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WATTS

12-2012

Year 82 + 12m

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

✉ PARC, PO Box 12602, Die Hoewes, 0163, RSA

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

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

PARC Field Day 16-17 November at the QTH of ZS6SF

- more on p3



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- Member news and activities Lede-nuus en Aktiwiteite
- Technical | Field Day Report |
- | Mobile Radio Regs update |
- | Two SS amplifiers compared |
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In hierdie uitgawe

Next fleamarket and socials 2012

8 Dec.
Venue: PMC,
Silverton

Club meeting:
Thursday 6 Dec.
U.P. Clubhouse

PARC Management team / Bestuurspan Aug. 2012 – Aug. 2013

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From the Editor and Management

Vanaf die Redaksie en Bestuur

A Blessed Christmas



It is difficult at the time of writing to realize that the Festive Season is soon upon us. The January issue of Watts will probably appear after Christmas. **The Management Team of PARC will now take the opportunity to wish you and your loved ones a Blessed Christmas and Happy New Year.** May there be new inspiration for the future through the Message and real meaning of Christmas for all. We also wish our Jewish members a happy **Chanukah**.

'n Geseënde Kersfees



Dit is moeilik om nou ten tye van hierdie skrywe te besef te dat die Feesgety alreeds baie naby is. Die Januarie uitgawe van WATTS sal waarskynlik eers na Kersfees verskyn. **Die Bestuurspan van PARK wil nou van hierdie geleentheid gebruik maak om u en u geliefdes 'n geseënde Kersfees en Gelukkige Nuwe Jaar toe te wens.** Mag daar nuwe inspirasie vir die toekoms deur die Boodskap en ware betekenis van Kersfees vir u almal wees.

The Story of the Yule Ham

Many holiday dinners follow family tradition, handed down and shared generation to generation. Ham is always a top pick. What's the story behind the Holiday Ham and what culture originated this as the main part of traditional holiday meals?

As with many holiday customs, there is not one definitive explanation behind the Yule Ham. Here are some common historical accounts:

- Christmas Ham predates Christmas itself, originating from a [Roman mid-winter festival](#) called Saturnalia, in which people ate boar, which ties it to modern-day England.
- [Norse mid-winter feasts](#) were also celebrated by feasting on boar.
- [Germanic custom](#) also ties boars to its seasonal celebration, now associated most closely with Saint Steven's feast day, marked on December 26. In fact, the oldest Christmas carol *The Boar's Head Carol*, p. 1521, was said to be sung at Christmas dinners in England, a custom still carried out today by some particularly in Britain.

If you're of an English, Swedish or Finnish, or German descent, you may still carry forward traditions of your forefathers by baking a Yule Ham. Today, people in the Philippines and Jamaica also traditionally serve Holiday Ham, as do those in Australia. Plenty in the U.S. also serve Yule Ham as well.

Birthdays Verjaarsdae

Dec.



- 02 Antoinette ZS6D, sw of Danny ZS6AW
- 05 Angelique, kleindogter van Erna en whitey ZS6JJJ
- 06 Sylvia, lv van Tjerk ZS6P
- 07 Hansie ZS6AIK
- 08 Hans ZS6KR
- 12 Charl, seun van Karin en Sarel ZS6EK
- 15 Don ZS6AQS
- 15 Almero ZS6LDP
- 21 Retha, sw of Roy ZS6XN

- 23 Niel ZR6AUK, son of Marieta and roy ZS6MI
- 25 Jim ZS6US

Des. Anniversaries Herdenkings

- 01 Elize ZS6LHT en Pieter ZS6PA (28)
- 17 Leanne and Allen ZS6AVC (18)
- 29 Molly ZR6MOL, sw of Richard ZS6UK (36)

- 27 Pierre ZR6ADZ
- 28 Allan ZS6AVC, son of Frances ZR6AUT
- 30 Rika, sw of Errol ZR6VDR
- 30 Corrie, lv van Bridge ZS6BJM
- 30 Juan, seun van Marilize ZS6MVD en Rudi ZS6RVD
- 31 Henk ZS6CS

Lief en Leed | Joys and Sorrows

Molly ZR6MOL has again had a relapse and is in special care.

Nuwe lede | New members

Andre Roux ZS6ARX
and his SW **Marika Roux ZS6MRX**.

