

# HAMS

# Keywite

October 2009

# NEWS

[www.marc.org.za](http://www.marc.org.za)

PO Box 1076, Hilton, 3245

## M I D L A N D S   A M A T E U R   R A D I O   C L U B



AFFILIATED TO  
THE SARL & IN  
ASSOCIATION  
WITH THE NATAL  
CARBINEERS

### The Chairman's Ruminations

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The end of 2009 is rapidly approaching with just two months to go. By the time you read this edition I hope we will have the results for the 16 Candidates that wrote their RAE exams on the 22 October. I and, I am sure, many others look forward to hearing these new Hams on the air. In total some 120 odd candidates wrote the RAE in the country. PMB had the second highest number of candidates

I must thank both Craig ZS5CD and Evert ZS5EFP for their time in giving lectures, they did a sterling job. Some of the candidates have now expressed the wish to write the class A RAE in May 2010 and we hope that we can begin the lectures early in the new year. We will also run the class B lectures if there are candidates, as and when required.

Our next meeting will be the combined get together with the Durban/Highway guys at Midmar on 22 November. This will be a most enjoyable event and the whole family is most welcome. We are trying to arrange a presentation or two and even a workshop on antenna construction. I hope that as many as can make will attend, even if just for the Saturday. There is a open water swim on the Sunday so I would advise that those wishing to camp should make their bookings early.

The new South African satellite appears to be make good progress with its testing and it has now been designated t as SO-67. The bird can be monitored on 435,350 MHz and see the AMSATSA web site for more details, [www.amsatsa.org.za](http://www.amsatsa.org.za).

The new constitution is available on the club web site and has been emailed to those that can receive emails and will be sail mailed with this edition of HHN. I am pleased with the out come and I do believe that we have a well balanced and carefully thought out constitution that will stand the club in good stead for the future.

Finally, the committee is looking to the members to come forward with items of interest or subjects that are of interest to members for future meetings.

Enjoy the air waves.  
Mike ZS5 BGV

## Diary of Events

21/22 November  
21 November

Combined club camping weekend at Midmar Dam for the SARL HF field weekend  
Marc monthly meeting

<b>The M.A.R.C. Infrastructure</b>			
<b>Voice Repeaters (FM)</b>		<i>Visit <a href="http://www.marc.org.za/pages/freq.htm">www.marc.org.za/pages/freq.htm</a> for updates of this list</i>	
VHF	Tx	Rx	Equipment
Howick - off air	145.6625MHz	145.0625 MHz	SCR200 20W, Diamond X-200 on rx and tx
Estcourt - off air	145.700 MHz	145.100 MHz	Emcom SA256 25W, Diamond X-200 on tx
Franklin - off air	145.725 MHz	145.125 MHz	GE MVP 10W - off air
Worlds View	145.750 MHz CTSS 88.5	145.150 MHz	Emcom SA256 25W, Diamond X-200 on rx and tx
Greytown	145.775 MHz	145.175 MHz	Home Brew @ 20w, Diamond X-200 on rx and tx
Underberg	145.7875MHz CTSS 88.5	145.1875MHz	Q8000 30W
Windy Hill	Will be taken over by Hamnet - off air		
<b>UHF</b>			
Mt Gilboa	439.225 MHz	431.625 MHz	General Electric MII, Diamond X-200 on rx and tx
Zwartberg	438.775 MHz CTSS 110.9	430.175 MHz	GE MVP 15W - off air
<b>APRS</b>			
The national APRS frequency is 144.800 MHz (Tx & Rx). The I-Gate is at ZR5S (Blackridge). Fixed stations should beacon at approximately 30min intervals with a path of WIDE5-5. Mobile stations should beacon at approximately 1min intervals with a path of WIDE5-5. We have aprs digi's throughout KZN. A PBBS (mailbox) is on ZS0PMB-1 for emergency use. A KA-NODE is on ZS0PMB-7			
<b>Packet Radio</b>			
Hilton	144.625 MHz (Tx & Rx)	AEA PK-88, Slim-Jim	
The PBBS (mailbox) is on ZS0HIL-1. The digi is on ZS0HIL-2. Use Winpack to connect to the PBBS and leave a message for someone.			
<b>ECHO-LINK "voip"</b>			
Our node number is 244279 Call Sign ZS5PMB. This Echo-link facility is available on the Midlands linked Repeater network.			
<b>E-QSO "voip"</b>			
We are in the "101ENGLISH" virtual room, on the "repeater.dns2go.com" server. This is linked to RF at Blackridge on 433.400 MHz simplex.			
<b>BEACONS</b>			
Hilton	50.321 MHz (Tx)	ZS5SIX FSK	
<b>WEB SITES</b>			
MARC'S very own website	<a href="http://www.marc.org.za">www.marc.org.za</a>		
SARL's website	<a href="http://www.sarl.org.za">www.sarl.org.za</a>		
HAMNET website	<a href="http://www.hamnetkzn.org.za">www.hamnetkzn.org.za</a>		

