



FIVE AND NINE PLUS

THE OFFICIAL NEWSLETTER
OF THE
APPLEDORE AND DISTRICT
AMATEUR RADIO CLUB

Club Callsigns: G2FKO and GX2FKO
Web Site : www.adarc.co.uk

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June, 2015

EDITORIAL

Welcome to another Club 5&9 Newsletter.

This month's Meeting promises to be a cracker with Mike, your Chairman, giving a fascinating talk on "Baluns & Ununs" - a topic which will appeal to many and reveal what these wondrous devices are all about.



Apologies for having to rush this Newsletter to print as a succession of very enjoyable family visitors have left me struggling to catch up on everything.

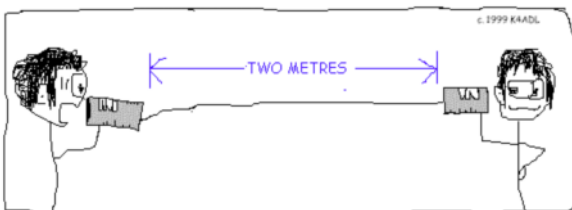
Again, I have delved back into earlier 5&9s to find hopefully another interesting technical article to include in this month's issue.

So with not much to report this month I will keep this Editorial brief.

So enjoy the Newsletter and as always - please let me have any articles, news snippets etc which you feel would be of interest to other members.

Terry (G4CHD)

THE BIRTH OF 2m ??



THE EARLY YEARS

CLUB MEETINGS

Meetings are held at the Appledore Football Social Club starting at 7.30pm for 8.00pm. Visitors always welcome. For further information, contact Alan (M6CCH) - details in the top panel.

- June 15th** "Baluns & Ununs" by Mike (G3PGA)
- July 20th** "Practical Applications for the new Raspberry Pi 2" by Steve (G6SQX)
- August 17th** "Coax Losses - Measurement & Effects" by Terry (G4CHD)
- September 21st** "Bring & Buy"
- October 19th** Open Meeting - details to be confirmed
- November 16th** "MX0LDG Operations from Lundy" by John (G3JKL)
- December 14th** "Club Christmas Party" (open meeting)
- January 18th** "Radio Quiz" by John (G3JKL)
- February 15th** "Whistles to Radios - Police Communications" by Alan (M6CCH)
- March 21st** "Club AGM"
- April 18th** "QSLing - Traditional to the latest methods of confirming a QSO" by John (G3JKL)

BEETHOVEN IN MORSE ??

Try out the following link for a bit of fun if you are a CW addict :-

<http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=16401>

Never ceases to amaze me what exists out there if you play around with Google !!!

REPORT ON THE MAY MEETING

A General Natter Night

There was a very good attendance for this opportunity to have a cuppa and a chat with friends. A few members took the opportunity to pay their subscriptions which were due by the end of May. The evening appeared to be a great success and although unfortunately I arrived a little late, there was plenty to talk about. Such evenings go to show what a friendly Club we are.

Terry (G4CHD)

LOCAL SKEDS

- Zepp Net:** Mon, Tues, Thurs : 145.450 MHz 4pm
Wed via **GB3DN** - 4pm
- 6m Net:** Wednesday, 8pm, **51.480 MHz FM**
- HF Net:** Friday at 3pm **7.145 MHz ± qrm**
- Slow Morse:** Run by **Dave (G3YGJ)** every
Tuesday and Thursday, 7pm clock time
on 145.250 mode FM.
- 70cm Net:** **Sunday, via GB3ND, 11am - noon**
local time.
Available on Echolink node 221334

LOCAL REPEATERS

- 70cm Handy Cross Repeater/Echolink (#221334)**
Gateway (GB3ND)
User: Listen 433.35MHz– Transmit 434.95MHz
Access 1750Hz Tone (Timeout 4.25 mins)/ 77Hz CTCSS
Repeater keeper is Jeff (G4SOF)
- 2m Stibb Cross Repeater (GB3DN)**
<http://www.g0rql.co.uk/gb3dn.htm>
User: Listen 145.6375MHz - Transmit 145.0375 MHz.
Access 1750 Hz Tone or 77 Hz CTCSS Repeater keeper is
Tony (G1BHM).
Yahoo users group for general chat and banter at :-
<http://groups.yahoo.com/group/GB3DN/>

FOR SALE

- Hitachi V-302B 30MHz Dual trace Oscilloscope c/w
Manual £50.
Tequipment S54A 10MHz single trace Oscilloscope c/w
Manual £25.
RAF.R1155 Rx Working but with Mods.Thus only £50.
Home brew PSU (nice one) for above Rx £25
Decade resistor unit (50 high grade resistors) Lab.quality
Decade capacitor unit similar to above
Goodmans 14 inch mains portable TV c/w manual and with
scart socket. Tested with STB. £20.
Grundig Multi band SW RX, has intermittent stop thus
FREE (yes FREE).
Willing to swop any for unwanted ex military or Ham
radios
Contact : **John (G8BXO)** at jhstacey3@googlemail.com

CROSSWORD

This month's Crossword is by Stuart (M1FWD).

