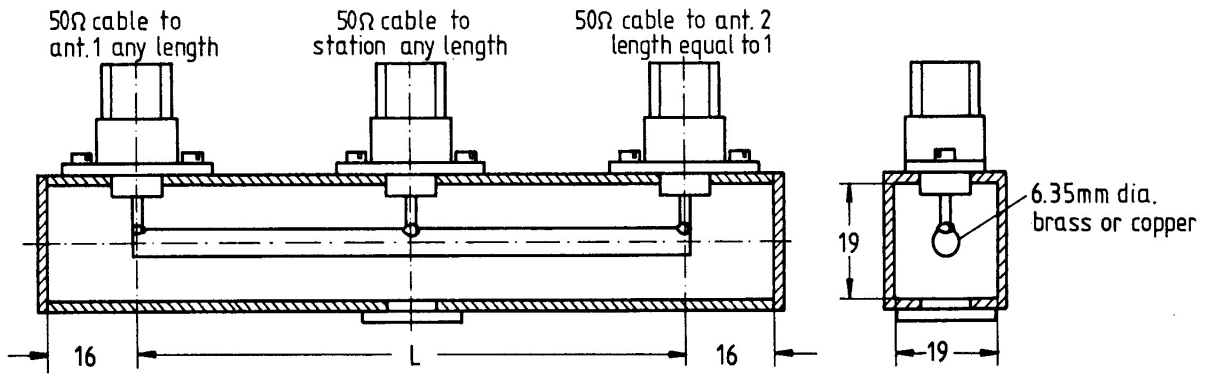


Fig. 5: A 50 Ω power divider/combiner for interconnecting two antennas

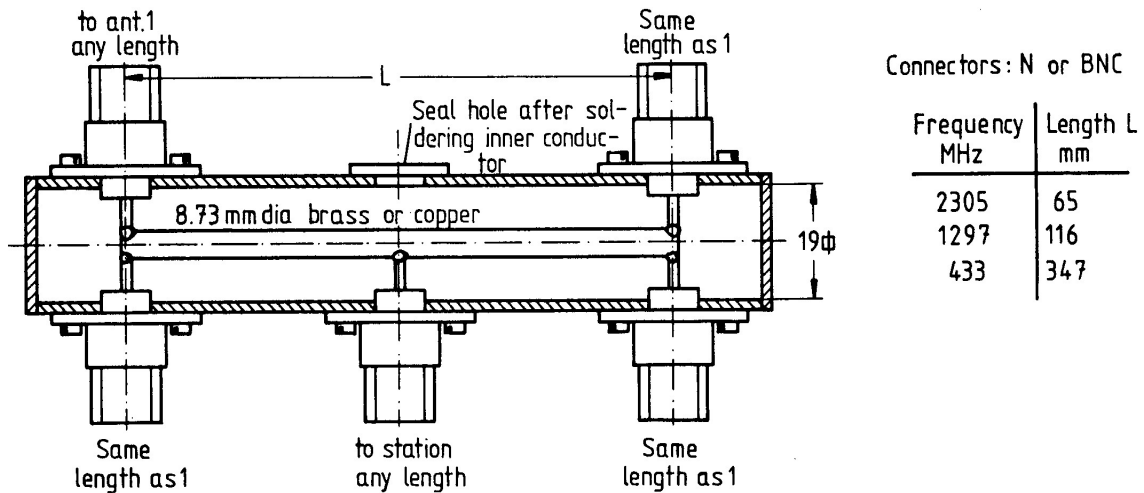


Fig. 6: A 50 Ω power divider/combiner for interconnecting four antennas

C/O NELSPOORT & 801 MALMESBURY STR, WINGATE PARK, PRETORIA [S25.49.36 & E28.16.07]

ICOM HAMSHACK [PTA]
 Pine ZS6OB 082 4477 823
 AUTHORIZED ICOM DISTRIBUTOR

FOR ALL YOUR ICOM PRODUCTS & ACCESSORIES
 SPECIALLY MANUFACTURED VHF/UHF EX60B ANTENNA SYSTEMS FOR:
 EME, TROPO, MS, REPEATER & SATELITE SYSTEMS

QRV Services offers the following expertise:

- General equipment and Television repairs
- Small-scale design and manufacturing
- Precise frequency and power calibration
- Technical writing
- 3rd Party scrutiny of projects and documents
- MFJ 259/69 Analyzer repairs and calibration
- Ham radio and solid state amplifier repairs
- Valuation of ham estates and their disposal.

