STARLITE

The Newsletter for Members and Friends of

G6OI

1938

Stourbridge and District Amateur Radio Society

G6SRS

1938

incorporating

Old Swinford Hospital School Radio Club

G4CVK

1969

ISSUE 08/12

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STARLITE

MEETINGS

Visitors always welcome

The Society holds its full meetings on the

1st and 3rd Monday of each month at

Old Swinford Hospital School
Heath Lane
Stourbridge
(8.00pm – 10.00pm)

Additionally the shack is open during the same times on the intermediate Mondays

Telephone Enquiries to :-
Hon Secretary
John Clarke M1EJG
(01562) 700513

Or by e-mail to :-

honsec@g6oi.org.uk

All correspondence/enquiries should be addressed to the Hon. Secretary :-
STARS
c/o The Mill House
21 Mill Lane
Blakedown
Kidderminster
DY10 3ND

STARS Web Site URL :-

www.g6oi.org.uk

EDITORIAL

Dear Readers,

This month's talk was given by Stars club member, Tony Whitehead on restoring his his 'Tilly Van. Tony also brought along documents and photographs relating to many other military vehicles which were circulated amongst club members. Tony gave his talk without reference to any notes and the evening was very well received by all club members.

Thanks to Adrian Simms for his article on the club visit to Bletchley Park, National Radio Museum and the many other museums at the Bletchley site. Please note articles like the one Adrian has submitted are ideal as they help to promote the image of the club and give outsiders an idea of what interests club members have. So my message is; short articles and picture make a welcome contribution to Starlite.

As always I would be interested to receive contributions and feedback on any of the articles. I aim to make Starlite available for the first day of each month, so please can you submit any articles in time for this deadline.

Adrian Bryan (G0NLA) Editor.

NOTICES

As you are aware we are entering the SSB Field day which is in the first weekend of September, (1st and 2nd). Please keep this weekend free if possible, approx time will be 10am on the Saturday until 3/4pm on the Sunday.

We have booked a date for the next Foundation course, which will start Monday 10th September, if you know of anyone interested please pass their details on to the Hon Sec.

As always Adrian (Newsletter) is interested in your articles for Starlite.

VISIT TO BLETCHLEY PARK

Visit to Bletchley Park Saturday 7th July 2012

It's been a long time coming but my XYL and daughter booked to see a show in Birmingham on the 7th July 2012, so the opportunity arose to visit Bletchley Park on the same day, a topic often discussed at the Club and at home. I invited my father, family friends and also offered the date as a club visit to Bletchley Park.

Shortly before the visit, five of us confirmed to attend, my brother in law Andrew, my cousin's husband Mark, my father Alan, Andy Hill M6 APJ and myself, M3HBA.

We all arrived about 1000 hours, parked up, paid £12 per person and £3 for parking. The entrance fee also includes a further 6 visits within the next 12 months at no cost and then went straight to the Manor House, where a 1.5 hour tour was shortly to begin.

We had a quick walk around the building and then sat for the introduction to the tour. Our guide for the tour, whose name escapes me, firstly gave a 20 minute overview of the history of the site, the building we were in and what the rest of the tour would entail. Fortunately outside there were light showers which didn't affect the tour. At this point it's difficult to explain all the tour as there was so much to take in, hence the further free visits, however it did encompass The Huts, Post Office, Grounds, Old Cars, Stables, Polish Monument, Tower Clock, introduction to Colossus, history of the enigma machine and computer museum – a lot! The tour group was of approximately 25 people, but because there was so much to take in questions were left to the end, of which our guide was bombarded with plenty, and he did answer them all! This took us to about 12:30 whereupon we all had our packed lunches, my Mum packed mine!!

The afternoon was given to the ‘team’ of 5 splitting up and touring the site. I visited the Oxfordshire Regiment Museum, which also contained a large group of different models of Enigma machines, and the famous Turin slate monument. There I met Andy and we decided to visit the National Radio Museum, which very fortunately had a fantastic amateur radio set up. We couldn’t operate the radio, but again we were given an excellent tour of the Museum.

Above Adrian Simms (M3HBA) left and Andrew Hill (M6APJ) right at the National Radio Museum

Following this I bought some souvenirs and then met at Hut 4 for a brew, and to catch my breath. Finally we all visited the Cinema Museum and the Churchill Museum – I’m shattered!!

