STARLITE

The Newsletter for Members and Friends of

G6OI

1938

Stourbridge and District Amateur Radio Society

incorporating

G6SRS

1938

Old Swinford Hospital School Radio Club

G4CVK

1969

ISSUE 07/12

Table of Contents

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,

We were fortunate with the weather for the STARS barbecue this year. Thanks go to Nick and Wayne for all their hard work and loan of equipment and for helping to make the evening a success. Please take a look at he photographs of the event courtesy of Malcolm in the Roving Reporter Section.

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

Please can all members take a look at the SSB Field Day Rules which can be found at :-
http://www.rsgbcc.org/hf/information/hfgenrules.shtml

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WILL MY AERIAL SURVIVE THE NEXT GALE?

Disclaimer

The following article is intended to entertain rather than to instruct. I am not a structural engineer and this article should not be taken as an authoritative reference.

Introduction

There is a view in some amateur radio circles that if one's aerial didn't blow down last winter, then it wasn't big enough. How many of you have lain in bed listening to the wind blowing and wondered if the aerial will be there in the morning? You lay there listening to the clanking noise as the coax slaps against the mast pole and made a mental note to take a look at your aerial set-up in the daylight. The daylight comes and the aerial is OK and your mental note becomes a distant memory until next time!

Perhaps you may have made a note of wind direction and thought I must park the yagi so that wind resistance will be minimised on the aerial. The approach most of us take is to use whatever comes to hand and hope that it will be OK. You may have got your hands on a pole that is just the thing to get your aerial up those precious few extra metres. Let's take a look at a simple set-up with a "T" and "K" bracket, mast pole, rotator,Yagi aerial and Rawl bolts. Some mathematics will be involved, but don't let this put you off as it will be reasonably simple and in a follow-on article.

The Shipping Forecast

Have you listened to the shipping forecast and heard – "The forecast for the next twenty four hours Viking, North Utsire, Forties, westerly five to seven occasionally gale eight, decreasing to four for a time … … … " and so on. Just to put things into context on what the Beaufort Scale numbers mean in terms we can grasp a little more readily see below. Each line represents the Beaufort scale from one to twelve. From the figures below, you should be able to decide what wind speed in miles per hour you want your aerial to survive or to serve as a design criteria.

Beaufort Wind Scale

Windspeed in MPH	Description - Visible Condition
0	Calm, smoke rises vertically
1 - 4	Light air direction of wind shown by smoke but not by wind vanes
4 - 7	Light breeze wind felt on face; leaves rustle; ordinary wind vane moved by wind
8 - 12	Gentle breeze leaves and small twigs in constant motion; wind extends light flag
13 - 18	Moderate breeze raises dust and loose paper; small branches are moved
19 - 24	Fresh breeze small trees in leaf begin to sway; crested wavelets form on inland water
25 - 31	Strong breeze, large branches in motion; telephone wires whistle; umbrellas used with difficulty
32 - 38	Moderate gale whole trees in motion; inconvenience in walking against wind
39 - 46	Fresh, gale breaks twigs off trees; generally impedes progress
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
73+	Hurricane devastation occurs

Note that throughout this article I have used miles per hour, pounds, feet, inches and tons. An unexpected advantage to using Imperial units is that it gives us access to many useful USA web sites which still stubbornly cling to non-metric units. In particular I have found The Engineer's Edge Web site a particularly good reference site when producing this article.

The Neighbours and Good Practice

If your TV aerial blows down or suffers damage in a high wind, your neighbours will view this as bad luck. They will see this damage as a problem for a TV aerial company to fix. However, if your ham radio aerial blows down or gets damaged, your neighbours will see this as your problem and a problem for you to fix. It may not seem like it but your credibility could stand or fall on how well your aerial performed in a high wind. If you live next door to one of the Health and Safety Taliban, visible aerial failure is best avoided altogether.

Before starting any calculations it is worth noting what is "Good Practice" with regard to diagram 1 below. What can fail with our aerial installation? Well quite a lot unfortunately; let's look at some common sense practical suggestions.

