



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

CLUB'S OFFICERS

President	John Jeffers	G0UNB
Chairman	Terry Adams	G4CHD
Vice Chairman	Dave Lawrence	G0PGK
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Treasurer	Laurence Soutter	G4XHK
Committee	Dave Brierley	G3YGJ
	Mike Hammond	G3PGA
	John Lovell	M0JKL
Co opted	Graham Bailey	G1ZTJ
QSL Manager	John Lovell	M0JKL
Web Master	John Lovell	M0JKL
Editor	Terry Adams	G4CHD

November, 2012

EDITORIAL

Welcome to another 5&9 Newsletter - This month's meeting is the favourite **Bring & Buy** where members can sell any items no longer needed or pick up some bargains followed by a good natter and a cuppa.

There will be **no sales charges** but any contributions of equipment for sale on the Club table or a **donation to the Club** from personal sales would be greatly appreciated. Please could all members ensure that no equipment or packaging is left behind in the Clubhouse at the end of the evening. **It is intended to open the Clubhouse at about 7pm with business starting soon after 7.30pm.**

Regretfully, the **Club QSL Manager, Don (G0RQL)** has had to step down for personal reasons and on behalf of the Club I would like to thank Don for all his hard work in the past helping the Club. At short notice, I am delighted to report that **John (M0JKL)** has offered to take over the QSL Manager's role for which the Club is most grateful.

Furthermore, **Brian (M0BRB), our Club Secretary**, has also indicated that he would like to step down at the next AGM. Brian has been Club Secretary for many years - even before I joined in 2000 - and feels that the time is right to take a well earned rest. Brian would like to continue to organise the radio tutoring and examinations which will become a new Club role. It will be hard to imagine the Club without Brian at the helm but the Club owes him a big thank you for all his hard work over the years. If you feel you would like to take over the Club Secretary's role, please contact your Committee so that your name can go



forward at our next AGM in March 2013.

This Newsletter is the last chance to remind members of our **Christmas Party - details of this year's event are given later in this Newsletter.**

Finally, as a thank you for the use of the Repeater for our Wednesday Zepp Net, the Club has donated £20 to the **GB3DN Repeater Group.**

Enjoy the read

Terry (G4CHD)

CLUB MEETINGS

Unless otherwise stated, Meetings are held at the Appledore Football Social Club starting at 7.30pm for 8.00pm.

Nov 19th	Bring & Buy
Dec 10th	Club Christmas Party
Jan 21st	Erecting & Installing a Hex Beam by John (M0JKL)
Feb 18th	Introduction to Software Defined Radio (SDR) by Dave (2E0CNB)
Mch 18th	AGM
Apl 10/11	G100RSGB Special Event Station at Laurence (G4XHK) qth
Apl 15th	Integrated Data Logging for RAYNET by Steve (G6SQX)

Visitors are always welcome.

For further information, contact Brian Jewell (M0BRB)

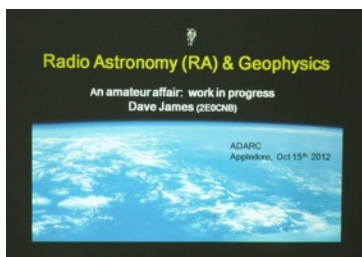
REPORT ON THE OCTOBER MEETING

RADIO ASTRONOMY

by Dave (M0JAP)

Many thanks to Laurence (G4XHK) for the following report.

David James introduced club members to the world of Radio Astronomy at the last Club meeting. While most members will have some knowledge of optical astronomy, it is suspected that very few had any insight into the difficulties of the amateur radio astronomer. Dave's deep technical expertise in this area was impressive, as was his visual presentation (and many thanks for the offer of use of his projector for club presentations).



Club members who have had antenna problems must have been thankful they did not have to set up a RA station.



Dave's quest for a 'quiet' location for his antennas/ sensors involved lengthy negotiations with a number of North Devon farmers – well known for their enthusiasm for radio astronomy!! – to find the corner of a field in which to put the 'observatory' – a wooden shed. The shed had to be provided with solar power, a computer, receivers etc and be

remote data linked with Dave's QTH – out of sight some distance away. Most people would have decided on another hobby by now!

Dave, undeterred, having found his site and erected a sheep proof observatory, then had to persuade the local Vicar to agree to a remote repeater station on top of the Church tower, to allow Dave to drive the observatory from home. More solar power, data repeaters etc were installed at great



height – good for 2m/70cm in future!