By this point our cars were probably the last few remaining, this being about 16:45 hours as the museum closes at 1700 hours. We said our good byes and headed home.

The next day I called my Dad just to catch up, and the feedback from everyone was that it was a great day, value for money and plenty to take in.

I would definitely recommend the visit to those who are interested in this type of Museum.

For those wishing to use a Satellite Navigation System, the Post Code is MK36EB, or put in Sherwood Drive, Bletchley

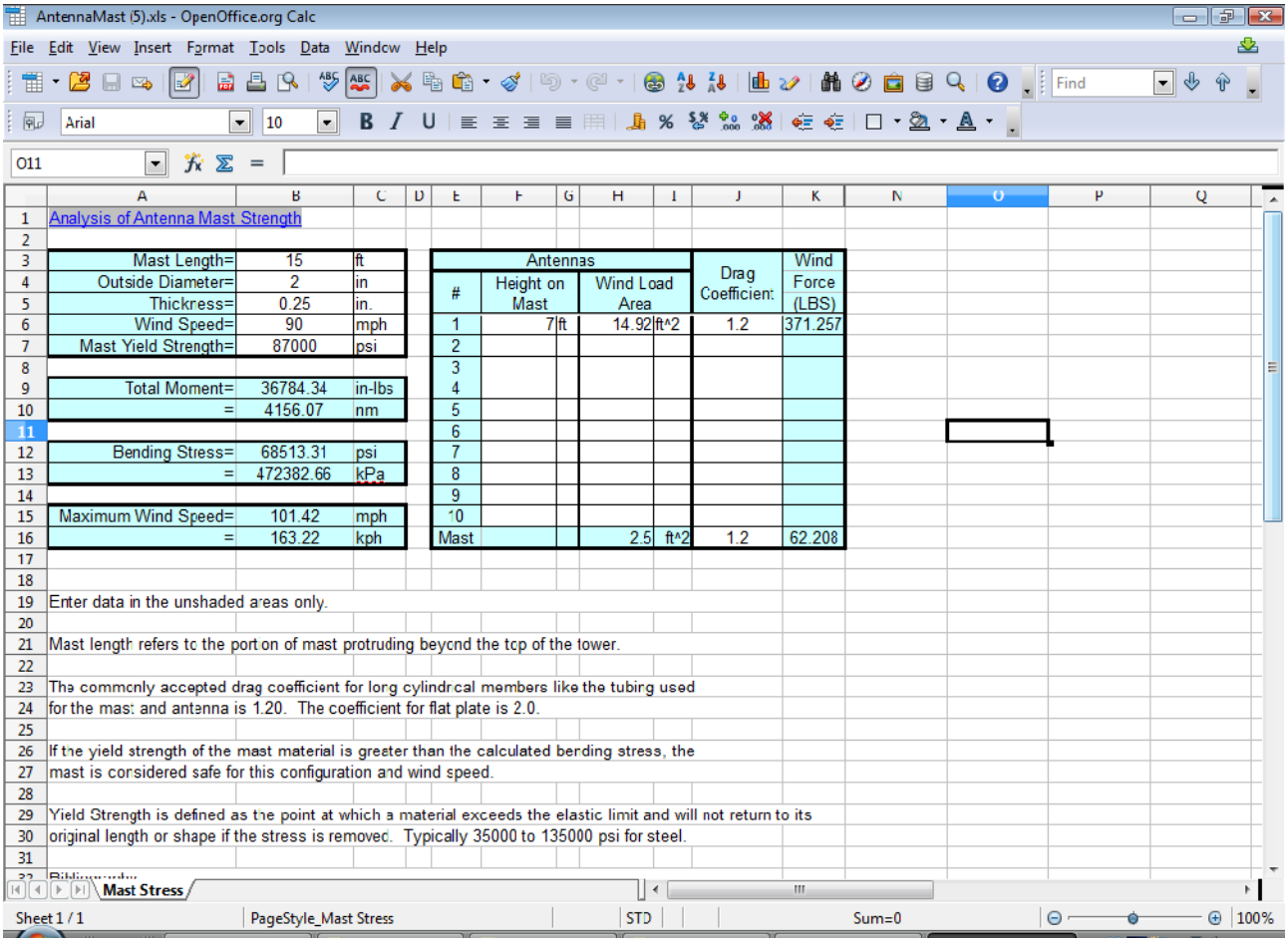
Adrian Simms (M3HBA)

WILL MY AERIAL SURVIVE THE NEXT GALE (PART 2)

Foreword

Although it is not apparent, this article is on its third rewrite. An initial draft went through a sample manual calculation of the forces caused by the wind on an aerial. Before too long it became apparent that the explanation and maths although instructive, may not be entertaining for all. To be able to answer "will my aerial survive the next gale" would, from the information given, require a lot of effort and probably end in failure or disappointment for the reader.

