



ZR6FD logo

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WATTS

06-2013

Year 83 + 6m

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

✉ PARC, PO Box 73696, Lynnwood Ridge 0040, RSA

web <http://www.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



Restoring old equipment

some winter days to restore it to its former glory?

If you are so lucky to pick up another man's junk at fleamarkets why not spend
Check out http://www.ohio.edu/people/posr/bapix/Kni_T60.htm



The **Knightkit T-60** is a kit-built CW and AM transmitter introduced in 1962-63. A very compact design for the 80 to 6 meter ham bands.

The **Knight R-55A** was a matching receiver.

Original pricing in 1963 was \$110 for both

In this issue

- Member news and activities Lede-nuus en Aktiwiteite
- Technical | Resonant listening antennas | Tegnies
Coax connector tool
- Page eight | The career of Thomas Edison | Bladsy agt
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In hierdie uitgawe

Next club events

Fleamarkets at PMC
Wed 1 May (public holiday)
Sat 10 Aug Sat 7 Dec

Club social at U.P.
Thursday 9 May 7pm
Club committee meeting
Thursday 16 May 7pm

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

Committee members

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Historian, Archives, Awards	Tjerk Lammers	ZS6P	zs6p@iafrica.com	012-809-0006	

SOUTH AFRICAN RADIO LEAGUE

SARL National Convention 2013

26 - 28 April 2013



AGM Programme Saturday, 27 April

(Full detail on SARL website)

08:00 Registration and proxies

Refreshments will be served on arrival

09:00 Annual General meeting

Only SARL members may take part in the discussion and vote. Visitor are however welcome

11:00 Coffee, Tea and refreshments

11:30 AGM continues

13:00 Join us for a finger Lunch Cost R60.00 per person. Lunch must be pre-booked

SARL Awards Dinner at Sulla Via (situated on the edge of **Krugersdorp** and overlooks the Cradle of Human Kind. **GPS Coordinates:** S26.06268 E27.80558

19:00 Pre dinner drinks Cash bar

19:30 SARL Awards Banquet Dress Smart Casual

President's address

Presentation of Awards Guest speaker: Dr Anthony Turton

Birthdays Verjaarsdae

May

- 01 Amanda, dogter van Martie en "JB" ZR6TV
- 02 Chris ZS6LOG
- 06 Lourens ZS6KRT
- 10 Roy ZR6RV, son of Marieta en Roy ZS6MI
- 11 Zdena, sw of Ivo ZS6AXT
- 14 Johannes ZS6BVB
- 15 Darren, son of John ZR6JAO
- 17 Vincent ZS6BTY
- 18 Karen, daughter of Pat ZR6AVC and Frank ZS6GE
- 22 Otto ZR6ZRO
- 23 Lily, sw of Harry ZS6AMP



Mei Anniversaries Herdenkings

- 04 Ronel en Pieter ZR6PSR ()

- 25 Tjerk ZS6P
- 26 Jannie ZR6PHD
- 26 Victor ZS6VG
- 31 Gawie ZS6GJJ (81)
- 31 Dave ZS6JW (89)

Lief en Leed | Joys and Sorrows

Your editor **ZS6KR** had surgery on 3 April and is on the mend.
Hein ZS6Q had back surgery and we wish him well.
Eddie ZR6RAS was also under the knife – sterkte Eddie!

Diary | Dagboek (UTC times)

May

- 04 10-10 International Spring Contest 00:01-23:59
- 18-19 His Majesty of Spain Contest CW 12:00-12:00
- 18-19 Baltic Contest 21:00-02:00
- 25-26 CQWW WPX Contest CW 00:00-23:59
- 26 **SARL Digital Contest 13:00-16:00 ???**

Snippets | Brokkies

Iain ZS5IE Completely stripped down and re engineered a Thomson CSF HF TX to original condition and spec. His comment: "Boy was it a lot of work, many many hours went into this one. What a beauty it is, real Rolls Royce quality, nothing but the best".



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! !

SARL Subscriptions Due 1 July

Ordinary member R380
Licensed Senior member R225 (retired persons over 65)
Family member R125
R70 Spouse or dependent of a member
Student member R60

MARION ISLAND ZS8 ACTIVATED.

Operators Carson, ZR6CWI (ZS8C) and David, ZS1BCE (ZS8Z) reportedly have departed Cape Town on 10 April to head to Marion Island.

It was announced this week that there might be two more operators onboard the ship to Marion. Nadia (Carson's girlfriend) and Marius (the team's diesel mechanic) are hoping to write the RAE and get their amateur radio licences. This means there will eventually be four active amateurs on Marion Island during the next year.