## Regular Events

### The KwaZulu Natal Net:

Starts at 06h00 on 7.055 MHz. in winter and 3.650Mhz in summer and continues until 07h40. Colin ZS5CF hosts the net from 06h00 & Gary Potgieter (ZS5NK)-takes over later on.

### MARC Sunday Morning Net:

Times: 07h45. Club bulletin is presented at 08h00 and the national bulletin at 08h30.

Frequencies: HF: 3.620MHz  
VHF: 145.750, 145.675, 145.775MHz  
UHF: 439.225MHz

**Hamnet Bulletins:** Sundays at 07h00 on 145.625MHz and 3.670MHz  
Wednesdays at 19h30 on 145.625MHz and 3.670MHz

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## Editor's Waffle

Summer has hit us with a bang. On the 12th of October I was on the phone with a client, who lives about 20km as the crow flies away. It was half past four in the afternoon, and he said that it was as dark as in the middle of the night. I looked outside, and saw that it was certainly getting dark from the heavy storm clouds, but nowhere as dark as he was explaining. At 16h50 I had to go outside to fetch something from the vehicle. I stepped out, and came back in to get the torch!

I had been monitoring the weather on the saweather radar site (<http://www.weathersa.co.za/Menus/WXandClimate.jsp#RadarImages>), which showed that the storm was moving from Pmb to Dbn. Luckily it skirted us up to this point, and then expanded to engulf us, striking with a vengeance as though to make up for lost time. We survived the 48mm rain, hail and strong winds well enough. Even the power came back on after a short delay. We did however realise very soon that damage was done. First we noticed that the internet was down. Then it became apparent that Gilboa could not be raised, and that World's View played up. Hopefully you were all spared in this storm!

Unfortunately the uhf hub at Gilboa suffered damage, and is irreparable (thanks to Stanley, ZR5SEM for fetching the repeater from Gilboa, Shaun, ZR5S for taking it to the couriers, and Craig for doing the donkey work, again, in affecting inspections and repairs). We have located another repeater, and are busy concluding the purchase and necessary changes (new xtals etc). The link radio at World's view also seems to have been affected in this storm, and still has to be sorted.

The tone guarding has been left off most of the time, but we have not heard any stations on air who have complained about the tone guarding, in spite of numerous announcements that the tone guarding is off, and is only utilised when necessary. So come on guys, let's hear you on air - it would be nice to have more voices heard on air. Complaining about tone guarding is pointless if you are not going to use the repeaters, whether they are tone guarded or not. Please remember that you can still hear tone guarded repeaters even if your radios do not have CTCSS capabilities.

On this note, it is great hearing you on air again, Hill! We are all glad about your recovery and wish you and Iona all the best.

The Sunday morning nets are also not supported any more, and the storm damaged repeaters obviously don't help as many are excluded as a result. A few snide remarks have been made about them, but nobody has had the courage to put their hand up to help or offer support, at least not directly. At this rate we might as well abandon it, which would be a shame. Your opinion on this matter would be appreciated. Please let the committee know of how you would like the net to continue, or not. There are enough committee members who are willing to run the net as best as they can, in the absence of a volunteer, or volunteers. Mickey's act is not an easy one to follow, so please bear with the net-controllers until they have found their feet, or someone to take over the net.

On a positive note, hf conditions are improving. I have made a few dx contacts on the few occasions I went on air in the last few weeks, including a 20m contact to Indonesia in the last week on a simple Windom antenna, using 60W. I want to spend more time here, but unfortunately salt mining activities take precedence at the moment. My own designed tower is also still in the state of 6m lengths of aluminium raw materials...

Welcome to the new MARC members who wrote the recent exams. I'm looking forward to hearing you all on air soon. I hope that you will be able to join us at Midmar Dam on 21/22 November. If last year is anything to go on, we will have another great weekend there. There will also be more on offer than last year, such as an antenna workshop and other talks. Booking information will be available on our website soon.