Diary | Dagboek (UTC times)

Nov 30 – Dec 02 ARRL 160m Contest 22:00-16:00

Dec

- 02 SARL digital Contest 13:00-16:00
- 06 PARC meeting**
- 07 Schools close
- 08-09 ARRL 10m Contest 00:00-23:59
- 15 OK DX RTTY Contest 00:00-24:00
- 15-16 Croatian CW Contest 14:00-14:00

How to send @ and % in Morse Code

Many of those proficient in Morse might be stumped when it comes to sending @ or %, fortunately the ITU-R recommendation on International Morse Code provides an answer:

The Morse code for @ is .- - .-

For the percentage sign % there is no corresponding signal in the Morse code and they recommend that the figure 0, the fraction bar and the figure 0 shall be transmitted successively. A whole number, a fractional number or a fraction, followed by a % sign, shall be transmitted by joining up the whole number, the fraction number or the fraction to the % by a single hyphen. For 2% you would transmit 2-0/0

HF Veld Kompetisie 2012-11-17 – verslag van Rudi ZS6RVD

Die hele naweek het weereens gegaan oor hoeveel kontakte ons kan maak in 'n uur. Dit was n fees.

Die manne wat die stasie beman het was Pierre Holtzhausen ZS6PJH, Rudie van Dyk ZS6RVD, Andre Coetzee ZS6GCA en Stephen Frost ZR6SJO. Ons het 12h00 Saterdagmiddag begin. Dit het met n groot "bang" afgespring. Dit het baie goed gegaan en ons het hopelik genoeg kontakte gemaak. Ons het ook 'n klompie besoekers gehad wat saam n vleisie kom braai het. Dit was sommer net pret gewees die naweek om weer ons stokperdjie te kan beoefen op so'n manier en sommer dit 'n gesellige geleentheid gemaak om te kuier saam met van die klub se lede. Baie dankie aan al die lede wat die naweek die moeite werd gemaak het om in te kom as kontakte op die radio. Ons waardeer ieder en elkeen se bydrae.

Double rainbow seen at the QTH of Danny ZS6AW and Antoinette ZS6D





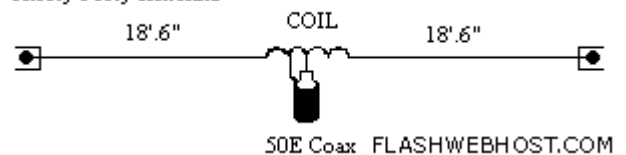
The Field Day Contest participation was conducted on the property of Fritz ZS6SF. Some of our newer members Rudie ZS6RVD and Steven ZS6SJO said they thoroughly enjoyed their participation. Only the 40m band was activated for this occasion scores are eagerly awaited.

Shorty Forty Antenna

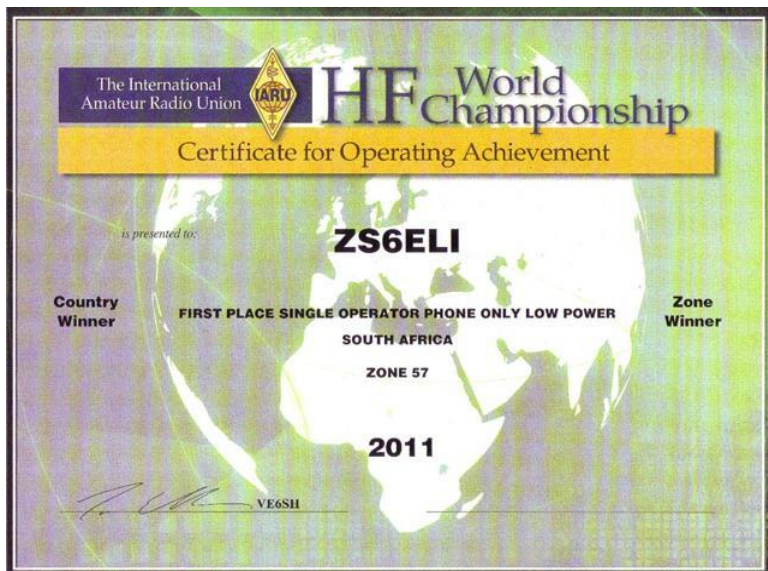
City dwellers and flat dwellers know the practical difficulties of putting up an antenna for 40 meters and most have to be satisfied with the inverted V. Whatever the books say, in practice the inverted V does not come up to the standard of a dipole antenna.

The Shorty Forty can be put up in the space required for a 20m dipole by Jact Sobel W5VM. It is a center loaded antenna with a loading coil at the center. The inductor consists of 30 turns of 12 SWG enamelled copper wire wound evenly spaced on a 2.5 inch diameter PVC tube 5 inches long. The shield of the 50 ohm coaxial feed is connected to the center of the coil. The center conductor is connected to 2 or 3 turns away from the center, to a point which gives the lowest SWR.