Carson and David are expected to be active around mid-May once the ship departs with the old team back to Cape Town. Activity will be on 40-10 meters (No 160 or 80 m) using mainly SSB and the Digital modes.

QSL Manager is Pierre, ZS1HF and he will be assisted by Liz, ZS1XS, and Grant, ZS1GS. Dirk, ZS1X, will also assist this team in the beginning and provide advice and support to Liz and Grant.

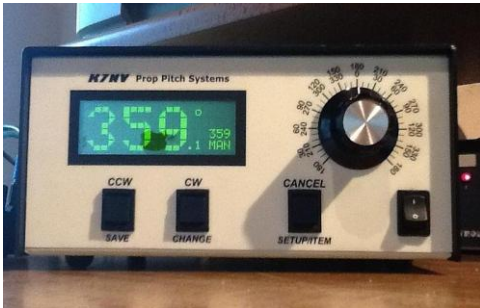
Some serious mechanical engineering by Tjerk ZS6P refurbishing and adapting an old prop pitch motor as rotator.



Mast adapter and clamp

You need one of these when operating real heavy antennas or turn the tower itself. (Your editor is not too familiar how it all fits together but Tjerk will be glad to explain)

They have an immense geardown ratio. This one has a ratio of 9576:1 and custom-made controls available from the USA can ramp speed up and down as well as automatically protecting from all sorts of mechanical mishaps to avoid damage.



PhoneSat launches late April 2013

Engineers and interns at NASA's Ames Research Center, Moffett Field, California, are awaiting launch of Phonesat on a Antares rocket April, 2013. This small cubesat is one built under Ames Research Center's Small Spacecraft Technology Program.

Phonesat will transmit its health status on amateur radio frequency 437.425 MHz using packet (AX.25). Amateur radio operators have the great opportunity to contribute to the project by submitting them to Phonesat's packets page at <http://www.phonesat.org/packets.php>.

NASA's PhoneSat project will demonstrate the ability to launch the lowest-cost and easiest to build satellites ever flown in space - capabilities enabled by using off-the-shelf consumer smartphones to build spacecraft. NASA engineers kept the total cost of the components to build each of the three prototype satellites in the PhoneSat project to \$3,500 by using only commercial-off-the-shelf hardware and keeping the design and mission objectives to a minimum for the first flight.

For more on PhoneSat, see

<http://www.phonesat.org>

Resonant Listening Antennas -- Why?

By, Rick Blythe, VE3CNU

From Eham.net – This caused considerable discussion – see for yourself

I had a revelation the other day regarding listening antennas.

As a ham I am very well aware of the importance of SWR and matching antennas to transmitters. Well enough versed in fact to never have worried about it too much. An Elmer I had in the 1970s told me, whatever power is reflected back from your antenna to your transmitter will meet a mismatch there as well, and will just get reflected back to your antenna system, and will be radiated. Don't worry about it he said, unless you're running VHF or higher, or your transmission line is extremely lossy.

I have seen this wisdom repeated by knowledgeable folks here and there and trusted this advice for decades. It has served me well.

Here's the revelation part. Whenever it has come to receiving antennas, I have never given much thought to resonance, matching or anything of the like. I've always had good results from attaching a random length piece of wire to my shortwave receiver and enjoyed good results. Or so I thought. I even wondered to myself why SWLs even bothered to worry about resonance or feed-lines? It only mattered when transmitting in my book. I think I was wrong now.

RF coming into your shack via some feed-line will meet your radio at whatever impedance it presents. Yes, if there is a mis-match, RF energy will be reflected back up the feed-line. Here's the point- Once reflected back to the antenna system, the majority of the energy will be radiated out of the antenna!

I never considered that before. I figured, I'm receiving only, nothing is getting transmitted here. That's a wrong assumption. We might only be talking about micro-volts, but your antenna is transmitting reflected energy!

Think about that!

Simple, Inexpensive Coax Connector Tool

By Joseph Lawrence, K9RFZ (from Eham.net)

I use a lot of PL-259 connectors to build feedline cables for friends and recent Technician hams that need some help getting on the air. I have streamlined the process by using a coax prep tool similar to the DX Engineering DXE-UT-8213 and the K4AVU crimp tool mounted in a bench vise. The slowest step in the process is attaching the connector to the prepared coax. Aside from aligning the connector and making certain the center conductor wires all fit into the center pin, I still use a pair of vise grips to grab the connector and thread it onto the coax outer covering. I take special precautions to assure the vise grip is snug enough so the jaws don't grind the connector and yet not too snug that it deforms the connector. With a little creativity and time, I've replaced the vise grips with a simple and inexpensive tool that protects the connector and requires minimal effort to get the connector all the way onto the coax.