Thanks to Errol and Gudrun for their articles this month. Anyone who has some articles of interest, please send them to me. We are always looking forward to these.

73 until next month.  
Mike, ZS5ML

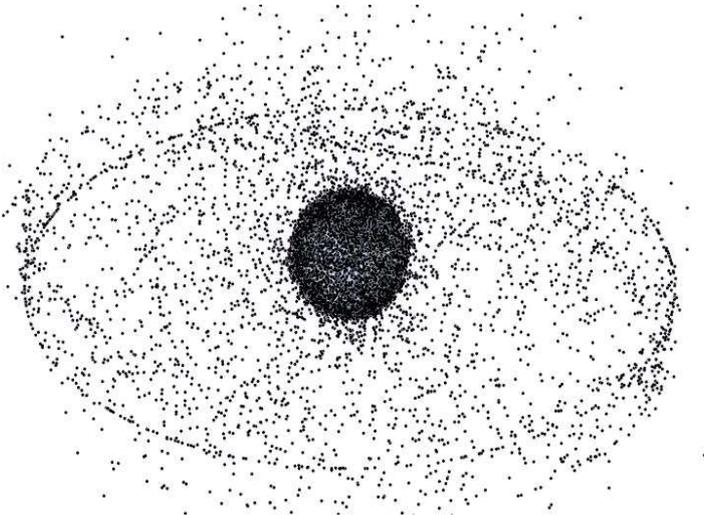
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## Orbital Debris

<http://earthobservatory.nasa.gov/IOTD/view.php?id=40173&src=eo-a-iotd>

Orbital debris, or "space junk," is any man-made object in orbit around the Earth that no longer serves a useful purpose. Space junk can be bad news for an orbiting satellite. On February 11, 2009, a U.S. communications satellite owned by a private company called Iridium collided with a non-functioning Russian satellite. The collision destroyed both satellites and created a field of debris that endangers other orbiting satellites.

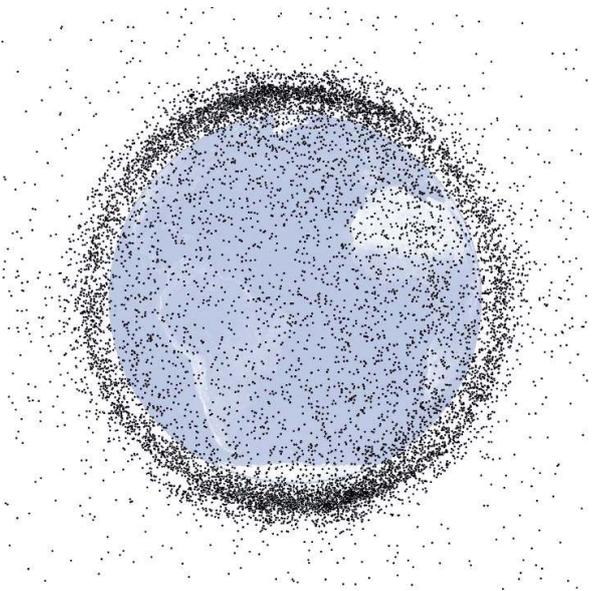
To minimize the risk of collision between spacecraft and space junk, the U.S. Space Surveillance Network tracks all debris larger than 10 centimeters. These images represent all man-made objects, both functioning and useful objects and debris, currently being tracked. The images were made from models used to track debris in Earth orbit. Of the approximately 19,000 manmade objects larger than 10 centimeters in Earth orbit as of July 2009, most orbit close to the Earth, top image. The lower image shows all items in orbit, both close to and far from the Earth.



A distinctive ring marks the geostationary orbit, a unique place where satellites orbit at the same rate that the Earth turns, allowing them to essentially remain over a single spot on Earth at all times. This orbit is invaluable for weather and communications satellites. When satellites in geostationary orbit are taken out of operation, they are moved to another orbit to keep the geostationary orbit clear. The dots between the geostationary orbit and the low-Earth orbit are in an orbit used by GPS satellites or a highly elliptical orbit, called Molniya, used to monitor the far north or south. To read more about common satellite orbits, see Catalog of Earth Satellite Orbits on the Earth Observatory.