Assuming that the Rawl bolts that are used to mount the "T" and "K" brackets stay in the wall and you didn't drill into the mortar (you didn't did you?), the thread on the Rawl bolt may not be sufficient and the threads may give way. This will exert more pressure on the remaining Rawl bolts which hold the "T" or "K" brackets to the wall which will experience greater loads, and the mast and aerial installation may begin to deteriorate rapidly. My personal preference is for a bolt fitting

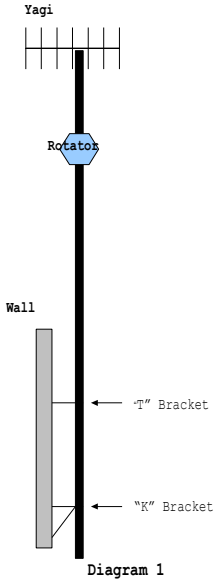

Diagram 1


Illustration 1: Rawl Bolts

for a Rawl bolt as opposed to a nut, which exposes less of the thread to the elements. Another problem with using a Rawl like the one nearest to the caption in Illustration 1 above is that once the nut is undone the threaded bolt can easily disappear into the cavity, never to be seen again. The hole in the brickwork to hold the Rawl bolt should be as snug as possible. If in doubt experiment with a spare brick at ground level rather than up the ladder.

So what can one do to reduce the chances of having the aerial damaged in high winds? The obvious

steps are to make sure that all bolts are tight, but not over tightened. “U” bolts slacken with the constant effect of the wind. Use galvanised washers and look out for corrosion (more on this later). Another all too common situation is that the “T” and “K” brackets and Rawl bolts are suitable, but the wind load is such that the aerial mast bends. If a selection is available and given identical dimensions, then steel will out-perform aluminium. Also a larger diameter mast with the same wall thickness will be less likely to bend than a smaller diameter mast. All things being equal, a mast with a thicker wall is less susceptible to permanent bending. However a twenty foot length of steel scaffold pole weighs around 50 pounds whereas a similar size alloy scaffold pole weighs only 22 pounds. The lower weight of alloy makes it a more popular choice although from a strength perspective it is less desirable than steel. The distance between the “T” and “K” bracket is also important. If the “T” bracket is mounted too close to the K” bracket, this will give the highest possible elevation for the mast and aerial, but the installation may fail in only moderate winds. The type and size of Rawl bolt is also an important decision as the thread on the bolt holding your “T” or “K” bracket may be the key component keeping your aerial aloft.

In my own aerial installation I have chosen to use one “T” and two “K” brackets. This way I can swap out any component and have less exposure to a single item failing such as a U-bolt, Rawl bolt or a single “T” or “K” bracket. This set up is also handy for swapping out masts as a 20 foot scaffold pole can have one end touching the ground and the other end of the scaffold pole held by the lowest “K” bracket. The downside of course is that I don't get my mast up as high as possible.

The rotator is all too often a common point of failure. With rotators usually, the more you pay and the longer it lasts. You should stay within the operating guidelines given by the manufacturer. The rotator is usually the most costly item to replace in your aerial set up and an Light Duty Yaesu G-450C currently (2012) costs around £345. Further up the range the Yaesu G-1000 DXC Medium-Heavy duty rotator from Radio World is advertised at £499.00 and High Gain rotators command higher prices for equivalent products.

Although often not considered the “U” bolts should be galvanised. Galvanic action takes place between steel and aluminium and also between other metals. This has the effect of accelerating rates of corrosion. A preferable and more durable option is to use galvanised steel fittings where steel and aluminium come into contact. A galvanic action is not present between zinc (galvanising) and aluminium.

There are numerous alloys of steel and types of aluminium alloys which have widely varying properties. If possible you should find out what the intended use and alloy your mast was made from. Later this information may give a better indication how your mast might perform. It will become more noticeable in the next part of this article that guying masts will help your aerial installation to survive higher winds but take care to use five guy ropes and not three or four.

Next month

We will introduce some mathematics. We will look at the effect of the wind blowing against a flat surface and a tubular area and calculate the wind load created by our chosen maximum wind speed. We will look at an example to try and calculate if our example mast will suffer wind damage. We will look at yield point of various materials.

