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WATTS

07-2012

Year 82 + 7m

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

Wynand ZS6ARF kalibreer hier 'n baie raar Collins KWM-1 met SN #824 waarvan slegs 1150 gemaak is tussen April 1957 en Oktober 1959. Dit is nog in 100% werkende kondisie 14 – 30 MHz CW/SSB in 100kHz segmente. 'n Volledige reeks kristalle word saam verskaf in 'n viniel houer wat dan gekies word vir die frekwensie reeks wat gebruik wil word. 175 watts SSB PEP of 160 watts CW. Dit bevat VOX en 'n ingeboude monitor. 24 buise met twee 6146 buise in die finaal. Op 1 Mei 1960 het Gary Powers ook so een in sy U2 spionasie vliegtuig gehad toe hy deur die destydse Sowjet-Unie afgeskiet is.



In this issue

- Member news and activities Lede-nuus en Aktiwiteite
- Subscription renewal notices
- HD TV – some definitions
- Technical | Resistor values | Tegnies
- Radio failed Amelia Earhart |
- Page eight -- Bladsy agt

In hierdie uitgawe

**Next fleamarkets
and socials 2012**

**28 July
1 Sept
8 Dec**

Venue: PMC, Silverton

PARC Management team / Bestuurspan Aug. 2011 - Aug. 2012

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Your Licence Fee is Due Now

ICASA has started mailing license renewal notices.

The license fee of R120.00 was due on **1 April 2012**. You may also renew for five years at a reduced fee of R501.00.

If you do not receive a renewal notice, the SARL recommends that you pay by using the license number on last year's invoice and your call sign.

Also, mail the payment notification plus your address to KMashile@icasa.org.za.

It is essential that in all payments to ICASA that you include your call sign as a payment reference.

Remember to send any postal and e-mail address changes to admin@sarl.org.za

From a discussion on the SARL Forum regarding the new license structure Peter ZS5PL (pleonard@ICASA.org.za) has access to records and can help with various enquiries besides the advertised kmashile@icasa.org.za

Something not mentioned officially until it was stated on the Forum by Peter is that there are other options as from 31/03/2012 besides the 5-year option:

- 1 year - R120.00
- 2 years - R230.00
- 3 years - R329.00
- 4 years - R419.00
- 5 years - R501.00

Currently it has been observed that when having paid for multiple years the paper license will reflect the expiry date still as for one year only but you will receive a new one every subsequent year.

SARL New Subscriptions Due 1 July

- Ordinary member R400
- Licensed senior member R230 (retired persons over 65)
- Family member R130
- Student member R65

Be an early bird!

PARC SUBS / LEDEGELD 30-06-2011

Please remit your subs in time to our treasurer or by transfer to:

Betaal asb. u ledegeld betyds aan ons tesourier of per oorplasing aan:

Bank : FNB Ordinary members/ gewone lede R150
Branch : 25 20 45 Spouses, pensioners R50
Account : 546 000 426 73

Your call sign must appear as statement text! !

Birthdays Verjaarsdae

July



05 Lynette, daughter of Bill ZS6KO
06 Helen ZR6HN, daughter of Retha and Roy ZS6XN
11 Peter ZR6FD (82)
13 Pieter ZS6PA
17 Lynn, sw of Andr, ZS6BRC
17 Pine ZS6OB
19 Sarina, sw of Willie ZR6WGR
20 Roy ZS6XN
25 Justin ZS6-262, son of Rika and Errol ZR6VDR
26 Frank ZS6GE
27 Julie, sw of Paul ZS6BMF

Anniversaries Herdenkings

Julie

06 Julie and Paul ZS6BMF (49)
15 Ellen and Joe ZS6AIC ()
28 Pat ZR6AVC and Frank ZS6GE (28)

Joys and Sorrows | Lief en Leed

Pieter Fourie het sy RAE geslaag en is nou **ZS6CN**. Geluk!
Charles **ZS6CTO** is moving to Umtata

Diary | Dagboek (UTC times)

July

01-04 Dxpedition Sovereign Military Order of Malta 1A0C (Hot)
07-08 Venezuelan Independence Day DX Contest 00:00-24:00
07-08 DL DX RTTY Contest 11:00-10:59
08 DARC 10m Digital Contest 11:00-17:00
14-15 IARU HF World Championship 12:00-12:00
21-22 CQWW VHF Contest 18:00-21:00

New Members | Nuwe Lede

1. Die Amateur is altyd bedagsaam....

Die amateur is 'n ware heer. Hy sal nooit bewustelik of moedswillig die radiogolwe op so „n wyse vir sy eie genot aanwend om daardeur die genot vir ander te bederf nie.