Though the black dots that represent objects in space swarm around the Earth, obscuring the surface in the lower image, the space junk situation is not as dire as it may appear. The dots are not to scale, and space is a very big place. Collisions between large objects are fairly rare. The orbit of each piece is well known. If any debris comes into the path of an operating NASA satellite, flight controllers will maneuver the satellite out of harm's way. As of May 2009, satellites in NASA's Earth Observing System had been maneuvered three times to avoid orbital debris. NASA flight engineers are carefully tracking the debris from the Iridium collision, since much of it is near the altitude at which EOS satellites orbit.

To read more about what it takes to maintain a satellite's orbit, common Earth orbits, and the science behind calculating an orbit, please see the Earth Observatory series About Orbits. References: NASA Orbital Debris Program Office. (2009, July). Orbital debris frequently asked questions. Accessed September 11, 2009.



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## HOW I BECAME A RADIO HAM Errol Wilson ZS5EGW

My interest in radio goes back to around 1948 when as a "child" the family lived in Durban North. In Balmoral Drive was a residence which had a monstrosity of a structure in the front garden possibly constructed in timber or even from steel, which supported a conglomeration of "pipes and wires" which rotated on the top thereof.

After making local enquiries, but not unfortunately, to the fellow involved, I was informed that he is a radio ham ----- which meant nothing in the least to me !

As time went by a number of these structures appeared in the area so off to the library to look for a more informative answer. The good old crystal set and a one valve radio were constructed and guess what, ---- they worked in more ways than one !

By then extramural activities took first place such as sport, scouting, music and the fairer sex became the standing order for any further involvement with radio science. The old automobile took over, and hey ho, hey ho, a transfer to the Reef to make a "fortune".

Work, tech, work, a Wife, work, house, work, children, local affairs involvement, and more work followed in that order until I attended a municipal conference in Paulpietersburg in 1991 where I sat next to a lady from Ashburton --- Rosemary Radford. We struck up a conversation about the affairs in general and eventually arrived at a point where I asked her whether she knew of a fellow with the name of Rod Radford.

To cut a very long story short, the rest is history. Rod (ZS5RK) and I were involved in scouting for a number of years and due to my transfer to Johannesburg I lost contact with him so there was a lot of 'fat chewing' which took place. Eventually, to my amazement, it transpired that he had been involved in radio for a number of years a fact about which I was unaware. Again my enthusiasm was aroused after 43 years.

I sat the ZR licence in 1993 although as a late starter, I have found all aspects of radio including the PC, have been most interesting and absorbing.

In conclusion, my only regret is the 43 odd years I have lost in the wilderness which could have been utilized with the involvement in radio technology.

"IF ONLY - - - - - !!"

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### **Timeline of Communication Skills**

By Gudrun Lauterbach, ZU5GL

A few evenings ago Mike asked me, based on a question from Shaun, if there was a "tie-in" or overlap between Morse code, shorthand and the text messaging language of youngsters today. I could not give him an answer as it is more than 25 years since I last used shorthand, I am not up-to-speed with text speak and apart from knowing that Morse code consists of short and long dits, dahs and pauses my knowledge of that means of communication is non-existent! It has, however, led to some pleasurable time spent on the internet researching these means of communication and I would like to share in this article, some of what I found out.

The first thing I found of great interest is that the shorthand I learnt, those many, many years ago, is older than Morse code! Obviously the timeline of the development of communications skills is rather long, however, some of the more salient dates are summarised below:

3500sBC	Egyptians develop hieroglyphic writing, Sumerians cuneiform
1500sBC	Phoenicians develop an alphabet
26-37AD	Roman Emperor Tiberius rules by signalling messages with metal mirrors reflecting the sun
1305	The Chinese develop wooden block movable type printing

1450	Johannes Gutenberg finishes metal movable type printing press
1588	Timothy Bright's <i>An Arte of Shorte, Swifte and Secrete Writing by Character</i> is published. The first form of shorthand writing
1835	Samuel Morse develops the Morse code
1837	Pitman Shorthand is introduced
1843	Samuel Morse builds the first long distance electric telegraph line
1876	Alexander Graham Bell and Thomas A. Watson exhibit an electric telephone
1889	Almon Strowger patents the direct dial telephone
1901	Guglielmo Marconi transmits radio signals from Cornwall to Newfoundland
1925	John Logie Baird transmits the first television signal
1942	Hedy Lamarr and George Antheil invent frequency hopping spread spectrum communication technique
1947	Douglas H. Ring and W. Rae Young of Bell Labs proposed a cell-based approach which lead to "cellular phones"
1989	Time Berners-Lee and Robert Cailliau built the prototype system which became the World Wide Web at CERN
1991	Anders Olsson transmits solitary waves through an optical fibre with a data rate of 32 billion bits per second.

