



# BARSCOM



G3XG

GX3XG

G6BRH

DUNMOW

STEBBING

RAYNE

HALSTEAD

COGGESHALL

NOTLEY

WITHAM

BRAINTREE

SILVER END

## Monthly Communication of the Braintree and District Amateur Radio Society



The well deserved winner after many excellent entries over the last few years was Edwin.

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## Olympic Excursion Zones

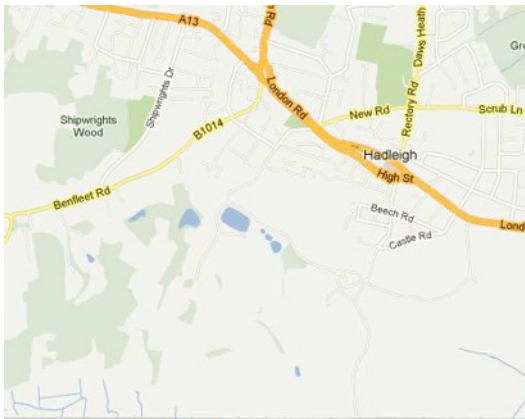
### Trevor M5AKA

Areas in Essex that 431 – 432 MHz, 432 - 433 MHz paired with 436.25 – 437.25 MHz and 438 – 439 MHz need to be protected for use during the Olympic Games are:

An area South and West of Chelmsford (below),



An area between 0.7 mile West and 0.6 mile East and between 0.1 mile and 1.1 mile South of the A13/A129 junction (bottom left).



The restrictions apply from June 28 until September 23 and restrictions also apply to the 2.3 GHz and 3.4 GHz bands.

**Note:** *These boundaries are approximate and you should refer to the Ofcom website for full information.*

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# Construction Competition Entries

Geoff GØBYH

## Brian G3TGB

Two valve "Top Band" transceivers, one crystal controlled and one with a VFO



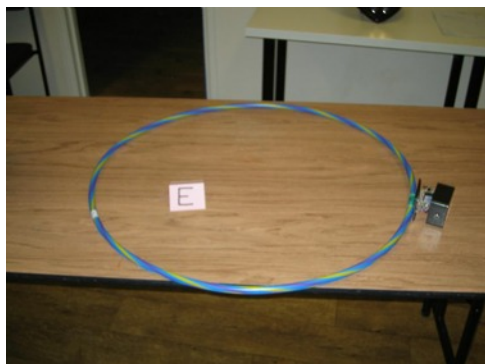
## Colin G3UGG

A brass and steel copy of a Victorian Letter Balance mounted on a wooden plinth



## Mike G8DJO

Receiving loop and amplifier for a Solar flare detection system.



## Edwin GØLPO

Triple power supply 12 & 9 Volt @ 1.5A and a variable 0-20 Volt also built into the enclosure is a Tone Oscillator for CW practise.

*(Photos Front page)*

## Club Meetings and Nets

*Club Net - 08.00pm local time  
2Mtrs (145.375Mhz)  
70cms (433.575Mhz)*

### May

- 7 Equipment Testing - Part II (PAT)
- 14 Club Net - 2Mtrs
- 21 AGM
- 28 Club Net - 70cms

### June

- 4 Rig Clinic - Fault Finding
- 11 Club Net - 2Mtrs
- 18 TBA
- 25 Club Net - 70cms

### July

- 2 Club BBQ
- 16 DF Hunt

### August

- 6 TBA
- 13 Club Net - 2Mtrs
- 20 TBA
- 27 Club Net - 70cms

## Something to Say?

It don't matta if u kan spel or not.  
If u hav made, or riten somfink y  
not tel us and we can put it in  
Barscom. Fotos, sirkits and  
sketches welcum too.  
*(Translation available)*

## Next Month

Latest News from the RSGB

For Sale and Wanted

***Plus the usual ...***

Events, Rallies, Contests, etc.

### September

- 3 TBA
- 10 Club Net - 2Mtrs
- 17 TBA
- 24 Club Net - 70cms

### October

- 1 TBA
- 8 Club Net - 2Mtrs
- 15 TBA
- 22 Club Net - 70cms
- 29 Club Net - GB3BZ Repeater

### November

- 5 Club "Junk" Sale
- 12 Club Net - 2Mtrs
- 19 TBA
- 26 Club Net - 70cms

### December

- 3 Christmas Social
- 10 Club Net - 2Mtrs
- 17 Natter Night
- 24 Club Net - 70cms
- 31 Club Net - GB3BZ Repeater

## A new voice for WWV

*Stan Horzempa WAILOU*

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Time and frequency radio station WWV recently switched to a digital female voice for its 18th minute of the hour geophysical alert broadcasts. A text-to-speech engine from NeoSpeech generates the new voice "Kate," which was chosen for its clarity and consistency.