The answers will be published in next month's Newsletter. Good luck !

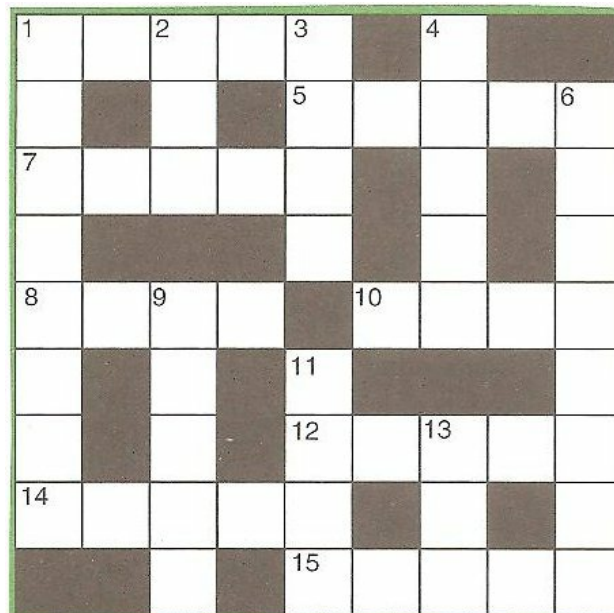


Clues Across

- 1) A sudden burst of radiation from a star (5)
- 5) A unit of heat (5)
- 7) Vegetable - 'allium cepa' (5)
- 8) Abbreviation for regular club membership payments (4)
- 10) With 'socket', used to make an electrical connection (4)
- 12) Re: transmission power, 400 watts is the current full ? limit for use by appropriate amateur radio licence holders (5)
- 14) Sao ?, A state in south-eastern Papa Yankee land (5)
- 15) ? And Melilla, Echo Alpha Nine locations (5)

Clues Down

- 1) A paper size of 8.5 inches by 13.5 inches (8)
- 2) Foxtrot land 'friend' (3)
- 3) Volcano on Italy Tango island (4)
- 4) ? Square, a tool for marking angles in carpentry and stonework (5)
- 6) Juliet Tango land (8)
- 9) Types of this aerial device include: autotransformer, classical transformer, transmission line and delay line (5)
- 11) A combination of parties, governments, groups, etc., sharing a common purpose (4)
- 13) Type of antelope also called wildebeest (3)



Last month's answers :-

Across 1) Alec 4) Reef 7) Raspberry 8) Yeti 10) Brie
12) megahertz 13) nerd 14) kelp

Down 2) leave 3) Capri 5) error 6) Flybe 8) Yemen
9) tiger 10) break 11) Intel

Stuart (M1FWD)

SUDOKU PUZZLE

The aim is to enter a number into each cell so that **any column, or any row, or any block of cells contains all numbers from 1 to 9.**

	3	2	6		4	8	5	
	6							
			9					6
	2				3		6	4
3								5
5		4		7		2		
8			5					
						1		
	1	3	4	2		5	7	

Terry (G4CHD)

APPLEDORE & DISTRICT RADIO CLUB 70 cm NET MENTIONED IN RADCOM

RadCom has published a note about our Sunday Morning net. This is a bit earlier than they originally suggested. We are not sure of what the impact may be although I believe the comments stand on their own anyway. There may be some benefit to us if the letter tempts even one or two extra contacts on Sunday. RadCom tells me that it takes a couple of weeks for the magazine to reach all subscribers (UK and abroad) so it will be interesting to see if there is any impact. Either way it's a bit of PR and the net may benefit from extra users (maybe not too many though!).

If you haven't had a chance to look in on 70cms the details are in the 5 and 9 and our website address is www.projectzeta.co.uk. The web site allows SWLs to join us and make comment (via private e-mail) as well as providing live information on who is on air (or Echolink). As the web usage grows (currently 130 per month) there is a newer version now in beta ready to test. We've had 320 'hits' since the web went live a few weeks ago.

Thanks for your time and please have a look in on a Sunday morning next time you have some time to spare.
Regards and 73s

Kevin (2E0KMG)

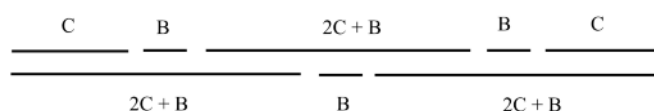
This month's technical article is one I wrote back in 2003 :-

THE STRETCHED DIPOLE

A dipole can be physically shortened by the use of a loading coil at the feed point, or alternately with a capacity hat at its ends. This technique is of course commonly used

in mobile whip design and enables the aerial to remain electrically $\lambda/4$ long whilst being physically shorter. The use of the capacity hat also demonstrates how the dipole can be considered not only as a tuned circuit, but also as an 'opened out' transmission line. Hence a capacitance can be considered as an inductance $\lambda/4$ away.