I will now address the history and development of each of these methods individually.

### **SHORTHAND**

The earliest known indication of shorthand systems is from Ancient Greece, namely the Acropolis stone from mid-4th century BC. The marble slab shows a writing system primarily based on vowels, using certain modifications to indicate consonants. Hellenistic tachygraphy is reported from the 2nd century BC onwards with the oldest datable reference being a contract from Middle Egypt stating that Oxyrhynchos was giving the "seimeigrapher" Apollonios two years to be taught shorthand writing. In Ancient Rome, Marcus Tullius Tiro (103BC – 4BC), a slave and later a freedman of Cicero, developed the Tironian notes so that he could write down Cicero's speeches.

After the decline of the Roman Empire, the Tironian notes were not used any more although they were still known and sometimes taught. After the 11th century, however, they were mostly forgotten. When many monastery libraries were secularised in the course of the 16th century Protestant Reformation, long-forgotten manuscripts of Tironian notes were rediscovered.

Towards the end of the 16th century a renewed interest in shorthand, "short writing" was developed in England with Timothy Bright publishing his version in 1588, John Willis in 1608 and Thomas Shelton, whose system was used by Samuel Pepys and Sir Isaac Newton, in 1626. There were of course many more and many variations, but the most famous and commonly used was the system developed by Sir Isaac Pitman in 1837, for being the fastest shorthand method, using only thick and thin strokes, ever developed.

### **MORSE CODE**

Morse code is an early form of digital communication. It uses two states (on and off) composed into five symbols: dit(.) and dah (-), short gap (between letters), medium gap (between words) and long gap (between sentences).

Morse became interested in telegraphy in 1832, and worked out the basics of a relay system in 1835. The equipment gradually improved and was demonstrated in 1837. Morse developed "lightening wires" and "Morse code" and applied for a patent in 1840. A line was constructed between Baltimore, Maryland, and Washington, DC, and the first message, sent on May 24, 1844, was "What hath God wrought!"

Morse's original code consisted of combinations of dits and dahs that represented numbers. Each number represented a word. This required looking up the number in a book to find the word it represented. A telegraph key was then used to tap out the sequence of dits, dahs and pauses that represented the number.

Although Morse invented the telegraph, he lacked technical expertise (and here I sigh with relief as I can just so identify with that!). He entered into an agreement with Alfred Vail who built more practical equipment. Vail developed a system in which each letter or symbol is sent individually, using combinations of dits, dahs and pauses. Morse and Vail agreed that Vail's method of representing individual symbols would be included in Morse's patent, and this system was the version that was used to transmit the first telegraph message.

The code may be transmitted as an audio tone, a steady radio signal switched on and off, and electrical pulse down a telegraph wire, or as a mechanical or visual signal (e.g. flashing light). In general, any code representing written symbols as variable length signals can be called a Morse code, but the term is used specifically for the two kinds of Morse code used for the English alphabet and associated symbols. American Morse code was used in the wired telegraph systems

that made up the first long-distance electronic communication system. International Morse Code, which uses only dits and dahs (eliminating the pauses) is used today.

When considered as a standard for information encoding, Morse code had a successful lifespan. Morse code was used as an international standard for maritime communications until 1999 when it was replaced by the Global Maritime Distress Safety System. When the French navy ceased using Morse code in 1997, the final message transmitted was "Calling all. This is our last cry before our eternal silence".

## TEXT MESSAGING

Text messaging is considered the fastest and most reliable means of communication today. It has gained worldwide popularity and has attracted billions of subscribers. Text messaging technology uses an SMS gateway in order to hook up any mobile SMS service to an existing instant message service, World Wide Web, PDA device, personal computer as well as to any landline phone.

Basically text messaging intends to provide a means of sending messages from one person to another no matter where they are as long as there is signal coverage from the mobile providers. According to some, the first ever text message was sent during 1989 by Edward Lantz, a former NASA employee. The text consisted of numbers read upside down to read the message. On December 3, 1992, the first SMS messaging used in a commercial was sent by Neil Papworth from his desktop computer to Richard Jarvis from Vodafone in the United Kingdom. The message contained the words: Merry Christmas.