Shorty Forty Antenna



50E Coax FLASHWEBHOST.COM



Another first for Evan ZS6ELI – Well done!

Amateur spruit



Radio Equipment in your vehicle & roadblocks (updated) (Thanks to ZARC newsletter)

Road Traffic Ordinance

Regulation 308A

Prohibition on use of communication device while driving

As at January 2006

(1) No person shall drive a vehicle on a public road –

(a) while holding a cellular or mobile telephone or any other communication device in one or both hands or with any other part of the body;

(b) while using or operating a cellular or mobile telephone or other communication device unless such a cellular or mobile telephone or other communication device is affixed to the vehicle or is part of the fixture in the vehicle and remains so affixed while being used or operated, or is specially adapted or designed to be affixed to the person of the driver as headgear, and is so

used to enable such driver to use or operate such telephone or communication device without holding it in the manner contemplated in paragraph (a), and remains so affixed while being used or operated

(2) Sub-regulation (1) does not apply to the following persons while driving in execution of their duties:

(a) The driver of a fire-fighting vehicle;

(b) The driver of a rescue vehicle or an ambulance;

(c) A traffic officer;

(d) A member of the South African Police Service and a member of a municipal police service, both as defined in Section 1 of the South African Police Service Act, 1995 (Act 68 of 1995);

(e) A member of the South African National Defence Force; and

(f) Any person driving a vehicle while engaged in civil protection in accordance with an ordinance made in terms of the Civil Protection Act, 1977 (Act 67 of 1977):

Provided that he or she drives the vehicle concerned with due regard to the safety of other road users.

(3) For the purposes of this regulation –

(a) the word “headgear” includes for the purpose of this regulation a device which is specially designed or adapted to allow the driver to use a cellular or mobile telephone or other communication device in such a manner that he or she does not hold it in one or both hands or with any other part of the body, and which is connected to the cellular or mobile telephone or other communication device concerned, directly or indirectly, while being fitted to or attached to one or both ears of the driver; and

(b) the phrases “cellular or mobile telephone or any other communication device” and “cellular or mobile telephone or other communication device” **excludes** land mobile radio transmission and reception equipment operating in the frequency band 2 megahertz to 500 megahertz that is affixed to the vehicle or is part of the fixture in the vehicle.

Notes

- Sub-regulation (3) substituted by Government Notice R761 of 31 July 2000 with effect 01 August 2000.
- Paragraph (3) (b) substituted by Government Notice R941 of 22 September 2000 with effect 22 September 2000.
- All preceding paragraph (3) (b) apply to the cellular or mobile telephone service.
- Paragraph (3) (b) applies to the Land Mobile Radio Service and the Amateur Radio Service.

Icom IC-PW1 and Expert 2K-FA - Yesteryear to Today: David vs. Goliath (Google it for pictures) (Google it for pictures)

Whilst packing for the upcoming 7P8D DX-pedition, it seemed like a good opportunity to write a comparative article about two of the most talked-about solid state linears available today: the Icom IC-PW1 and the Expert 2K-FA. David vs. Goliath. Old meets new. This article is not about technical specifications. Those are readily available via the internet. This is about my impressions using both side by side, and sharing that experience in the context of commonly asked questions.

The 1988 "old technology" PW-1 replaced the IC-4KL and is still available as a new product. We live in a country where ham radio equipment is extremely expensive and local dealers have little on show to play with and look at. The PW-1 was way ahead of anything else at that time and a lot of amateurs still aspire to owning one, and is talked about in revered tones. But is it still the bees-knees?

Enter the SPE Expert 2K-FA. Capable of up to 2.4 kW output, launched in 2011 amid much hype and anticipation (thanks to the wild success of the earlier Expert 1K-FA), this linear is talked about for a whole different set of reasons.

Owning both (albeit the Expert 2K-FA for only a few days), I thought I'd share my hands-on impressions. This overview is not about power output, per se. We live in the land of 400 watts, which both linears can provide continuously in any mode all day long. Owning one of these is like owning a Ferrari – it can kick butt in the power stakes, but you need to drive it around at 60 km/h in the city, hi. But before moving on, it is interesting to note that for its power to weight ratio the smaller FK-2A wins hands-down with 2.4kW compared to 1kW for the PW-1: a substantial improvement.