Dave's comprehensive talk showed us that the frequencies and techniques used for radio astronomy are similar to amateur radio bands and receiver/antenna technology. But it was clear that a much greater degree of precision was needed than for 'simple' communication use. Very accurate time signals, SDR receivers, and advanced computer programmes seem to be 'standard' kit for radio astronomy, rather than at the 'hi tech.' end of the amateur radio hobby. Many thanks to Dave for the considerable effort put into his fascinating presentation and indeed his RA set up. Club member will no doubt be interested to see the results in due course!

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/>

LOCAL SKEDS

Zepp Net: Mon, Tues, Thurs : 145.450 MHz
Wed : via GB3DN 1600 local time

6m Net: Wednesday, 8pm, 51.5MHz FM

HF Net: Friday at 1600 local time
on 7.185 MHz ± qrm

Slow Morse: Run by Dave (G3YGF) on Tuesdays (suitable Beginners) and Thursdays (suitable more Advanced), 1900 local time on 145.25 MHz (FM) - all are welcome.

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**. This month's puzzle is categorised as **Advanced** difficulty.

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

Terry (G4CHD)

CROSSWORD

This month's Crossword by Stuart (M1FWD). The answers will be published in the next month's Newsletter. Good luck !

Clues Across

- 1) The shorter signal of the two used in Morse code (3)
- 3) Luminous discharges between two electrodes (4)
- 5) Genetic copy (5)
- 6) Insect of the Formicidae (3)
- 8) A two-masted, square-rigged ship (4)
- 9) Colloquial form of 'against' (4)
- 11) Plural 'the' in French (3)
- 13) Capital city of France (5)
- 14) 70 country (5)
- 15) Santa ..., location of John Wayne Airport, California, USA (3)

Clues Down

- 1) Unit used in the comparison of two power levels (7)
- 2) The region between the Cancer and Capricorn latitudes (7)
- 3) 'So be it' at the end of a prayer (4)
- 4) One of the seven deadly ones? (3)
- 6) 7X country (7)
- 7) 3V country (7)
- 10) One type of wire aerial feeder (4)
- 12) Female sheep (3)

1		2		3			4	
5						6		7
8					9			
				10				
11	12			13				
14						15		

Last month's answers :-

Across 1) rheo 3) loop 7) ninja 8) tad 9) Lithuania
12) gin 13) Tamar 14) trap 15) moon

Down 2) Haiti 4) often 5) Padua 6) Vanuatu 9) light
10) Tonga 11) Idaho

Now a special treat for those readers who have completed the crossword this month. Look again at clue 4) down. Do you know what the seven deadly ones actually are? Here they are in anagram form. See if you can sort them out - and let's make sure that none of us falls victim to them; but, if this *should* be the case, please feel free to submit your story to the Editor!

**EPDRI SCSOEVNESOUT TLSU RAENG
YGNLOUTT YENV HSTLO**

(answers on the last page of this Newsletter)

THIS YEAR'S CHRISTMAS PARTY

The date for this year's Christmas Party has been brought forward this year to Monday, December 10th to minimise clashing with the many other Christmas activities which occur nearer to Christmas itself. As last year, there will be no charge to attend despite a larger food budget being allocated this year with free tea/coffee on the night. There will be a single Raffle with prizes donated by the Club including the RSGB Year Book, with every member being given a free strip of Raffle tickets with optional extra strips costing £1 each. To enhance the Raffle, the Club would be most grateful if members could donate a festive prize. There will be the usual light hearted Quiz thanks to Dave (G0PGK) with a prize to the lucky winner, and it is hoped to have festive music as the background to what (I'm sure will be a most enjoyable evening. So make a note of the date in your diary.

MY FIRST SHIP (Part 12) - by Brian (M0BRB)

Alongside of Lay By Jetty , awaiting return of the 5th Engineer. The Captain told the Chief, that he would wait for eight hours only.

After about five hours , we heard that the shipping agent had , with the police, located him, sleeping it off, on a Park Bench , and put him on a train from Colon to Panama City. The Chief called a meeting with the watch keepers, explaining that we should move the rota for our young engineers around , giving better cover in the 2nd Engineers watch , so he needed to take Danny the 6th from my watch and put him on the 4/8 with the 2nd Engineer. Then the 5th Engineer to go on day work.

My thoughts on that was giving the 5th Engineer all night in bed was not much of a punishment, but as the Chief pointed out, each watch keeping engineer though the day time watch could see that the 5th Engineer kept very busy. So at last, the ship was on her way to Japan, the first stop. Pearl Harbour Honolulu in the Hawaiian Islands to refuel . Our Navigating Officer, said about three to four weeks depending on the weather .