I reused a PL-259 barrel and glued it inside a PVC T-connector with the threads pointed outward. I found the $\frac{3}{4}$ " with threaded $\frac{1}{2}$ " PVC connector gives a modest fit to the PL-259 barrel. I used Gorilla Glue and coated the PVC threads before inserting the barrel. This glue expands as it dries and some glue wicked up the connector along the knurled edge.

Prep the coax as usual, but then thread the PL-259 connector into the new tool.



Line up the connector on the coax and twist away.



The T-connector side openings allow you to see when the center conductor has reached the tip of the connector.

Just unthread the tool from the installed connector and I'm ready to crimp the connector and solder the tip for another flawless installation.

For the price of a PVC connector, a leftover PL-259 barrel, and some glue, I have a tool that does the job quickly every time.

Thomas Edison

extracted from Wikipedia

Thomas Alva Edison (February 11, 1847 – October 18, 1931) was an American inventor and [businessman](#). He developed many devices that greatly influenced life around the world, including the [phonograph](#), the [motion picture camera](#), and a long-lasting, practical electric [light bulb](#). Dubbed "The Wizard of Menlo Park", he was one of the first inventors to apply the principles of mass production and large-scale teamwork to the process of invention, and because of that, he is often credited with the creation of the first industrial research laboratory.

Edison is the fourth most prolific inventor in history, holding 1,093 US patents in his name, as well as many patents in the United Kingdom, France, and Germany. He is credited with numerous inventions that contributed to mass communication and, in particular, telecommunications.

"Genius is one percent inspiration, ninety-nine percent perspiration."
Thomas Alva Edison, [Harper's Monthly](#) (September 1932 edition)

Early life

In school, the young Edison's mind often wandered, and his teacher, the Reverend Engle, was overheard calling him "addled".

This ended Edison's three months of official schooling. His mother taught him at home.

Growing up, Edison sold candy and newspapers on trains running from Port Huron to Detroit, and sold vegetables to supplement his income. He also studied qualitative analysis, and conducted chemical experiments.

He became a telegraph operator after he saved a three-year-old from being struck by a runaway train. In 1866, at the age of 19, Edison moved to Louisville, Kentucky, where, as an employee of Western Union, he worked the Associated Press bureau news wire. Edison requested the night shift, which allowed him plenty of time to spend at his two favorite pastimes- reading and experimenting. Eventually, the latter pre-occupation cost him his job. One night in 1867, he was working with a lead-acid battery when he spilled sulfuric acid onto the floor. It ran between the floorboards and onto his boss's desk below. The next morning Edison was fired.

One of his mentors during those early years was a fellow telegrapher and inventor named [Franklin Leonard Pope](#), who allowed the impoverished youth to live and work in the basement of his Elizabeth, New Jersey home. Some of Edison's earliest inventions were related to telegraphy, including a stock ticker. His first patent was for the electric vote recorder, (U.S. Patent 90,646), which was granted on June 1, 1869.

Edison began his career as an inventor in Newark, New Jersey, with the automatic repeater and his other improved telegraphic devices, but the invention that first gained him notice was the [phonograph](#) in 1877. This accomplishment was so unexpected by the public at large as to appear almost magical. Edison became known as "The Wizard of Menlo Park," New Jersey. His first phonograph recorded on tinfoil around a grooved cylinder, but had poor sound quality and the recordings could be played only a few times. In the 1880s, a redesigned model using wax-coated cardboard cylinders was produced by [Alexander Graham Bell](#), [Chichester Bell](#), and [Charles Tainter](#). This was one reason that Thomas Edison continued work on his own "Perfected Phonograph."

Menlo Park

Edison's major innovation was the first industrial research lab, which was built in Menlo Park, New Jersey. It was built with the funds from the sale of Edison's [quadruplex telegraph](#). After his demonstration of the telegraph, Edison was not sure that his original plan to sell it for \$4,000 to \$5,000 was right, so he asked Western Union to make a bid. He was surprised to hear them offer \$10,000, (\$202,000 USD 2010) which he gratefully accepted.

The telegraph was Edison's first big financial success, and Menlo Park became the first institution set up with the specific purpose of producing constant technological innovation and improvement. Edison was legally attributed with most of the inventions produced there, though many employees carried out research and development under his direction.