This draft of the article will make use of a spreadsheet which should help you to arrive at a swifter conclusion that is tailored to your own particular aerial set up. The article relies on an Excel spreadsheet which you should download from - http://thebont.com/spreadsheets/AntennaMast.xls and open it with either Open Office Calc or a version of Microsoft Excel.



I did have some problems with the latest version of Microsoft Excel and had to open the spreadsheet as read only and change this setting once the spreadsheet had opened. If you are like me you will probably load the spreadsheet into Excel and then come back and read the instructions when you get stuck. If you find you have "messed-up" the original spreadsheet, just delete the original and download a fresh version.

Notes on using the spreadsheet

Read the notes supplied in rows 19 onwards of the spreadsheet. The supplied spreadsheet data assumes a tubular mast with a height of 15ft long and 2 inches diameter with a .25 inch wall thickness. Start off by deleting the data about #1 in the antennas box in cells F6, G6, H6, I6 and J6. This is done by clicking in a spreadsheet cell and pressing the delete key. As you delete cells, notice the values change in the turquoise cells. To the right of the cell containing the word Mast in row 16 of the spreadsheet notice the values 2.5, ft^2 . These values indicate that the Wind Load Area due to the mast itself is 2.5 square feet. Calculated as 15 feet x 2 inches wide = $\frac{(15\,x\,12\times 2)}{(12\times 12)}$ *square feet* or 2.5 sq. ft.

If you want to work in metric quantities then you should changes the values in cells B3,B4,B5,B6 and B7 and the SI units in cells C3,C4,C5,C6 and C7. This will give results in metric units such as Newtons and Mega Pascals. If you want to stay with imperial units such as feet and pounds per square inch then that is fine also, as results for Total Moment and Bending Stress are given in both Metric and Imperial values.

If you double click cell A1 this will give you a tutorial on how to do the spreadsheet calculations by hand.

Wind Speed (cell B6)

What is wind speed? Often wind speeds quoted are averages. Wind occurs in gusts. Wind speeds increase the higher one is above sea level. Tall buildings and nearby hills have an effect on the wind. Are we going to allow for once in a century figures? Wikipedia gives two figures for maximum wind speeds in the UK – the official figure is 142 mph at Fraserburgh during 1989 and the unofficial figure is 177 mph in the Shetlands during 1962. I found both these figures surprising and since the record was achieved within living memory, it makes one think that they may rise in the not too distant future. But let's not get carried away. Will your house be left standing after a 142 mph wind? The following information may however make us revise our estimates downwards, such that 85 mph could be considered as our maximum wind speed. You may recall the data from the previous article :-

MPH of Wind	Expected Effect
47 - 54	Strong gale slight structural damage occurs; chimney pots and slates removed
55 - 63	Whole gale trees uprooted; considerable structural damage occurs
64 - 72	Storm very rarely experienced; accompanied by widespread damage

Calculate Wind Pressure at 85 mph

The formula $P = 0.00256 \times V^2$ can be used to calculate wind pressure = 0.00256 x 85 x 85

Where P is the wind pressure in pounds per square foot and
V is the wind speed in mph (85 mph in our case)

Which gives us the value of the wind pressure P = 18.496 lbs/sq ft

Incorporate Drag Coefficient (column J)

You will need to consider the drag coefficient for various shapes. Different shapes will offer

different wind resistances. The drag coefficient is used as a multiplier that represents the difference in resulting wind resistance and hence wind load of our selected item. Think of it as a measure how aerodynamic an item is. As rows 23 and 24 on our spread sheet indicate you will mainly use 1.2 for a rounded surface and 2.0 for a flat surface.