2. Die amateur is lojaal....

Die Amateur is lojaal teenoor die SARL en bied sy ondersteuning onvoorwaardelik aan. Hy lê hom neer by die onderneming wat die SARL aan die owerheid beloof het.

3. Die amateur is progressief....

Die Amateur is progressief en sy stasie is in tred met die wetenskap. Sy bedieningspraktyk is netjies en ordelik.

4. Die amateur is vriendelik....

Die Amateur is vriendelik en verdraagsaam wanneer aan hom 'n versoek gerig word. Hy verstrek geredelik raad aan alle amateurs en verleen hulp en samewerking in die gees van amateurradio.

5. Die amateur is ewewigtig....

Die Amateur is ewewigtig en laat nie toe dat sy stokperdjie met sy gesinslewe, werk of gemeenskap inmeng nie.

6. Die Amateur is patrioties.....

Die Amateur is patrioties, sy kennis en stasie is altyd vir sy land en gemeenskap beskikbaar

1. The Amateur is always Considerate.....

He never knowingly uses the air in such a way as to lessen the pleasure of other persons.

2. The Amateur is Loyal.....

He offers his loyalty, encouragement and support to his fellow radio amateurs, his Club and to the South African Radio League, through which Amateur Radio is represented.

3. The Amateur is Progressive.....

He keeps his station abreast of science. It is well built and efficient. His operating practice is above approach.

4. The Amateur is Friendly.....

Slow and patient sending when requested, friendly advice and counsel to the beginner, kindly assistance, co-operation and consideration for the interests of others. These are the marks of true Amateur Spirit.

5. The Amateur is Balanced.....

Radio is his hobby. He never allows it to interfere with any of the duties he owes to his home, his job, his school, or his community.

6. The Amateur is Patriotic.....

His knowledge and his station are always ready for the service of his country and his community.

The advent of HD TV – some definitions

Video format supported [image resolution]	Native resolution [inherent resolution] (W×H)	Pixels		Aspect ratio (W:H)		Description
		Actual	Advertised (Mpixel)	Image	Pixel	
720p 1280×720	1024×768 XGA	786,432	0.8	4:3	1:1	Typically a PC resolution (XGA); also a native resolution on many entry-level plasma displays with non-square pixels.
	1280×720	921,600	0.9	16:9	1:1	Standard HDTV resolution and a typical PC resolution (WXGA), frequently used by high-end video projectors ; also used for 750-line video, as defined in SMPTE 296M, ATSC A/53, ITU-R BT.1543.
	1366×768 WXGA	1,049,088	1.0	683:384 (approx. 16:9)	1:1	A typical PC resolution (WXGA); also used by many HD ready TV displays based on LCD technology.
1080p/i 1920×1080	1920×1080	2,073,600	2.1	16:9	1:1	Standard HDTV resolution, used by Full HD and HD ready 1080p TV displays such as high-end LCD, plasma and rear projection TVs, and a typical PC resolution (lower than WUXGA); also used for 1125-line video, as defined in SMPTE 274M, ATSC A/53, ITU-R BT.709;

Video format supported	Screen resolution (W×H)	Pixels		Aspect ratio (W:H)		Description
		Actual	Advertised (Mpixel)	Image	Pixel	
720p 1280×720	1248×702 clean aperture	876,096	0.9	16:9	1:1	Used for 750-line video with faster artifact/overscan compensation, as defined in SMPTE 296M.
1080p 1920×1080	1888×1062 clean aperture	2,005,056	2.0	16:9	1:1	Used for 1125-line video with faster artifact/overscan compensation, as defined in SMPTE 274M.
1080i 1920×1080	1440×1080 HDCAM/HDV	1,555,200	1.6	16:9	4:3	Used for anamorphic 1125-line video in the HDCAM and HDV formats introduced by Sony and defined (also as a luminance subsampling matrix) in SMPTE D11 .

Notes: When transmitted at 2mp per frame, HDTV provides about 5x as many pixels as SD (Standard Definition Television). In South Africa we will have the **new (2009) DVB-T2 standard**.