His staff was generally told to carry out his directions in conducting research, and he drove them hard to produce results. [William Joseph Hammer](#), a consulting electrical engineer, assisted in experiments on the telephone, phonograph, electric railway, [iron ore separator](#), [electric lighting](#), and other developing inventions but worked primarily on the incandescent electric lamp and was put in charge of tests and records on that device. In 1880, he was appointed chief engineer of the Edison Lamp Works. In his first year, the plant under General Manager [Francis Robbins Upton](#) turned out 50,000 lamps. [Frank J. Sprague](#), a competent mathematician and former naval officer, joined the organization in 1883 and contributed to expanding Edison's mathematical methods.

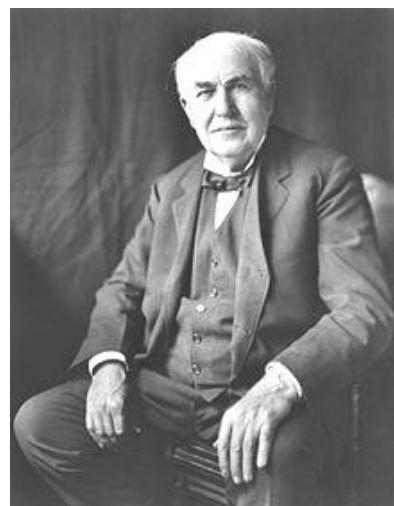
Nearly all of Edison's patents were *utility patents*, which were protected for a 17-year period and included inventions or processes that are electrical, mechanical, or chemical in nature. About a dozen were *design patents*, which protect an ornamental design for up to a 14-year period. As in most patents, the inventions he described were improvements over prior art. The phonograph patent, in contrast, was unprecedented as describing the first device to record and reproduce sounds.

In just over a decade, Edison's Menlo Park laboratory had expanded to occupy two city blocks. Edison said he wanted the lab to have "a stock of almost every conceivable material".

A newspaper article printed in 1887 reveals the seriousness of his claim, stating the lab contained "eight thousand kinds of chemicals, every kind of screw made, every size of needle, every kind of cord or wire, hair of humans, horses, hogs, cows, rabbits, goats, minx, camels ... silk in every texture, cocoons, various kinds of hoofs, shark's teeth, deer horns, tortoise shell ... cork, resin, varnish and oil, ostrich feathers, a peacock's tail, jet, amber, rubber, all ores ..." and the list goes on. With Menlo Park, Edison had created the first industrial laboratory concerned with creating knowledge and then controlling its application. In 1877–78, Edison invented and developed the [carbon microphone](#) used in all telephones along with the Bell receiver until the 1980s.

Electric light

Edison did not invent the first electric light bulb, but instead invented the first commercially practical incandescent light. A patent was granted on January 27, 1880. It was not until



several months after the patent was granted that Edison and his team discovered a [carbonized bamboo](#) filament that could last over 1,200 hours. It was during this time that he said: "*We will make electricity so cheap that only the rich will burn candles.*"

On October 8, 1883, the [US patent office](#) ruled that Edison's patent was based on the work of William Sawyer and was therefore invalid. Litigation continued for nearly six years, until October 6, 1889, when a judge ruled that Edison's improvement claim for "a filament of carbon of high resistance" was valid. To avoid a court battle with Joseph Swan, whose British patent had been awarded a year before Edison's, he and Swan formed a joint company called [Ediswan](#) to manufacture and market the invention in Britain.

Electric power distribution

Edison patented a system for electricity distribution in 1880, which was essential to capitalize on the invention of the electric lamp. On December 17, 1880, Edison founded the [Edison Illuminating Company](#) which established the first investor-owned electric utility in 1882 on Pearl Street Station, New York City. It was on September 4, 1882, that Edison switched on this generating station's electrical power distribution system, which provided 110 volts DC to 59 customers.

Earlier in January 1882, he had switched on the first steam-generating power station at Holborn Viaduct in London. The DC supply system provided electricity supplies to street lamps and several private dwellings within a short distance of the station. On January 19, 1883, the first standardized incandescent electric lighting system employing *overhead wires* began service.