Calculate the Wind Load area due to a Yagi (for example)

The Yagi's boom is 87 inches long and is made of 0.75 inch aluminium box section and the 19 Yagi elements are created from 12" average length aluminium rods of diameter 0.25 inches. Assume it is used vertically polarised, which presents the greatest wind resistance. (As an aside, I realise that the Yagi is probably a 70 cms amateur television aerial and would most likely be used horizontally polarised, but go along with me anyway.)

Calculate surface areas of the Yagi in square feet

boom - 0.75" x 87" = 62.5 sq. inches or $\frac{62.5}{144}$ square feet = 0.453 square feet

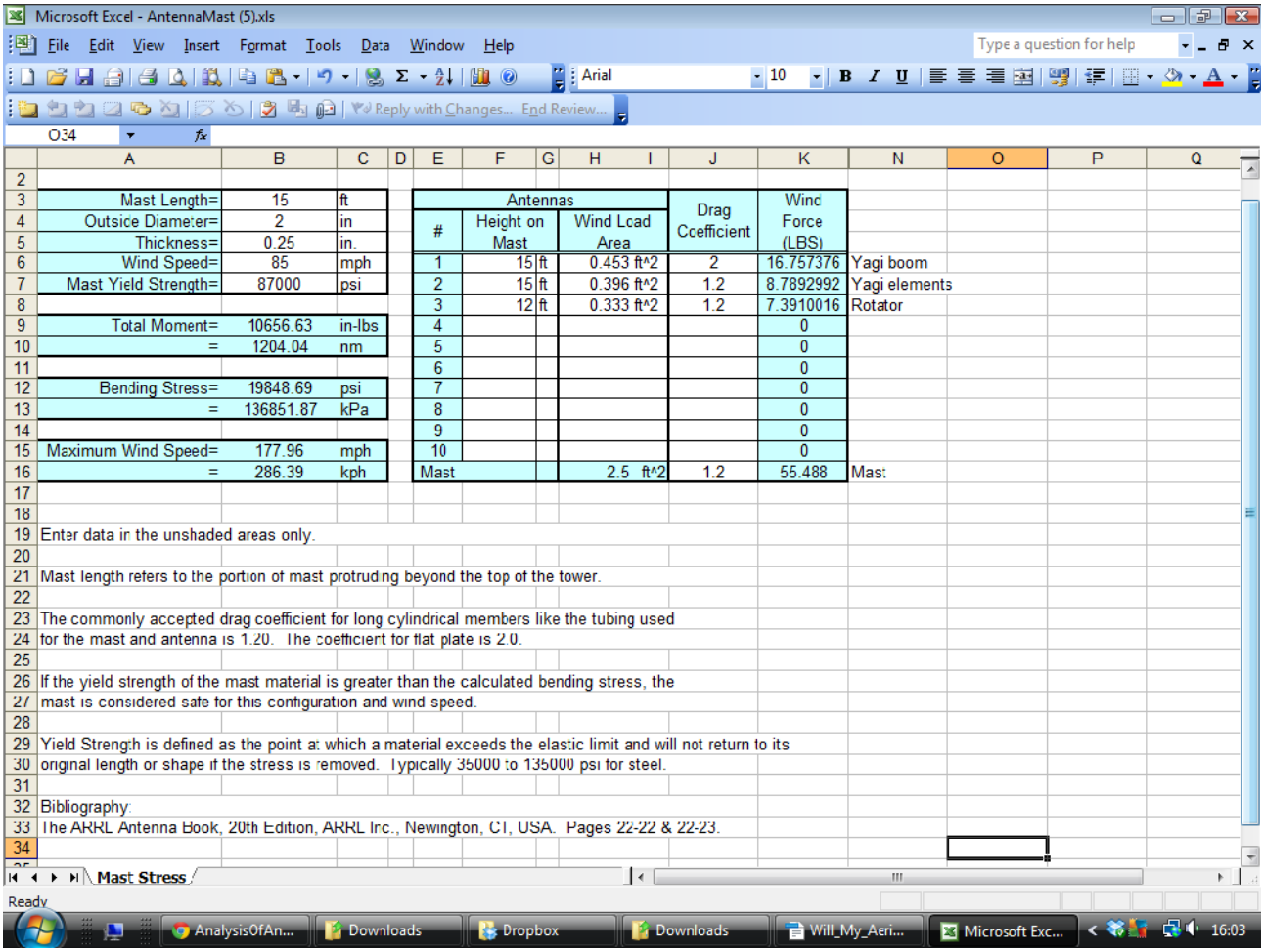
elements - 19 x 0.25" x 12" (19 elements of 0.25 diameter rod at 12" avg. length each)

elements - 57 sq inches or $\frac{57}{144}$ *square feet* = 0.396 square feet

Assume that our Yagi has a height on the mast of 15 feet, we can add two rows on our spreadsheet and use a drag coefficient of 2.0 for the Yagi's boom and a drag coefficient of 1.2 for the elements of the Yagi.