The new voice is getting rave reviews. It is "incredibly easier to understand; higher apparent modulation, consistent, well articulated and at a higher audio frequency/pitch that comes through well in spite of fading," according to

Dean Lewis, W9WGV, who alerted me about the change.

The website of the National Institute of Standards and Technology (NIST) details the time and frequency services of WWV and its sister stations WWVH and WWVB. Of particular interest is the Digital Time Code and Broadcast Format web page that describes the minutia of WWV and WWVH broadcasts. Also, check out the QSL Gallery for NIST Radio Stations and the Station Library, which has an interesting collection of papers and article (downloadable PDFs) related to radio, time, and frequency standards and measurements.

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## Club Library

*Howard G6LXK*

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We hold a collection of about 70 books and DVDs that features electronic construction, the history of radio, shortwave listening and other forms of technology to do with radio.

Some other recent titles in the collection include:

VHF/UHF Manual.  
Popular Electronic Circuits.  
Television Viewers Guide

106 easy projects beyond the Transistor  
Transistor Circuit Guidebook.  
Radio Listeners Guide  
The Battle for Marconi's Story  
Most Secret War  
Technical Topics Scrapbook

### Home Construction?

Type "Claude Paillard F2FO video" into Google, and see what comes up. Among numerous other items, all of great interest to amateurs, is a video, some 17 minutes long, which shows Claude making a diode valve, and using it in a very old-looking "crystal set", as a detector.

## Cambridge Radio Rally, March 4, 2012

*Howard, G6LXX*

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After the snowy weather, which affected the Canvey rally this year, we were this time greeted by lots of rain. This was unusual weather, as it has been a very dry spring so far. Edwin was kind enough to provide the transport for five of us to Godmanchester, located quite near Huntingdon. The venue, Wood Green Animal Shelter, is a nice venue, very easy to find, with a large restaurant, located on the ancient roman route 'Ermine Street'. The Romans amongst you will know this road well.

We got there quite early, so that we could queue up in the dry. They let us through on the dot of 10am. We could see that some of the stall- holders were only just ready for us. We could see Dave G3PEN and Melvin preparing their stall. One large stall at the end remained empty for the whole event, so something went wrong there. Tetra were there as usual, so was the RSGB book stall, the Cambridge Repeater Group van was on show. It seemed to me that there were less stalls there this year, and it certainly

was not quite so full up with visitors as usual.

Perhaps the weather and the economy is putting people off. We think that rallies are struggling. I



think Ebay now sees all of the good stuff, with the rallies handling the bulky items/job lots, lower value items and for those people who don't sell on Ebay. It may be me, but I am not buying so many things these days. Perhaps my shack is nearing completion!

*(Apologies for the late inclusion of this item which is due to lack of space in the April edition.)*

## Know the Band Plans-IV

### RSGB

#### 14MHz (20m)

- 14,000-14,060 200 Hz CW - CPS  
14,055 kHz Slow CW - CoA
- 14,060-14,070 200 Hz CW  
14,060 kHz QRP CoA
- 14,070-14,089 500 Hz NB modes
- 14,089-14,099 500 Hz NB modes -  
ACDS (unattended)
- 14,099-14,101 IBP - reserved  
exclusively for beacons
- 14,101-14,112 2.7 kHz AM -  
CDS (unattended)
- 14,112-14,125 2.7 kHz AM  
(excluding digimodes)
- 14,125-14,300 2.7 kHz AM -  
SSB CPS
- 14,130kHz - digital voice CoA
- 14,195 ±5 kHz P3
- 14,230 kHz - Image (video)  
CoA
- 14,285 kHz - QRP CoA
- 14,300-14,350 2.7 kHz AM
- 14,300 kHz Global Emerg'y  
CoA

#### LICENCE NOTES:

Amateur Service - Primary User.

14,000-14,250 kHz Amateur  
Satellite Service - Primary User.

Necessary bandwidth: For a given class of emission, the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions.

The use of Amplitude Modulation is acceptable in the all modes segments but users are asked to consider adjacent channel activity when selecting operating frequencies.

Foundation and Intermediate Licence holders are advised to check their licences for the permitted power limits and conditions applicable to their class of licence.

#### Key:

- ACDS - Automatically Controlled  
Data stations (unattended)
- AM - All Modes
- CoA - Centre of Activity
- CPS - Contest Preferred Segment
- CW - Telegraphy
- IBP - International Beacon Plan
- NB - Narrow Band

#### Priority:

- P1 - inter-continental operation
- P2 - inter-continental telephony
- P3 - Priority for Dxpeditions

# Comparators

*Ian, G8MKN*

Should you need to design a switching circuit or replace an existing one, while you can use a dedicated comparator chip like the LM351 you can also use a standard 741 type Op Amp that you may more likely find in the junk box - or one of the many, more modern, 'clones' such as the 071 or 081; or even one of their twin or quad cousins - 072, 084 etc.