War of currents

Edison's true success, like that of his friend Henry Ford, was in his ability to maximize profits through establishment of mass-production systems and intellectual property rights. [George Westinghouse](#) and Edison became adversaries because of Edison's promotion of DC power distribution instead of the more easily transmitted AC system. In 1887, there were 121 Edison power stations in the US delivering DC electricity to customers. When the limitations of DC were discussed by the public, Edison launched a propaganda campaign to convince people *that AC was far too dangerous to use*. The problem with DC was that the power plants could economically deliver DC electricity only within about one and a half miles from the generating station, so that it was suitable only for central business districts. When George Westinghouse suggested using high-voltage AC instead, as it could carry electricity hundreds of miles with marginal loss of power, Edison waged a "*War of Currents*" to prevent AC from being adopted.

The war against AC led him to become involved in the development and promotion of the [electric chair](#) (using AC) as an attempt to portray AC to have greater lethal potential than DC. Edison went on to carry out a brief but intense campaign to ban the use of AC or to limit the allowable voltage for safety purposes. As part of this campaign, Edison's employees publicly [electrocuted](#) stray or unwanted animals to demonstrate the dangers of AC; alternating electric currents are slightly more dangerous in that frequencies near 60 Hz have a markedly greater potential for inducing fatal "cardiac fibrillation" than do direct currents. On one of the more notable occasions, in 1903, Edison's workers electrocuted [Topsy the elephant](#) at Luna Park, near Coney Island, after she had killed several men and her owners wanted her put to death. His company filmed the electrocution.

AC replaced DC in most instances of generation and power distribution, enormously extending the range and improving the efficiency of power distribution. DC had the advantage that large [battery](#) banks could maintain continuous power through brief interruptions of the electric supply from generators and the [transmission system](#). Utilities in Chicago had [rotary converters](#) or [motor-generator](#) sets, which could change DC to AC and AC to various frequencies in the early to mid-20th century. Utilities supplied rectifiers to convert the low voltage AC to DC for such DC loads as elevators, fans and pumps. There were still 1,600 DC customers in downtown New York City as of 2005, and service was finally discontinued only on November 14, 2007. Most [subway systems](#) are still powered by direct current.


Other inventions and projects

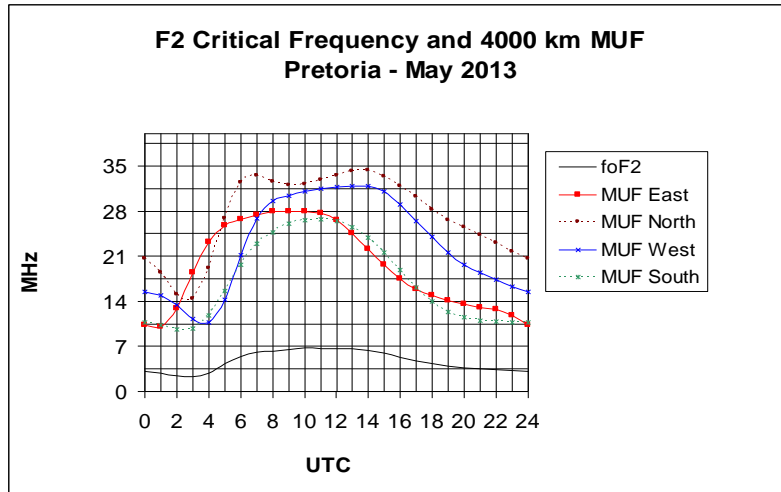
The Fluoroscope (X-rays to take radiographs) , motion picture camera (Kinetograph) , Kinetoscope (peep hole viewer) , motion pictures with voice soundtrack on cylinder recordings, mechanically synchronized with the film, were some of his many further ventures including contributions to Henry Ford's automobile technology.

The final years

Edison was active in business right up to the end just months before his death. He died of complications of diabetes on October 18, 1931. Edison was heavily influenced by [Thomas Paine's The Age of Reason](#) though he denied being an atheist. He was quoted as saying: " There is no such denial, what you call God I call Nature, the Supreme Intelligence that rules matter. It is doubtful in my opinion if our intelligence or soul or whatever one may call it lives hereafter as an entity or disperses back again from whence it came, scattered amongst the cells of which we are made."

He was ardently opposed to the gold standard, and debt based money. Famously, he was quoted in the New York Times stating "Gold is a relic of Julius Ceasar, and interest is an invention of Satan."