The Pacific Ocean can get very nasty sometimes, it can be very smooth on the surface and still have a very heavy and deep swell, so deep that another ship about a mile away could be lost between the swell, any strong wind with these conditions can make life on board very unpleasant. In my watch one morning, the 3rd Officer on the Bridge looking at the RPM Repeater, noticed that the revs were back by about 5 RPM, called down to me to tell me about it, my reply, "you point the sharp end , where you want to go, let me worry about the traction".

Then I knew why the old Chief wanted the repeater, disconnected. On another morning watch, one of the Boiler Gauge Glass blew, so I told the day working 5th Engineer to renew all of them ,(two to each Boiler) the time about 10.00 on a Saturday morning, now I saw my chance to get my revenge on his missing the ship in the canal, because on Saturdays the day workers finished the work at Noon, until Monday morning, so when I collected the new gauge glasses from the store, before I gave them to him, I let each glass touch a steel Handrail, knowing full well , that as he put the steam and water through each new glass, it would blow again. So when I told the 3rd Engineer when he relieved at Noon, he promised to keep the 5th working until

he completed the job, which took him until 1500. (Revenge is sweet).

With Danny on watch with the 2nd Engineer, taking over the watch at 0800/2000 was working out much better, the routine jobs were being done and Danny kept me informed of any thing that he thought that I might have to deal with fairly quickly. So onwards to the East , some times a flat calm and some time a heavy swell, with nothing to see but water, and very hot on deck and down below. The 5th Engineer working on deck maintaining Winch and steam Valves began to get very brown which gave him some thing to moan about, he told me one day that he had seen a big Shark swim down the side of the ship my reply was that "the two legged sharks on board were the ones to watch for". Not far out from the three and a bit weeks the Navigating Officer said the Island of Oahu loomed up over the ships bow, engine put on stand by at about 1100 hours. First movement to pick up the Pilot at around 1110 to slow ahead and then to stop engines, which I preformed, I thought by this time the 2nd Engineer should have come down below and by the time the telegraph went to slow ahead again no sign of him, the Donkey Man in the engine room looking worried and shaking his head and muttering "no good" so I sent him into the Stokehold to help my Firemen and put my Greaser on the telegraph.

At last, after about 20 minute at slow ahead, the Chief came down and ask me where the 2nd Engineer was, then took over control of the main engine allowing me to get around to adjust the other units under the slow ahead conditions and sending for the 5th Engineer hiding away on deck, somewhere, to come down below, as soon as possible. I told him to stand by the telegraph and to check the movement book to make sure my Arab had got the times right. The Chief let me take the control of main engine again and sat down on the chair, it was nice to think that he could trust me and not make an expensive mistake.

The 3rd Engineer came down at mid day to take over the watch and I went to my lunch, on deck I saw that we were going through the harbour entrance, to the right was Pearl Harbour and to the right was the commercial docks.

On arrival at the Oil Fuel Jetty moored behind a President Line Liner a regular running ship to Honolulu and on the Quayside Ten Hula Hula Dancers in grass skirts and not a lot more on which were there to welcome the ship, and they did come along to welcome us, as well, which cheered up our crew quite a bit.

The refuel connection on the portside of the main deck, allowed me to watch all the dancing while taking off the Blank Flange and connecting the Fuel Hose ready to start filling our tanks. I thought at first , that we were not going to get much time in Port , but then the Chief told us, that because the Ch/Steward needed to store up with Dom/Stores and Fruit , the ship would sail the next day, which would give the crew a run ashore at the end of the working day , also giving the watch keepers a rest.

So after Tea , I went ashore with the 3rd Engineer and 3rd Officer and the Radio Officer, the RO was a nice quiet lad and the 3rd Officer my running mate ,when at sea he keeping the Bridge watch. So we hit the Bars, with not much money between us, just loose change, a waitress in