At first text messaging was not very popular as it was designed primarily to assist the hearing impaired. However, since the year 2000 there has been a steady increase in the use of text messaging. Since text messaging has become very popular around the world, the text speak or text lingo has been adapted as a way to type messages quickly. Text speak are abbreviations of words (re-inventing shorthand, are we?) which tends to avoid typing out the whole word as this is time consuming. Another reason is that most mobile phones do not have QUERTY keyboards that are just like personal computers.

So, what are some of these abbreviations? Anyone interested, or needing to know, can easily find these lists on the internet. I will be sharing just a few for you:

AFAIK	as far as I know	BBN	bye bye for now
BBS	be back soon	BBFL	best friends for life
BCNU	be seeing you	BRB	be right back
FUBAR	fouled up beyond all recognition	GAL	get a life
GJ	good job	IRL	in real life
IMHO	in my humble opinion	LMAO	laughing my ass off
KIT	keep in touch	L8R	later
LAY	look at you	LOL	laugh out loud
NE1	anyone	NOYB	none of your business
OIC	oh, I see	QT	cutie
ROFL	rolling on the floor laughing	RTFM	read the flippin manual
SETE	smiling ear to ear	SOS	same old story
TNT	'til next time	TTFN	ta ta for now.

So, to answer the question posed at the beginning as to the relationship, if any, between shorthand, Morse code and text messaging: shorthand was invented to write more speedily, Morse code to transmit messages over distance and text speak to write speedily and send messages over distance.

## SOME MISSING Q SIGNALS

There were other interesting snippets I came across during my research and these too I would like to share with you. One site referred to the "Missing Q Signals" and then provided suggestions. These Q signals never made it onto the official list.

QBO	don't sit next to that guy in the meeting
QBS	did I tell you about the one that got away?
QCW	I am going to whistle Morse code on FM
QDR	Damn right the frequency is busy! – in response to QRL
QET	phone home
QFH	this frequency is MINE! – go elsewhere
QHI	I am jumping in quickly to say hi, then going QRT
QOF	Yes, I am an Old Fart
QOK	Your last transmission was Okie Dokie
QRC	Warning, rag chewer on frequency
QWC	Who cares?

QZZ I fell asleep at the mike.  
Taken from the website of K3HRN : [www.zerobeat.net](http://www.zerobeat.net)

### ORIGINS OF THE WORD "HAM"

The true reason why an amateur radio operator is called a "ham" is not known. Some relate the three letters HAM to the names of three great radio experimenters. They are Hertz (who practically demonstrated the existence of electromagnetic waves in 1888), Armstrong (who developed a resonant oscillator circuit for radio frequency work) and Marconi (the 1909 Nobel laureate in Physics, who in the year 1901 established the first transatlantic radio contact).

Of course, there are other theories too. Some people believe that when young and inexperienced radio enthusiasts began to venture on air with crude spark transmitters based on vehicle ignition coils, the Morse code transmission must have been pretty poor and professionals dismissed them as "ham fisted"!

Another version is that during the earlier days of radio communication, government stepped in to conquer short-waves and allowed the radio amateurs to operate only on certain frequencies; thus the frequencies of amateur radio stations were sandwiched like a "ham sandwich" and so amateur radio operators came to be called "HAMS".

My favourite though is that the word HAM stands for "Help All Mankind" as reflected in our service towards people in distress during natural calamities, disasters and civil emergencies!

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If you have any useful articles for this newsletter, please email them to [zs5ml@marc.org.za](mailto:zs5ml@marc.org.za) for publication. Any articles of interest to Amateur Radio, both technical and non technical, will be well received

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### Ham Bulletin Readers

- 01 November - ZS5PJ
- 08 November - ZS5ML
- 15 November - ZS5BGV
- 22 November - ZS5CID
- 29 November - ZS5PJ

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### Tailpiece:

A reward of 500 microfarads is offered for information leading to the arrest of Eddy Current, charged with the induction of 18 year old coil Millie Henry found half choked and robbed of valuable joules.

The unrectified criminal armed with a carbon rod escaped from the Western Primary Cell where he had been clamped in ions awaiting the Gauss chamber.

It was a clever escape. First he refused the electrolytes and then he climbed through a grid despite the impedance of wardens. The electromotive force spent the entire night searching for him in a magnetic field, where he had gone to earth. He has been missing since Farady.

Current is also charged with driving dc motor over a wheatstone bridge and refusing to let the band pass. He is expected to try and change it for a megacycle and return ohm by a short circuit. He my offer series resistance and is a potential killer.