Of much more interest to anyone in the market for this type of linear in South Africa will be functionality and the pros / cons of purchasing a trusted brand vs. a new(ish) kid on the block. So here goes:

- **Cost of repair and warranty back-up:** In this country, face it - both linears will cost you an arm and a leg to fix when out of warranty, if you have to ship the unit overseas. Technically, the newer design approach in the 2K-FA means that components items should be easier to obtain if something user-installable breaks or burns out. Whilst under warranty, the Icom IC-PW1 perhaps has an edge due to local representation that may be able to repair your linear without shipping it overseas.
- **Can you trust the company?** SPE have produced the Expert 1K-FA older baby brother for several years already. It has received excellent reviews from the amateur community and due to its small size for a 1 kW PA has become the linear of choice for serious DXpeditions. It comes with a very nice carry-bag too (as does the 2K). It's probably becoming safe to look at SPE as a company that's established enough that you don't have to be nervous about doing business with them. Their customer support in terms of answers to questions (and I had a lot before I purchased!) is excellent, both in the US and in Italy.
- **Size and shape:** Being a tall cube, the IC-PW has never looked good on a desk, and was always awkward to fit somewhere. The 2K-FA is shaped similar to a large older rig. Both are like fire-and-forget missiles. You can set them up remotely out of sight and pretty much forget they exist. Bearing this in mind, perhaps size and shape won't be an issue for you.
- **Cooling methodology and fan noise:** the Expert 2K-FA is the clear winner in the noise department. It's like listening to a dove flapping its wings compared to someone blowing a vuvuzela when the IC-PW1 main fan gets going. So why? Mainly, this has to do with approach to cooling. The IC-PW1 has various small cooling fans, but the deal breaker is the monster mounted on the back and how this is controlled. Icom keep the main cooling fan off or at a fixed low speed (model year dependent), in xmit or receive mode, until the linear reaches a certain threshold temperature. Then it kicks in, flat out, and runs until the temperature has reduced below threshold. The Expert 2K-FA runs no fans at all in receive mode – it's totally silent. When in xmit, all fans (a bank of 4 small ones at the rear), including the antenna tuner unit fan (if you're using the tuner) are continuously and independent controlled in a fully variable way. The linear does not sit there heating up to a threshold point and then need urgent maximum capacity airflow to dissipate heat. The speed variation software control is so fast, that I can hear the fans varying their speeds between sending CW characters at 45 WPM! Now that's control. Couple that with newer blade design, no vent holes on the sides, bottom or top of the casing to let noise out into the shack (as with the PW1) and you have a genuinely quiet cooling system. The Expert 2K-FA is simple. Behind all those holes in the grill on the front is a huge cleanable air filter (something the PW1 lacks). Air is sucked in, straight along the heat sink path and out the back. The straight path minimizes turbulence, inefficiencies and hence noise. But again – although always a concern for amateurs, given that you can locate both linears remotely, perhaps you won't care too much about fan noise.
- **Locating the linear remotely:** 15 years of development has completely changed the approach to controlling solid state linears remotely. The IC-PW 1 has a remote controller that can either be mounted in the body of the linear, or attached via a cable, enabling it to be on the operating desk, and the linear to be as far away as the cable will allow. The 2K-FA has moved into the world of USB cable control and software, providing replication of all the 2K-FA metering and controls on your computer screen (note: The 1K-FA does not have USB control). So what are the pros and cons? In my estimation, the 2K-FA is a clear winner. Here's why: Although nice to look at with "real" metering and tactile buttons, the Icom control head failure of buttons etc. renders the linear is essentially useless until you ship the control head off for repair. Expense aside, you'll be deprived of the use of your linear for up to 3 months in this country. This could be a deal-breaker if you're a contester or rare DX-hunter. The Expert software interface is a far more reliable route to go. It's also customizable and software / firmware updates are produced by SPE to resolve any issues that might come up, such as providing compatibility with a new Windows operating environment (it's already updated for the new Windows 8 OS). If you're into software design, you can also dabble with writing your own to interface the Expert 2K-FA. In terms of remote location – the Expert 2K-FA is not limited by a controller head cable length. And you can get fancy – if you don't want to have a long USB cable and you are adept at IT, you can port the USB to WI-FI and control the 2K-FA in a variety of ways. You could literally put the linear way out in the garage if you wanted to. Being that the 2K-FA is also RF-sensing in terms of band changing ability, you wouldn't even have to have a CAT control line to your radio.