Calculate the Wind Load due to Rotator

As a rough estimate, assume that the rotator wind load is equivalent to a 6" diameter cylinder which is 8" long. This gives an area of 6 x 8 = 48 square inches = 0.333 square feet



the above value for the rotator can now be added to the spreadsheet with the above result.

So what does the spreadsheet tell about our sample aerial set up?

As rows 26 and 27 state, the Bending Stress must be less than the Maximum Yield Strength and the spreadsheet computed values are

Bending stress = 19,648 psi and Maximum yield strength is 87,000 psi

Also of interest is the Maximum wind speed of 177.96 mph. At this wind speed the mast would survive, but would have sustained permanent damage. I have seen suggestions that one should use one third of the Maximum yield strength as working figure. Note that the figure of Maximum yield strength is taken as the average of 35,000 to 135,000 which is stated as the typical yield strength psi for steel in the spreadsheet on row 30 .

In reality you should find the yield strength for the mast you are using from industry standard tables or you may be able to get a figure from the manufacturer of your mast.

Acknowledgement

I hope you have enjoyed the concluding part of this article on aerial survival. As you can see from

the original article we are indebted to Mike Kowalsky AC8Y from the USA for his spreadsheet and explanation.

Footnote

If you do use the spreadsheet to evaluate a new or existing aerial set up then you would be well advised to factor in some generous allowances. Some research is needed to determine yield stresses for common aerial masts such as aluminium and steel scaffold poles. The following values could be used as a starting point for various materials :-

Mild Steel EN3/EN4	50,000 p.s.i.
Stainless Steel (18/8)	44,800 p.s.i.
Aluminium	26,000 p.s.i.

You should note that scaffold poles are designed to bend rather break.

It would be interesting to see a copy of the ARRL Antenna Book 20th Edition pages 22-22, 22-23 which is mentioned in the spreadsheet.

As usual any errors in this article are mine.

Adrian Bryan (G0NLA)

FROM OUR ROVING REPORTER

Starlite 2012 July

My apologies for being unable to attend the three Stars July meetings due to other commitments. On July 9, I was in Weston Super Mare. Our son Andrew decided to take Glenys and myself to Weston for the day. It was my first return visit to Weston since taking my Morse test at the nearby Burnham-on-sea coast Guard Station in the late 1970s.

On July 16 [Main Meeting & Talk] I was going up Snowdon with a colleague and fellow George Formby Society member and his fiancée. Having pre-booked the trip, the cost was reduced to half the regular price of £24 each. The train was the 1pm and took 90 mins to get to the summit, before the train returned because of the bad weather. It was the final train of the day and the shutters where pulled down on the café.

I took my Kenwood TH-26e which works on receive but not on transmit. Sadly I never heard a single radio signal. I will have to start looking for another 2m hand held transceiver when I can scrape enough money together. I have seen some transceivers on E-Bay for sale from a supplier in Coventry for £35. Any reports on them would be of interest. I took one of my Wooden Ukuleles with me to play and also feature on the GFS Branch website [see photo taken in the Café and the train].

On July 23, I was in Shrewsbury for the first meeting since July 2010 of the Shropshire Theatre Organ trust. I travelled there by train from Wolverhampton. There were a few radio memories along the route. It was near to Codsall rail station that Bill Moorwood G3CAQ lived with his shack and aerial farm. Bill had plenty of space and his aerials were on one side of the main railway line to Shrewsbury and his QTH was on the other side of the railway line. To get from one to the other was a short walk under the railway bridge [with Station On Top] Bill also kept a few sheep nearby.