As usual any errors in this article are mine.
Adrian Bryan (G0NLA)

Appendix

THE BEAUFORT WIND SCALE

Nautical Miles per Hour	Description	Force
0 to 1	Calm	0
2 to 3	Light Airs	1
4 to 6	Light Breeze	2
7 to 10	Gentle Breeze	3
11 to 16	Moderate Breeze	4
17 to 21	,,	5
22 to 27	Strong Wind	6
28 to 33	,,	7
34 to 40	Fresh Gale	8
41 to 47	Strong Gale	9
48 to 55	Whole Gale	10
56 to 65	Storm	11
Above 65	Hurricane	12

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FROM OUR ROVING REPORTER

Starlite Report May 2012

We had completely different weather conditions this year for our annual barbecue at the Sheep walks near Kinver, so perhaps changing the month from August was a good idea and gives us lighter evenings. I did not have too much to eat as I had tea beforehand. Wayne was very busy preparing beef burgers and sausages which were excellent. John & Eileen Tracey (former STARS members, Eileen being a past President) arrived bringing more food with them which all helped to make a great evening. Mark G7EDZ kindly gave me a lift. Mark was already set up to operate on 2,4 and 6 metres and made several contacts including one local contact with John G3XEV. I did a bit of operating from the barbecue site. Very many thanks to Mark for the use of equipment and for taking me there (See photos).

I discovered at the barbecue that Bill Bartholomew G8CK had become a silent key so I checked the June 2012 Radcom, which I had not opened and found Bill passed away on 26-4-2012. He attended two or may be more of STARS in the 1960s & maybe 70s having moved into the area following the take over of his company Radio Aids of Watford, of which he was a joint manager director with Ernest Gardenier G6GR. Ernest moved into the area with some of the staff of Contactor Switchgear Ltd., Wolverhanpton. Radio Aids had a name change to Contactor Switchgear Electronics. The intention of the merger was to incorporate solid state electronics into electrical switchgear. In the 1960's Contactor Switchgear Electronics developed a solid state top band transceiver/receiver in two units that sold along with a loaded mobile aerial for £150 which was a lot of money in those days.

The TX/RX won a first award at the RSGB rally in London. Unfortunately Contactor Switchgear Electronics was closed when Contactor Switchgear was taken over in 1969. For more information Google Contactor Switchgear.

The trip to Bletchley Park on 7th July was mentioned at the barbecue. I feel it would be best to wait until 26th August when the Milton Keynes Radio Rally is taking place, when I feel certain a coach could be filled. I know of several who would like to go to both events. Bill G8CK lived not far from another radio colleague of mine John G3LGL. Condolences go to Bill's family from all at STARS. Due to space limitations, I have not included my vintage spot this month. I will find something for next time. Over the week end 23rd and 24th June I was based at the Engine House [on Sunday] Highley on Severn Valley Railway for the 1940s weekend. Among the visitors were ex STARS member Frank Collins G0RXO, who I discovered used to drive trains. I tried to recruit him to become a volunteer to add to the list of Radio Amateurs on SVR. The other visitor was current STARS member Dennis and his XYL, who is a George Formby Fan, accompanied by his grand children. Whilst at Kidderminster with all the PA equipment from Link Communications of Great Barr was Paul Simms G6HPE who operates on 2m on Friday.

I received good news that what I call my adopted Wurlitzer Organ will be allowed to remain in the Buttermarket Shrewsbury. When the £1million refurbishment is complete and Shropshire Theatre Organ Trust have run tests. If everything is still working after two years of not being used, the organ concerts will resume once more. I hope I can count on some of the STARS members to support at least one or more of the concerts. G3XEV along with his XYL attend sometimes and Doug and his XYL Jean from Castle Croft attend from time to time. (see photo Dec 2004)

Finally I was looking up some call signs on QRZ and I came across a list of celebrities who have call signs –just a few Priscilla Presley [Elvis' XYL] NY6OS - Sir Cliff Richard W2JOF-Chris Tarrant G0KRH –Brian Rix G2DQU-the whole of the late King Hussein [JY1] family are licensed. You never know who you make contact with over the air.

Best 73s Your Roving Reporter Malcolm G8BOP

All being well on Wednesday myself and others from the Friends of The Dudley Hippodrome will be going to have a look inside and see what the state is like before (I hope) work will start to change it back to a theatre again instead of it being demolished.

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	

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CALENDAR OF EVENTS

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

July	Mon 2nd	Open Shack Night - On air or natter
	Mon 9th	Committee Meeting (re-arranged date)
	Mon 16th	Talk by Tony Whitehead on his Tilley Van
	Mon 23rd	Contest and rig training by Jim (shack)
	Mon30th	Open Shack Night - On air or natter
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