The letter "p" stands for progressive scan and "i" for interlaced. Often the number of horizontal pixels is omitted, as in the case of 720p and 1080p. The frame rate is sometimes added on as in 1080p-50 or 1080i-50 (in this case "i" implies interlaced scanning format with 50 fields=25 frames per second), each frame being 1920pixels wide and 1080 pixels high. 50 Hz systems support three scanning rates: 25i, 25p and 50p.

There is no standard for HDTV colour support. Until recently the color of each pixel was regulated by three 8-bit color values, each representing the level of red, blue, and green. Together the 24 bits defining colour yielded just under 17 million possible pixel colors. Recently some manufacturers have produced systems that can employ 10 bits per colour (30 bits total) which provides for a palette of 1 billion colors, claiming a much richer picture, but there is no agreed way to specify that a piece of equipment supports this feature. Human vision can discern approximately 1 million colours so an expanded palette is of questionable benefit to consumers.

Types of media: Standard 35mm photographic cinema projection film has a much higher image resolution than HDTV systems, and is exposed and projected at a rate of 24 frames per second. To be shown on standard television, in PAL-system countries, cinema film is scanned at the TV rate of 25 frames/sec causing a speed-up of 4.1 percent - generally considered acceptable. In NTSC-system countries, the TV scan rate of 30 frames/sec would cause a perceptible speedup and the necessary correction is performed by a technique called 3:2 pull-down. Over each successive pair of film frames, one is held for three video fields (1/20 of a second) and the next is held for two video fields (1/30 of a second), giving a total time for the two frames of 1/12 of a second and thus achieving the correct average film frame rate.

Non-cinematic HDTV video recordings intended for broadcast are typically recorded either in 720p or 1080i format as determined by the broadcaster. **720p is commonly used for Internet distribution of high-definition video**, because most computer monitors operate in progressive-scan mode. 720p also imposes less strenuous storage and decoding requirements compared to both 1080i and 1080p. 1080p-24 frame/s and 1080i-30 frame/s is most often used on **Blu-ray Disc**; as of 2011, none support 1080p-60.

High-definition image sources include **terrestrial broadcast, direct broadcast satellite, digital cable, IPTV, Blu-ray video disc (BD), and internet downloads**. **Sony's PlayStation 3 has extensive HD compatibility because of the Blu-ray platform, so does Microsoft's Xbox 360** with the addition of Netflix streaming capabilities.

Your current TV system: Besides an HD or HD-ready television set, other equipment may be needed to view terrestrial HD television. In the US, cable-ready TV sets can directly display HD content. They have a **QAM tuner** built-in and/or a **card slot** for inserting a CableCARD. Here we shall need a **set-top box** to be compatible with analog tuner TV's

Read more information and facts about **recording and compression** at http://en.wikipedia.org/wiki/High-definition_television

Battery Terminals

Automotive batteries typically have one of three types of terminals. In past years, the most common design was the SAE Post, consisting of two lead posts in the shape of truncated cones, positioned on the top of the battery, with slightly different diameters to ensure correct electrical polarity.

The "JIS" type is similar to the SAE but smaller, once again positive is larger than negative but both are smaller than their SAE counterparts. Most older Japanese cars were fitted with JIS terminals. You must ensure that when you are buying a new battery that you know which terminals you have. One must also look at the orientation of and which side of the old battery the terminals are on, otherwise you might find that if the terminals are oppositely oriented that the battery cables will not reach the new battery terminals.

General Motors, and other automobile manufacturers, have also begun using side-post battery terminals, which consist of two recessed female 3/8" threads into which bolts or various battery terminal adapters are to be attached. These side posts are of the same size and do not prevent incorrect polarity connections.

L terminals consist of an L-shaped post with a bolt hole through the vertical side. These are used on some European cars, motorcycles, lawn and garden devices, snowmobiles, and other light duty vehicles.



SAE post clamp



SAE post & Wing Nut



1150K Nut



1150K to 1111K Converter



J Post

Why do resistors come only in certain values?

From curiousinventor.com

Why is it easy to find 4.7k resistors, but not 4.8k resistors? Where do common values like 1.2k, 2.7k, 560, and 820 come from and who decides them? Resistors come in

	(min)	value	(max)
	(90)	100	(110)
	(108)	120	(132)
	(135)	150	(165)
	(162)	180	(198)
	(198)	220	(242)
	(243)	270	(297)

different tolerances, as indicated by the 4th band (gold = 5%, silver = 10%). A 10% 100 ohm resistor is expected to have a value somewhere between 90 and 110 ohms, so it wouldn't make much sense to buy a 101 ohm resistor when it's actual value could be less than a 95 ohm, 10% resistor.