Products:

- Legal limit 30m and 40m dipole traps
 - Linear power supply O.V. protection kits
 - 30A DC switching supplies
 - 30A DC Anderson Power Poles
 - Connectors RF and Audio
 - Plug-in triple sequential industrial timers
- Contact Hans at 012-333-2612 or 072-204-3991

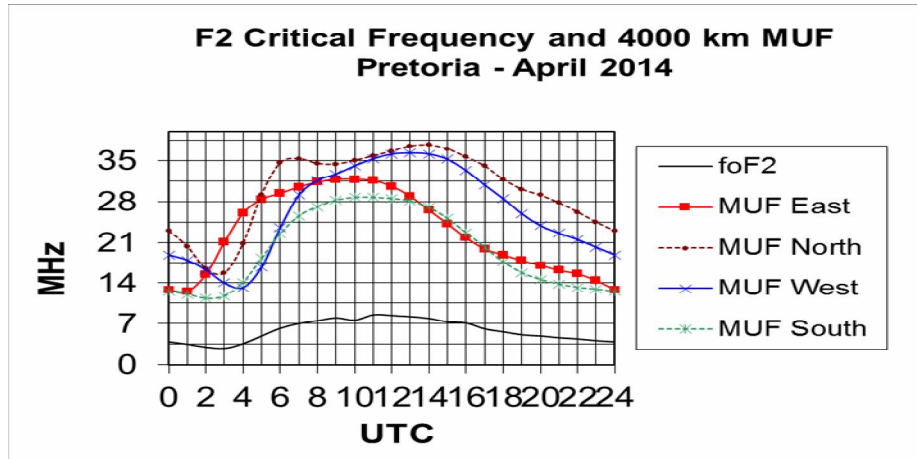
(see also our website propagation tab)

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.



(Norway) It's a well-known fishing trick:

Put 12V electrodes into the ground if you want worms come to the surface.

One 23-year-old man withdrew his genes from the pool when he tried to speed up the process.

He figured that 220V, 50Hz, would bring more worms out faster, and he decided to test his theory.

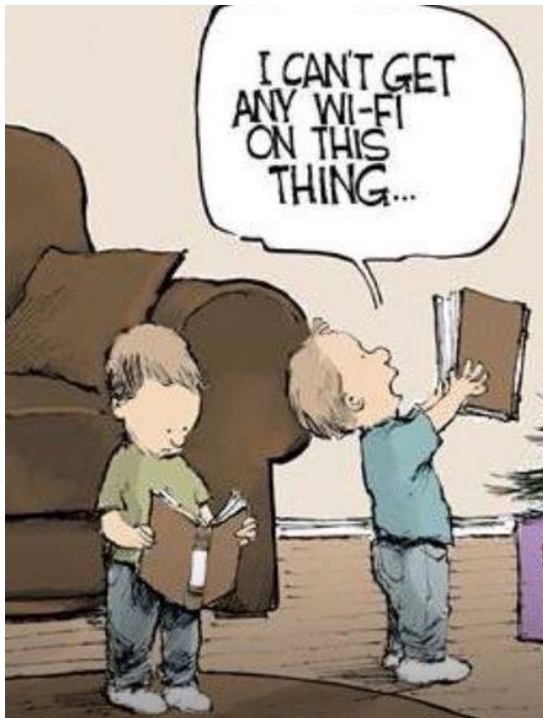
Alas, he did so squatting on a steel bucket, one hand holding an electrode and the other embedded in the ground a few feet away. He seemed determined to enter the eternal fishing grounds. Quicker than spit, that wish was granted.

(Ukraine) A fisherman in Kiev electrocuted himself while fishing in the river Tereblya.

The 43-year-old man connected cables to the main power supply of his home, and trailed the end into the river.

The electric shock killed the fish, which floated belly-up to the top of the water.

The man waded in to collect his catch, neglecting to remove the live wire, and tragically suffered the same fate as the fish.



The irony of life is that, by the time you're old enough to know your way around, you're not going anywhere.

I was always taught to respect my elders,
But it keeps getting harder to find one.

Adversity - the grindstone of life. Will it grind you down or polish you up?

Napoleon was involved in conversation with a colonel of a Hungarian battalion who had been taken prisoner in Italy.

The colonel mentioned he had fought in the army of Maria Theresa. "You must have a few years under your belt!" exclaimed Napoleon. "I'm sure I've lived sixty or seventy years," replied the colonel. "You mean to say," Napoleon continued, "you have not kept track of the years you have lived?"

The colonel promptly replied, "Sir, I always count my money, my shirts, and my horses - but as for my years, I know nobody who wants to steal them, and I shall surely never lose them."