- **Protection Circuitry:** Not much to say here or choose between the two – both linears are comprehensively protected against silly mistakes in a variety of ways.
- **Full Break-in (QSK)** If you're a CW op (I am) it's of interest to note that both linears can handle QSK. It's unfair to compare noise here, as I ordered the optional vacuum relays in the Expert 2K-FA, which pretty much makes it silent, compared to the machine-gun effect of the PW-1 (which is so loud, if it's near the operating position, you'll find yourself using semi bk-in). A 2K-FA with the standard relays would probably also chatter like a telex machine.
- **Antenna Switching:** Both linears make provision for 2 radios. However, this is where the similarity ends. The 2K-FA provides up to 6 antennas, and an S02R RX antenna, whilst the IC-PW1 handles 4 antennas. The 2K-FA has a vastly superior software interface, allowing you to program any 3 of the 6 antennas, per band, per radio! Couple that with built-in control for Steppir and Ultrabeam antennas, and provision for automatic control of an optional band-pass filter unit when operating in an S02R or Dxpedition environment and the 2K-FA blows the IC-PW1 away in this this area – thanks to progress in the fields of on-board processors and software development.
- **Radio Compatibility:** Both linears can be used with various types of transceiver. However, the IC-PW1 requires an Icom transceiver to take advantage of auto band-switching. The 2K-FA can be hard-wired to 2 radios of any brand via CAT control, or simply sense the correct band via the RF on the input port. Another interesting point on radio control. It takes just seven (7) watts of RF to drive the Expert 2K-FA to a 400 watt output level on any band. This means you could use the 2K-FA with a modest 10 watt QRP rig, and attain full legal output. 10 watts only drives my PW-1 to around 180 watts out on some bands.
- **ALC control:** With the PW-1, you need to control your RF out from the linear by means of adjusting RF in from your rig (you can set an overall threshold limit on the rear of a PW-1, but then you get variations of RF out per band. (It's also a fiddly job requiring a small jeweller's screwdriver). There is also the annoyance of having to fiddle the small RF knob on your rig every time you want to operate without the linear after having used it, to bring your barefoot radio back up to the 100 watt level. The 2K-FA allows this control from the linear, meaning you can always leave your transceiver RF control in the maximum or 100 watt position. Note too, that the 2K-FA can also handle the full 200 watt input than some more modern high end transceivers provide. The 2K-FA can also be set to automatically turn on and off with your transceiver.
- **Pricing:** Depending on how you purchase and shop around for discount world-wide, the 2K-FA is going to set you back anything from \$2000 - \$3000 more than a PW-1. With the rand almost 9 to the dollar at the time of writing, it is a considerable additional amount to debate spending. With their similar weights, the Expert 2K-FA represents better value for your transportation buck.

Now the conclusion. This article was written in the context of choosing a brand new linear:

If you're looking for a second-hand deal, clearly, if you can find a local willing to part with a PW-1, it's the only choice. Not only because these linears are slowly reducing in value, thanks to the more modern offerings out there, ranging from Elecraft KPA 500's, Expert 1K-FA's, up to 2K-FA's. But also because you won't yet find Expert 1K and 2K products for sale second hand in South Africa. On the used market, the PW-1 reigns supreme as king of the hill amongst solid state linears. Prices may soon further reduce on the back of rumours about a new generation of solid state linears that may see the light of day from both Yaesu (to replace the venerable Quadra) and Icom themselves.

But when purchasing a new solid-state linear, the choice is not so clear cut. They are all pretty expensive, so budget should not be your overriding priority when making a decision (rather save for a few months/years more, hi). One needs to think back to the days the PW-1 was released. If you'd bought one then, you'd still have a leading solid state linear fifteen years down the line, at a considerably cheaper price. What you buy today, you may be using for 15 to 20 years into the future. Against that type of thinking, the extra R2.5k for newer technology may be worth the investment now.

73, and hope the RF from either of these wonderful linears reaches your headphones whilst we're operating as 7P8D in Lesotho from 23 November to 3 December!