The Electronic Industries Association (EIA) is the primary body that standardizes the values for resistors, and they publish value lists called "E" series. In the 10% series, known as E12, each value is spaced so that there won't be overlap. The min and max values are listed as shown in the table.

The number following the "E" stands for the number of logarithmic steps per decade.



The EIA standard values for resistors are sometimes referred to as the "preferred value" system. This had its origins in the early years of the last century at a time when most resistors were carbon-graphite with relatively poor manufacturing tolerances. The rationale is simple - select values for components based on the tolerances with which they are able to be manufactured. Using 10% tolerance devices as an example, suppose that the first preferred value is 100 ohms. It makes little sense to produce a 105 ohm resistor since 105 ohms falls within the 10% tolerance range of the 100 ohm resistor. The next *reasonable* value is 120 ohms because the 100 ohm resistor with a 10% tolerance is expected to have a value somewhere between 90 and 110 ohms. The 120 ohm resistor has a value ranging between 110 and 130 ohms. Following this logic, the preferred values for 10% tolerance resistors between 100 and 1,000 ohms would be 100, 120, 150, 180, 220, 270, 330 and so on (rounded appropriately).

The EIA "E" series specify the preferred values for various tolerances. The list below is normalized for the decade between 100 and 1000. The values in any decade can be derived by merely dividing or multiplying any entry by a factor of 10. The series are thus:

- E12** 10% tolerance Eg: 100,120,150,180,220,270,330,390,470,560,680Ω etc.
- E24** 5% tolerance. Eg: 100,110,120,130,150,162,169,178,187,196,205Ω etc.
- E48** 2% tolerance Eg: 100,105,107,110,113,115,118,121,124,127,130Ω etc.
- E96** 1% tolerance Eg: 100,101,102,103,104,105,106,107,109,110,111Ω etc.
- E192** 0.5, 0.25, 0.1% and higher tolerances

While the "E" preferred value lists are the best way to insure one is stocking the optimum number of values for a given tolerance, a word of caution is in order. For instance, the E48 list is often used as a stock list for 1% resistors for inventory control (48 values per decade rather than 96), but this practice leaves "holes" or gaps in one's stock not covered by tolerance overlap, an undesirable practice in a prototype lab (less of an issue to the digital designer than to an analog circuit designer). The use of the E48 list for inventory control of 1% resistors works out well because every value on the E48 list just happens to also appear on the E96 list; the holes are thus symmetrical and easily filled by acquisition of one of the other 48 values per decade being omitted from stock. However, this is not always the case as can be seen by comparing the E24 and E96 lists. Nevertheless, many manufacturers make every single value on the E24 list in 1% tolerance even though it makes little mathematical sense (think about the obvious tolerance overlap between the 120 and 121 values for instance). Stocking only the E24 series in 1% will result in less symmetrical holes in stock than the practice of stocking only the E48 series. In any event, one should be aware of these practices to avoid confusion.

Previously dismissed radio signals were credible transmissions from Earhart

(By Rossella Lorenzi Published June 01, 2012
Discovery News) (Slightly abridged by your editor)

Amelia Earhart used radio transmissions on her last flight on July 2, 1937, during her record attempt to fly around the world at the equator.

Dozens of previously dismissed radio signals were actually credible transmissions from Amelia Earhart, according to a new study of the alleged post-loss signals from Earhart's plane.

The study, presented Friday June 01, 2012 at a three day conference by researchers of The International Group for Historic Aircraft Recovery (TIGHAR), sheds new light on what may have happened to the legendary aviator 75 years ago. The researchers plan to start a high-tech underwater search for pieces of her aircraft next July.



"Amelia Earhart did not simply vanish on July 2, 1937. Radio distress calls believed to have been sent from the missing plane dominated the headlines and drove much of the U.S. Coast Guard and Navy search," Ric Gillespie, executive director of TIGHAR, told Discovery News. "When the search failed, all of the reported post-loss radio signals were categorically dismissed as bogus and have been largely ignored ever since," he added.

Using digitized information management systems, antenna modeling software, and radio wave propagation analysis programs, TIGHAR re-examined all the 120 known reports of radio signals suspected or alleged to have been sent from the Earhart aircraft after local noon on July 2, 1937 through July 18, 1937, when the official search ended. They concluded that 57 out of the 120 reported signals are credible.