However, let's return to the intended topic. Many years ago, I was perusing an RSGB Publication of Old Technical Topics when I came across an article on the Stretched Dipole. The original article was in the RSGB Bulletin, July 1961 that was written by that aerial Guru Dud Charman. The idea is to insert capacitance at regular intervals along the dipole. This in turn necessitates lengthening the aerial to maintain resonance. A convenient way to construct such an aerial is from 80-ohm flat twin cable, cutting alternate wires to leave the correct overlapping lengths to provide the capacitances:



Sections C represent capacitance overlaps, whilst sections B are interconnecting 'floating' sections.

For 14MHz, performance is summarised thus:

n	C pF	No sections	Dipole length feet	Input Imp Z ohms	Beam width deg	Gain dB
1	0	2 x 1	33	70	78	0
2	68	2 x 6	66	200	56	1
3	50	2 x 9	99	400	42	2.1
4	43	2 x 12	132	550	32	3.2

The dimensions in inches (halcyon days!!) for cutting 80ohm twin with 20 swg (0.036") conductors for 14MHz:

Wavelength 66 feet		
	C	B
n = 2	47"	19"
n = 3	33"	33"
n = 4	29"	37"

A unique feature of the stretched (loaded) dipole is that it is not affected by a plain wire laid parallel to it; no coupling effects should be noticed until the two are so close that the equivalent aerial capacitances are affected. This means that a 14MHz n = 2 stretched dipole (66 feet long) can be hung just a foot below a 40m conventional dipole!

The problem seems to be feeding such aerials as the feed impedance is quite high (200 – 400 ohms), although 300-ohm ribbon would give an SWR of about 1.5.

My only recollection of experimenting with this aerial was that ribbon cable is not a good idea on a windy day!!

Good experimenting

Finally, please turn to the next and final page for an interesting article by Dave (MOJAP) -

A TIMELY ARTICLE ON BARNSTAPLE'S CLOCKS WITH A PRIZE FOR THE BEST ANSWER



I am indebted to Dave (M0JAP) for this amusing but thought provoking article and his kind offer of a virtual prize for the best answer to the question raised by the article.

As shown by several past articles in the Newsletter this last year or so, I am a time nut. I now have quite a collection of quartz, rubidium and GPS-disciplined oscillators and frequency and time interval testing gear; let me know if you ever need such calibration capability, by the way. This topic is especially important if one wishes to compare with – or even contribute to – geophysics and/or radio-astronomy measurements done by others, whether professional or amateur. And interferometry is an especially demanding area, for which I have a design which incorporates a compact GPS-disciplined oscillator for LO synchronisation and time-stamping accurate within a ns or so to UTC, to be mounted right into the prime focus electronics for each of my L-band (HI line) parabolic antenna RA receivers.

I'm often in downtown Barnstaple on shopping errands for SWMBO, and the opening of the Poundland store very recently seems about as exciting as it gets. For geeks like us there's only Maplins, and that's hardly a technologically enlightening – or cheap – experience there. So sadly for many months now I've resorted to carefully noting the behaviour of the atomic watches in the display windows of Hinds and Samuels, so-called jewellers, on Fore St. The Hinds one directly fronts onto the street, and the Samuels one is the shop nearer Green Lanes that has these watches displayed on the side of its entrance corridor. And I've also compared their timekeeping with the corresponding pieces in the window of the flashier, larger Hinds store, er

jewellers, within Green Lanes. As you know, such watches – and corresponding clocks – are “accurate to one second in 30 million years”. Well, since about last Christmas all the models seem to have near zero turnover, perhaps surprising as they are typically only some



£400 each. But more disturbing is that although one Hinds window shows some four or so all in lock step, the Samuels store has them spanning a range of some 15s, with the second Hinds store showing a half dozen all over the place within a 40s range ! Yes, I know what you're thinking: what a sad fellow is Dave etc. You will be astonished to also learn that the staff in these shops seem quite unconcerned. In fact they were unaware of this oddity, until I so kindly pointed this out. After all such shop window watches always show different times, always have

By the way, the one Hinds window's well regimented watches also agree with my own atomic watch, to the best of my eyesight. (Of course I have one, you didn't think I'd not, did you ?) And perhaps prospective purchasers of atomic watches are discriminating, after all ? That would explain the apparent low turnover.

So what's going on ? They all seem correctly set for the GMT or BST hour, which time is related to UTC – and it's the latter, of course, that is the fountain-head, so to speak. One sec per 30 million years ? He who dares to provide the best qualitative and quantitative response will be announced with much fanfare in next month's Newsletter, and furthermore will enjoy a free virtual flight (FPV) on my new quadcopter (05:00.0 mins accurately timed duration).

Answers to: dave@greenover.net .

Ask the Editor first about arrangements for facilitating payments!

Dave (M0JAP)

So that's it for this month - I hope everyone enjoys the read

Best 73s de Terry (G4CHD)