Moving on to Albrighton, was were Joe Jones G3GBQ used to live, who I knew very well. Joe was well known on Top Band and was a regular visitor to Highgate Common on Sunday evenings in the 1950s, when it used to be a gathering place for Radio Amateurs in those days.
Next stop was Cosford which brought back memories of The Telford Radio Rally and the town of

Telford. It was the home of the first and largest Telford Radio Rally which was held in the Shopping Malls. It ran for four years and entry was free until trading laws were changed and shops were

allowed to open Sundays. The Rally was then moved to the new Leisure centre where it stayed for about four years. The centre owners then decided to increase the cost for the hire of the site and the Telford Amateur Radio Society decided it had no other choice than to move . The final part of my journey was Shrewsbury and another radio memory. Telford Amateur Radio Society held one rally at the show ground site and I was able to have a stand to publicise The Shropshire Theatre Organ Trust.

The Buttermarket was not too far away, so there were a few memories en route and after our meeting the trust committee members were allowed to take a look at the progress of work taking place at The Buttermarket [see photos above of re-furbished exterior I was not allowed to take photos inside] A September opening is proposed for that part of the building where the organ has been for 24 years of monthly organ concerts. Before any organ concerts can be planned and as soon as there is a chance, it will have to be tested and checked. It is a step in the right direction to being able to keep it in there. My interest in Organs Wurlitzers, Comptons Christies and electronics started after listening to Stan's G8SR excellent recordings of organs in the 1950s. I hope that some of STARS members will give support to our organ concerts when they resume. I was hoping to get back in time to attend the Stars meeting. It was 6.30 pm when I finally arrived home and after having tea, sat down to read the paper, I dropped of to sleep and awoke to find that the time was at 8.30 pm [I am doing too much].

Finally on July 4, members of the 'Save Dudley Hippodrome' were invited, as requested, to take a look inside the building. I was very much impressed with the condition it is in, apart from all the bingo equipment, which if the trust gets the building, will have to be cleared (Radio Rally?) It is sound and dry inside. The Hippodrome comprises 62 rooms including the auditorium and could have many uses –recording studios, practise rooms for up and coming artistes. It has got to re-open as a theatre again and since all the publicity, the visit has attracted a lot of interest through out the country. There was an interview on the Bridge Radio on Sunday 15th July along with Geoff Fitzpatrick, myself and Dr. Paul Collins who is a presenter & founder of The Bridge Radio and who is involved with the Hippodrome [see photo] I started all this going last September collecting a few signatures while at an exhibition at The Station Hotel. I always remember Bernard Whitehouse G6WF saying at the end of a most interesting talk on mobile aerials at the TOC- H club Stourbridge to STARS-I should have stuck to washing up.

Best 73s Your Roving Reporter Malcolm Palmer G8BOP

STARLITE

YOUR COMMITTEE

Hon. President	JAMES	G7HEZ	
Vice President	ADRIAN SIMMS	M3HBA	
Hon. Secretary	JOHN	M1EJG	(01562) 700513
Hon. Treasurer	JOHN	G8UAE	
Committee Members	NICK	G6DQN	
	MARK	G7EDZ	
	MALCOLM	G8BOP	
	ANDREW	M6APJ	
	ADRIAN BRYAN	G0NLA	

CALENDAR OF EVENTS

It should be noted that the Shack will be open every Monday evening unless shown otherwise in the Calendar

August	Mon 6th	Open Shack Night - On air or natter
	Mon 13th	Contest and rig training by Jim (shack)
	Mon 20th	SSB Field Day equipment check
	Mon 27th	Bank Holiday
September	Sat 1st	SSB Field Day contest
	Sun 2nd	same location as last year
	Mon 3rd	Open Shack Night - On air or natter
	Mon 10th	Open Shack Night - On air or natter
	Mon 17th	Main Meeting - John to arrange
	Mon 24th	Open Shack Night - On air or natter
October	Mon 1st	Open Shack Night - On air or natter
	Mon 8th	Open Shack Night - On air or natter
	Mon 15th	WHICH Computer Talk
	Mon 22nd	Open Shack Night - On air or natter
	Mon 29th	Open Shack Night - On air or natter
November	Mon 5th	SURPLUS SALE
	Mon 12th	Open Shack Night - On air or natter
	Mon 19th	Talk on the RNLI
	Mon 26th	Open Shack Night - On air or natter
December	Mon 3rd	Open Shack Night - On air or natter
	Mon 10th	Christmas Meal - Probably Carvery
	Mon 17th	Open Shack Night - On air or natter
	Mon 24th	Open Shack Night - On air or natter