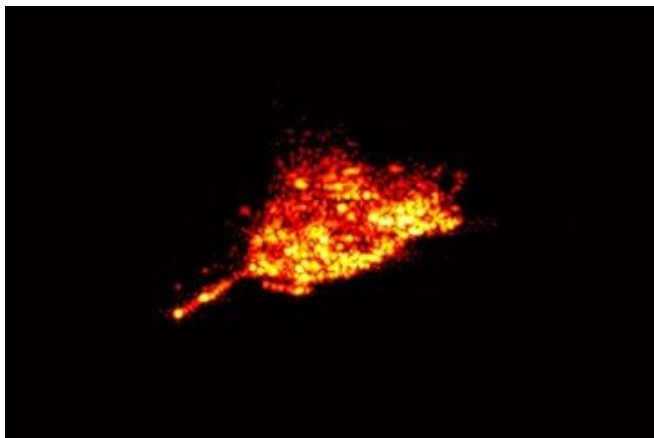
one of the Bars showed us up by telling all the rest of the bar that we were broke Limeys when she saw that we were adding all our spare change together to buy the next round of drinks. This up set me a little , but not so much as when I noticed the Hawaiian Flag was our own Union Jack with the Stars and Strips in one corner, I think I was ready to start the 3rd world war, but my shipmate the 3rd Engineer calmed me down , so we kept out of trouble with the Police and Navy Shore Patrol.

We sailed the next morning at 1030, I saw that there was much activity by small private aircraft flying around the Island with holiday visitors and looking for Whale Pods. On our starboard side, Hickham US Air Base very busy with Military Planes, and of course plenty of shipping in and out the port. Soon out to sea , Japan here we come. Steering a NE course working up to full speed of Ten and a half knots (hang on to your hats Hi!) the old navigating man told me about 4/5 weeks to Japan. wind and weather permitting.

SPACE DEBRIS

Many thanks to Dave (M0JAP) for the following article is from a review of a keynote speech by Prof Ender on radar near-space surveillance at the recent Europ. Microwave Week, Amsterdam. It's the numbers that I found interesting. BWA12K

Of course some of us have an interest in the powerful French phased array, radar space - surveillance unit for meteor back-scatter at the amateur level (and that's why I've been recently seeking a fast-pulsed RF PA in the HF region, as this would remove the restriction on viewing direction i.e. use TX/RX any direction, HF, rather than RX restricted direction, VHF



Radar image of the German ROSAT satellite a day before it re-entered earth's atmosphere uncontrolled. Taken by Tracking and Imaging Radar (TIRA) of the Fraunhofer Institute.

Near space collisions

There are about 606,000 objects larger than 1 cm in diameter in near-earth space, 20,500 of these are larger than 10 cm. These small objects are capable of destroying a satellite. And unfortunately the density of space debris is growing rapidly as a result of human action.

In 2007 a Chinese missile destroyed a Chinese satellite. In 2008 the US too destroyed one of its own with a missile launched from a warship. And in 2009 a Russian and an American satellite accidentally collided. At each of these incidents the density of debris increased by a factor two. 'In ten or twenty years this part of space may not be usable anymore because of a chain reaction leading to the exponential growth of debris', Ender said.

There are also threats from space. Space objects re-entering earth's atmosphere uncontrolled can pose a risk if they weigh more than a ton. In November 2011, 20 tons of mass came down as the Russian Phobos Grunt satellite re-entered.

Space surveillance systems

To increase the knowledge about all the possible threats and have a better chance at averting them, space surveillance systems are put in place and continuously improved. The United States has a Space Surveillance Network consisting of a network of radar systems, optical telescopes and other sensors spanning the globe. It has about 16,000 objects in its public catalogue and a few thousand in a classified log. Europe has a space situational awareness system too with 2500 objects catalogued. The former Soviet Union also had a space surveillance system but Ender said he had no details on how it operated in the present day.

ITEMS FOR SALE

There is a Ham station in Bude giving away a commercial two mtr Beam (Heavy Duty) - for more details speak to Ken (G4NUJ)

Dave (G4NLH) giving away 5ele 2mtr beam very good condition free, must be collected from Stratton. Contact tel : 01288 355791.

Dereck Hilleard (G4CQM) - tel: 01288 381289 is selling 2in ally scaffold pole @ £1 per foot.

NEW 6m REPEATER

I would like to inform you all that Dereck (m0ydw) and myself - Roger (2e0rph) with the help of Ray (g8awb) have now completed a 6metre repeater which is now working well. However we would like reports on signal and distance so we can work out the coverage - so if you are out and about please try to open the repeater and let me know how you get on.

The frequencies are :- **RX 50.73 and TX 51.23**
Enjoy the use of our Repeater. 73's Roger & Dereck.

Please be reminded about the need to revalidate your licence if you received yours between the dates of November 2006 to August 2007. Brian MØBRB

If any member has an article that they feel would be of interest to Club members, please send it in to me and it will make your Club Newsletter all the more interesting.
Enjoy the read Terry (G4CHD)

**PRIDE GOVERNNESS LUST ANGER
GLUTTONY ENVY SLUT**

Answers to the anagrams :-