The circuit shown will give a good switching and noise tolerant circuit. R1 and R2 form a voltage divider along with R3 which determines; the two switching levels between 0 and Vcc. The difference between the two levels can be as low as 1.1V, determined by the formula for R1.

With the op-amp o/p low R3 is in parallel with R2; with the o/p high R3 is in parallel with R1.

To make things simple: start by defining  $R3 = 1$  and calculate the values of R1 and R2 relative to it. All you need to know are the two voltages at which you want to switch.

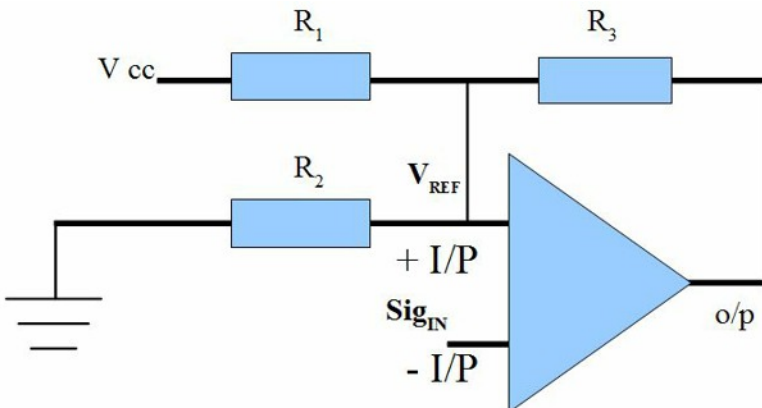
The amplifier output does not quite reach the voltage of the supply rails, but the actual set-points are still very close to the theoretical.

If  $R3 = 1$  then, assuming the o/p switches between Vcc & 0V,

$$R1 = (Vh/Vl) - 1, \text{ and}$$

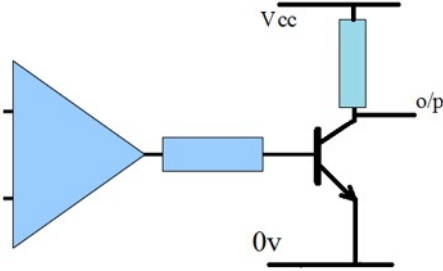
$$R2 = (Vh-Vl) / (Vcc-Vh)$$

Where  $Vl = V_{ref} \text{ (low)}$ ;  $Vh = V_{ref} \text{ (high)}$  - the two points at which you want to switch.



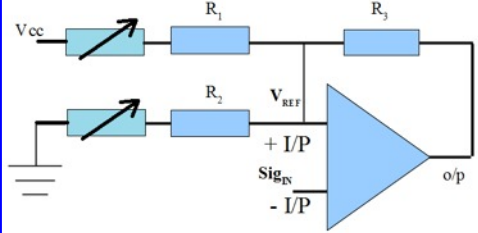


The actual values are not critical, it's the ratios that determine the operating points. The values can be between 10K and 220k.



For example:  
To switch at 2.2V and 3.4V with a supply of 6V and  $R_3=10K$ .  $R_1=4k16$  and  $R_2=4k62$ .

The varying signal input is fed into the inverting I/p of the op amp and the output taken either directly from the o/p pin of the op amp or by using a resistor and transistor you can get an inverted output.



Should you need to adjust one or both switching levels you can either reduce the value of  $R_1$  (&/or  $R_2$ ) slightly, say 10% and add a variable resistor in series with them.

## Magazines

*Dave Penny, G3PEN*

The number of radio-oriented magazines has reduced over the years, and the increasing cost has meant that many of us no longer subscribe to many - or any. Personally, I take only three nowadays - RadCom, Practical Wireless and SPRAT (the quarterly G-QRP magazine). All of these have interesting articles, but obviously they are not seen by all club members, particularly since the RSGB decided to not send a monthly

copy of RadCom to affiliated clubs. (Shame!)

I wondered if it would be of any interest to club members if I gave a (fairly) regular short review in BarsCom of the more interesting articles, so that you can all see what you are missing each month! Please let the Editor know if this would be of any interest.

If anyone takes other radio/electronics magazines, perhaps they could also do a similar job? I would certainly appreciate it.