 <p>C/O NELSPOORT & 801 MALMESBURY STR, WINGATE PARK, PRETORIA [S25.49.36 & E28.16.07]</p> <p>ICOM HAMSHACK (PTA) Pine ZS6OB 082 4477 823 AUTHORIZED ICOM DISTRIBUTOR</p> <p>FOR ALL YOUR ICOM PRODUCTS & ACCESSORIES SPECIALLY MANUFACTURED VHF/UHF EX60B ANTENNA SYSTEMS FOR: EME, TROPO, MS, REPEATER & SATELITE SYSTEMS</p>	<ul style="list-style-type: none">• General equipment and TV 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• Valuation of ham estates and their disposal <p>and products:</p> <ul style="list-style-type: none">• 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 timer <p>Contact Hans at 012-333-2612 or 072-204-3991</p>
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Long Term HF Propagation Prediction for May 2013

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.

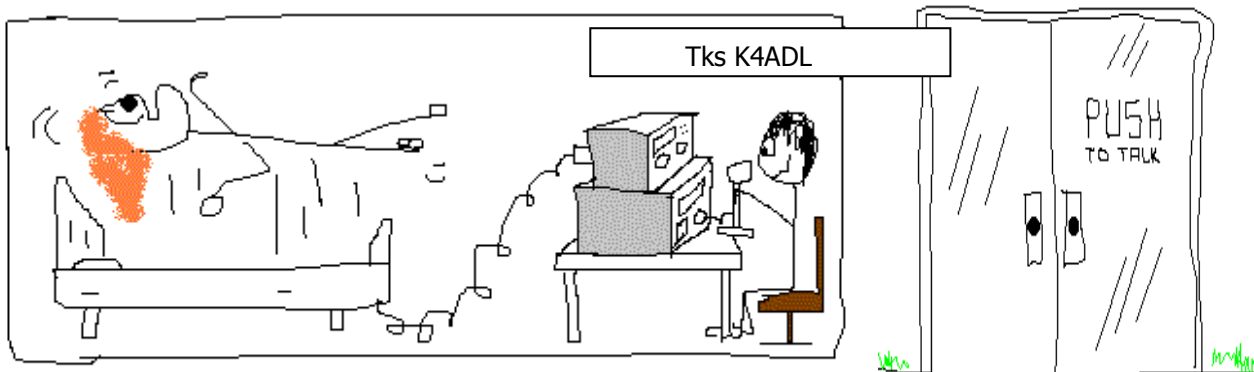
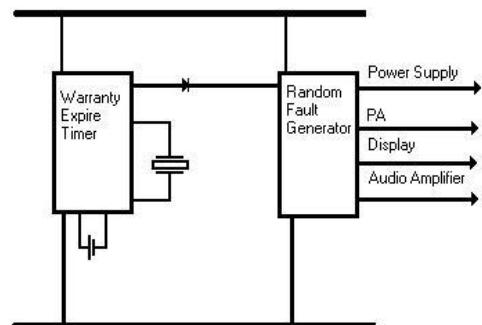
Some Q signals have never made it to the official list. Here are some that may agree would be useful in appropriate situations. As with regular Q signals, each can be a statement or a question, depending on whether a question mark follows it. (Thanks to <http://highfields-arc.co.uk/fun/amrad.htm>)

- QBA - My antenna is BIG! - How big is your antenna?
- QBO - Don't sit next to that guy in the meeting. - Buddy, can you spare some soap?
- QBS - It's getting deep in here - Did I tell you about the one that got away?
- QCW - I am going to whistle Morse Code on FM (or SSB). - Why are you whistling Morse?
- QDR - Damn Right the frequency is busy! - Do you have a Receiver? (In response to QRL?)
- QET - Phone home. - Has anyone called me from another planet?
- QEW - Copy is difficult due to Ear Wax. - Is copy difficult due to Ear Wax?
- QFH - This frequency is MINE! - go elsewhere. - Is this frequency hogged?
- QHI - I am jumping in to say hi, then going QRT. - Are you leaving after only one transmission?
- QLF - I am sending with my left foot. - Are you sending with your left foot?
- QOK - Your last transmission was Okie Dokie. - Was my last transmission OK?
- QPM - Your signal is purr modulated. - Is my signal purr modulated?
- QRC - Warning, rag chews on frequency. - Are you a rag chews?
- QRW - Means Qrp - Really Weak. - Qrp, you are Really Weak?
- QWC - I have to go to the bathroom
- QZZ - I fell asleep at the mike. - Is that a mains hum, or are you snoring?



Built-in obsolescence....

"This is the last time you're coming home late from your ham radio club meeting!"
(VE2EDP)



ONCE A COMMON PRACTICE FOR APARTMENT DWELLERS, LOADING UP THE BEDSPRINGS IS NOW CONSIDERED POLITICALLY INCORRECT.

THE FRONT DOOR AT ACME MICROPHONE COMPANY