73, Roger ZS6RJ

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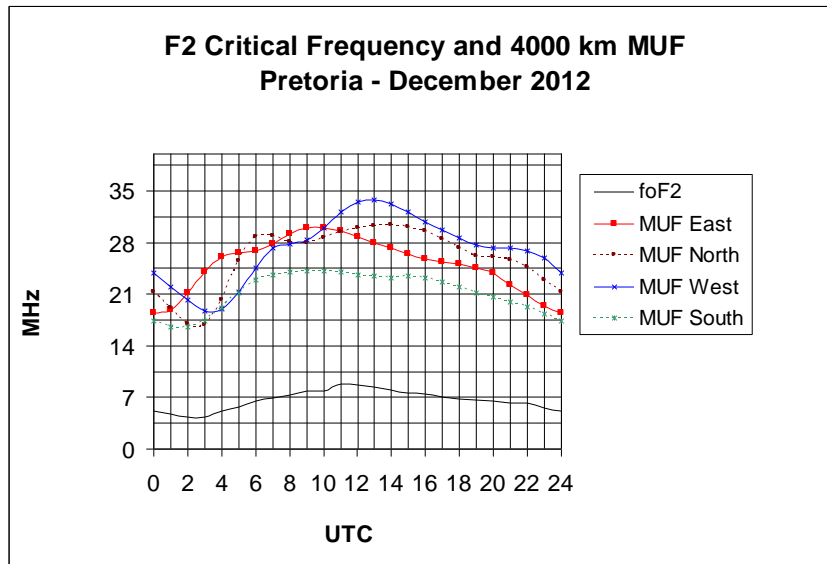
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- 30A DC switching supplies
- 30A DC Anderson Power Poles
- Connectors RF and Audio
- Plug-in triple sequential industrial timer

Contact Hans at 012-333-2612 or 072-204-3991



Long Term HF Propagation Prediction for December 2012

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.

Test yourself with these thinking exercises.

(Do some lateral thinking)

1. A man and his son are in a car accident. The father dies on the scene, but the child is rushed to the hospital. When he arrives the surgeon says, "I can't operate on this boy, he is my son!" How can this be?
2. A man is wearing black shoes, socks, trousers, coat, gloves and ski mask. He is walking down a back street with all the street lamps off. A black car with its lights off approaches but somehow manages to stop in time. How did the driver see the man?
3. One day Kerry celebrated her birthday. Two days later her older twin brother, Terry, celebrated his birthday. How?
4. Why is it better to have round manhole covers than square ones? This is logical rather than lateral, but it is a good puzzle that can be solved by lateral thinking techniques. Supposedly used by a well-known software company as an interview question.
5. A man went to a party and drank some of the punch. He then left early. Everyone else at the party who drank the punch subsequently died of poisoning. Why did the man not die?
6. A woman had two sons who were born on the same hour of the same day of the same year. But they were not twins. How so?
7. A man walks into a bar and asks for a glass of water. The barman pulls a gun and points it at the man. The man says 'Thank you' and walks out. This puzzle claims to be the best of the genre. It is simple in its statement, absolutely baffling and yet with a completely satisfying solution. Most people struggle very hard to solve this one yet they like the answer when they hear it.
8. A murderer is condemned to death. He has to choose between three rooms. The first is full of raging fires, the second is full of assassins with loaded guns, and the third is full of lions that haven't eaten in 3 years. Which room is safest for him?
9. A woman shoots her husband. Then she holds him under water for over 5 minutes. Finally, she hangs him. But 5 minutes later they both go out together and enjoy a wonderful dinner together. How can this be?
10. There are two plastic jugs filled with water. How could you put all of this water into a barrel, without using the jugs or any dividers, and still tell which water came from which jug?
11. What is black when you buy it, red when you use it, and grey when you throw it away?
12. Can you name three consecutive days without using Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, or Sunday?)
13. This is an unusual paragraph. I'm curious how quickly you can find out what is so unusual about it. It looks so plain you would think nothing was wrong with it. In fact, nothing is wrong with it! It is unusual though. Study it, and think about it, but you still may not find anything odd. But if you work at it a bit, you might find out.

1. The surgeon was his mother.
 2. It was day time
 3. At the time of her labour, the mother of the twins was traveling by boat. Terry was born early on March 1st. The boat then crossed the time zone and the younger Kerry was born on 28 February. Thus the younger has a birth day 2 days ahead of the older.
 5. The poison came from the ice cubes in the punch that melted later after he had left.
 6. They were two of a set of triplets or quadruplets. This puzzle stumps many people. Why does the brain always search for complex solutions?
 7. The man had hiccups. The sight of a gun gave him a shock and no longer needed water.
 8. The third. Lions that have not eaten in three years are dead.
 9. She was a photographer. She shot a picture of her husband, developed it, and hung it up to dry.
 10. Freeze them first. Take them out of the jugs and put the ice in a barrel. You will be able to tell which water came from which jug.
 11. The answer is charcoal.
 12. The letter "e", which is the most common letter in the English language, does not appear once in this long paragraph.