"The results of the study suggest that the aircraft was on land and on its wheels for several days following the disappearance," Gillespie said. At 07:42 local time, as she flew toward the target destination, Howland Island in the Pacific, with her navigator Fred Noonan, Earhart called the Coast Guard cutter *Itasca*, stationed at Howland Island to support her flight. "We must be on you, but cannot see you -- but gas is running low. Have been unable to reach you by radio. We are flying at 1,000 feet," she said.

Earhart's final inflight radio message occurred an hour later, at 08:43.

"We are on the line 157 337. We will repeat this message. We will repeat this on 6210 kilocycles. Wait," she said.

According to TIGHAR, the numbers 157 and 337 refer to compass headings -- 157 degrees and 337 degrees -- and describe a navigation line that passed not only Howland Island, the target destination, but also Gardner Island, now called Nikumaroro. This uninhabited atoll in the southwestern Pacific republic of Kiribati is where TIGHAR believes Earhart and Noonan landed safely and ultimately died as castaways.

According to TIGHAR's hypothesis, Earhart would have used the aircraft's radio to make distress calls for several days until the plane was washed over the reef and disappeared before Navy searchers flew over the area. TIGHAR built a detailed catalog and analysis of all the reported post-loss radio signals, and selected the credible ones based on their frequencies.

Transmissions from Earhart's *Electra* (NR16020) were possible on three primary frequencies: 3105 kHz, 6210 kHz and 500 kHz. For the latter, however, there were no reported post loss signals. On her world flight, Earhart transmitted on 3105 kHz at night, and 6210 kHz during daylight, using her 50-watt WE-13C transmitter.

The *Itasca* transmitted on 3105 kHz, but did not have voice capability on 6210 kHz. Under favorable propagation conditions, it was possible for aircraft operating on the U.S. west coast at night to be heard on 3105 kHz in the central Pacific. Indeed, the *Itasca* reported hearing such signals on one occasion.

There were three 50 W Morse code radio stations in Nicaragua which could be heard on a receiver tuned to 3105 kHz, but the stations sent only code, not voice. Moreover, all transport aircraft in the area used assigned route frequencies, instead of 3105 kHz. "Therefore, other than *Itasca*, Earhart's *Electra* was the only plausible central Pacific source of voice signals on 3105 kHz," said Gillespie.

Although several of the analyzed post-loss signal reports were determined to be hoaxes, Gillespie ruled out the hypothesis of an illegal transmitter: "We do not really have hoax transmissions but rather reports from people who, for whatever reason, claimed to have heard something they did not hear," Gillespie said.

To make multiple transmissions, the *Electra* plane needed to run the right-hand, generator-equipped engine to recharge the batteries. "The safest procedure is to transmit only when the engine is running, and battery power is required to start the engine," said Gillespie. "To run the engine, the propeller must be clear of obstructions, and water level must never reach the transmitter."

To verify the hypothesis that the plane landed on Nikumaroro's reef, TIGHAR researchers analyzed tidal condition on the island from 2 to 9 July 1937, the week following Earhart disappearance. It emerged that transmission of credible signals occurred in periods during which the water level on the reef was low enough to permit engine operation.

According to Gillespie, at least four radio signals are of particular interest, as they were simultaneously heard by more than one station. The first signal, made when the pilot had been officially missing for just 5 hours, was received by the Itasca, and two other ships, the HMS Achilles, and the SS New Zealand Star.

The Itasca logged "We hear her on 3105 now - very weak and unreadable/ fone" and asked Earhart to send Morse code dashes. The Achilles did not hear "very weak and unreadable" voice, but heard Itasca's request and heard dashes in response. The SS New Zealand only heard the response dashes.

In other cases, credible sources in widely separated locations in the U.S., Canada, and the central Pacific, reported hearing a woman requesting help. She spoke English, and in some cases said she was Amelia Earhart. In one case, on July 5, the U.S. Navy Radio at Wailupe, Honolulu heard a garbled Morse code: "281 north Howland - call KHAQQ - beyond north -- won't hold with us much longer -- above water -- shut off."

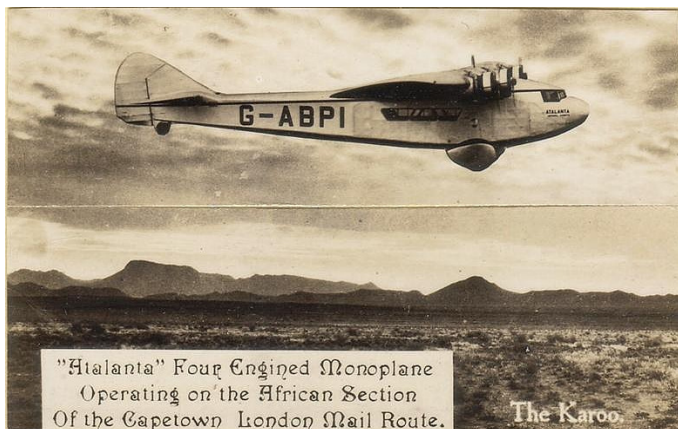
At the same time, an amateur radio operator in Melbourne, Australia, reported having heard a "strange" code which included KHAQQ, Amelia's call sign.

According to Gillespie, the re-analysis of the credible post loss signals supports the hypothesis that they were sent by Earhart's Electra from a point on the reef at Nikumaroro, about ¼ mile north of the shipwreck of the British freighter SS Norwich City. "The results of the study show a body of evidence which might be the forgotten key to the mystery. It is the elephant in the room that has gone unacknowledged for nearly seventy-five years," said Gillespie.

[PHOTOS: Jars Hint at Amelia Earhart Castaway Presence](#) →

[NEWS: Earhart's Anti-Freckle Ointment Jar Possibly Recovered](#) →

First use of radio in South Africa by Imperial Airways – March 1933



Radio facilities were also made available to passengers on the Cape Town – London route on the Kisumu – Cape Town leg.

The planes just commissioned were Armstrong-Whitworth "Atalanta" 4-engined aircraft carrying 9 passengers and mail.

Telegrams could be sent at 11 pence per word.

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

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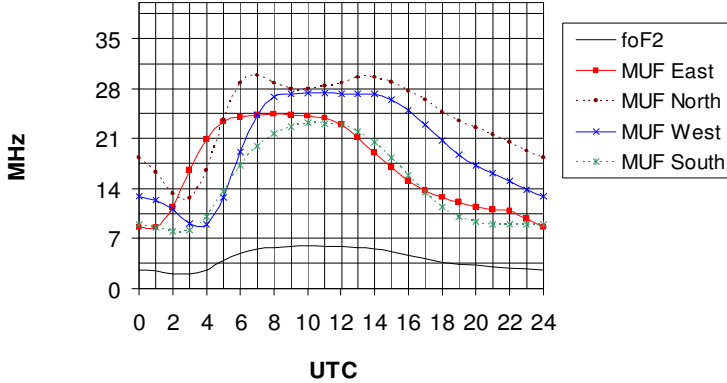
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- 3rd Party scrutiny of projects and documents
- MFJ 259/69 Analyzer repairs and calibration
- Valuation of ham estates and their disposal

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- 30A DC switching supplies
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Contact Hans at 012-333-2612 or 072-204-3991

**F2 Critical Frequency and 4000 km MUF
Pretoria - July 2012**



**Long Term HF
Propagation
Prediction for July
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.

What is a fibula?

A little lie

Explain the phrase 'free press'.

When your mum irons trousers for you.

Joanna works in an office. Her computer is a stand-alone system. What is a stand-alone computer system?

It doesn't come with a chair

Steve is driving his car. He is travelling at 60 feet/second and the speed limit is 40 mph. Is Steve speeding?

He could find out by checking his speedometer.

What did Mahatma Gandhi and Genghis Khan have in common?

Unusual names

Name one of the early Romans' greatest achievements.

Learning to speak Latin.

Where was Hadrian's Wall built?

Around Hadrian's garden

The race of people known as Malays come from which country?

Malaria

Terrible puns...

- I'm reading a book about anti-gravity and I can't put it down.
- I did a theatrical performance about puns. It was a play on words.
- Energizer bunny arrested. Charged with battery.
- I didn't like my beard at first. Then, it grew on me.
- A cross-eyed teacher lost her job because she couldn't control her pupils.
- When you get a bladder infection, urine trouble.
- Broken pencils are pointless.
- Velcro - what a rip off.
- I got a job at a bakery because I kneaded dough.
- Cartoonist found dead in home. Details are sketchy.
- Venison for dinner? Oh, deer.
- I used to think I was indecisive, but now I'm not so sure.
- What do you call a dinosaur with an extensive vocabulary? A thesaurus.
- England has no kidney bank, but it does have a Liverpool.
- I dropped out of communism class because of lousy Marx.
- I used to be a banker, but then I lost interest.

True!

- I think part of a best friend's job should be to immediately clear your computer history if you die.
- There is great need for a sarcasm font.