# RSGB News Bulletin Schedule

## RSGB

### East Anglia and South East England

Time	Frequency	Mode	Newsreaders	Location
09.00	3.640	LSB	G8ROG, G4IWS, G6UWK, G6WPJ	- Reading, Manningtree, Bures
09.00	70.425	FM	G8ROG, G4IWS	- Reading
09.30	145.525	FM	G8CKN, G8LES	- Alton
09.30	145.525	FM	G3NDJ, G8MSQ, M0KEL	- Lancing, Worthing
09.30	145.525	FM	G0OZS, M0AKK, G4YQC, G0DVJ	- Manningtree, Ipswich, Felixstowe
09.30	433.000	FM	G8CKN via GB3BN	- Bracknell
09.30	433.225	FM	G8CKN via GB3IW	- Isle of Wight
09.30	1308.00	ATV	G8CKN, G8LES via GB3HV	- High Wycombe
09.30	1316.00	ATV	G8CKN, G8LES via GB3IV	- Isle of Wight
09.30	1316.00	ATV	G3NDJ via GB3VR	- Brighton
10.00	70.425	FM	G4OXY, G1GSN	- Biggleswade
10.00	145.525	FM	G4OXY, G1GSN, G4OXD	- Biggleswade Hitchin
10.30	51.530	FM	G3EKJ, G6DGK	- Uckfield
10.30	145.525	FM	G3EKJ, G6DGK	- Uckfield
18.00	433.525	FM	G4IMP	- Folkestone and Dover
19.00	145.625	FM	G4NZQ, G7URP, G3LDI via GB3NB	- Norwich

*All broadcasts are on Sundays*

*All times are local*

## For Sale or Wanted

Is there something that you want, or want to get rid of?

All members' ads are FREE.

Contact the editor to submit your ad.

## Rallies

### 2 JUNE

CENTRAL SCOTLAND MINI HAM RADIO CONVENTION – Crofthead Farm Community Education Centre, Templar Rise, Livingston EH54 6DG. OT 10am/9.50, TS, FM, B&B, LEC, RSGB, WIN, C. [[uk.groups.yahoo.com/group/cshrc](http://uk.groups.yahoo.com/group/cshrc)].

### 3 JUNE

SPALDING & DARS ANNUAL RALLY – The Sir John Glead Technology School, Halmer Gardens, Spalding, Lincs, PE11 2EF. Free CP, OT 10am, TS, C, CBS. John, G4NBR, 07946 302 815, rally-secretary@sdars.org.uk [[www.sdars.org.uk](http://www.sdars.org.uk)].

### 17 JUNE

25th NEWBURY RADIO RALLY AND BOOT SALE – Newbury Showground, next to M4 J13. Big display area of amateur radio stations, exhibitions, special groups, clubs and societies. TI S22 (V44), free CP, OT 9.00, £2, TS, C, DF, FM, SIG. Sellers have access from 8am and pitches cost £10. Details from rally@nadars.org.uk [[www.nadars.org.uk](http://www.nadars.org.uk)].

### 22 – 24 JUNE

HAMTRONIC SHOW, FRIEDRICHSHAFEN – Messe, Friedrichshafen, Germany. TS, FM, CP, SIG, LB, C, DF, LEC, CS. Large RSGB bookstall [[www.hamradio-friedrichshafen.de/html/en](http://www.hamradio-friedrichshafen.de/html/en)].

### 24 JUNE

WEST OF ENGLAND RADIO RALLY – Cheese & Grain, Bridge Street, Frome, Somerset BA11 1BE. TS, RSGB Books, C, CP, DIS. Contact Shaun, G8VPG, 01225 873 098, rallymanager@westrally.org.uk [[www.westrally.org.uk](http://www.westrally.org.uk)].

### 7 JULY

BANGOR AND DISTRICT ARS RALLY – Donaghadee Community Centre, County Down BT21 0HB. OT 11.30am, £3, TS, B&B, SIG. Bill GI4AAM 02891 816 707, bill.langtry@btinternet.com [[www.bdars.com](http://www.bdars.com)].

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May 2012

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## 15 JULY

QRP IN THE COUNTRY – Upton Bridge Farm, Long Sutton TA10 9NJ.  
QRP & homebrew in a country setting. TS, FAM, SIG. Tim Walford,  
G3PCJ, walfor@globalnet.co.uk.

## 29 JULY

HORNCastle SUMMER RALLY – Horncastle Youth Centre, Willow  
Road, Horncastle, Lincolnshire LN9 6DZ. 10.30, £1.50, DF, C. Tables £5,  
free power. Tony, G3ZPU, 01507 527 835.

## 12 AUGUST

FLIGHT REFUELLING ARS HAMFEST – Cobham Sports and Social  
Club Ground, Merley, Nr. Wimborne, Dorset. BH21 3DA. TI S22, CP, OT  
10.00, TS, CBS, LB, C. Details Mike, M0MJS, 01202 883 479,  
hamfest@frars.org.uk [[www.frars.org.uk](http://www.frars.org.uk)].

## 2 SEPTEMBER

TELFORD HAMFEST – Enginuity Technology Centre, Coalbrookdale,  
Telford TF8 7DU. OT 10.30. TI S22 & GB3TF 433.200MHz. TS, SIG,  
free CP, LEC, FAM. Details from Martyn, G3UKV, 01952 255 416  
[[www.telfordhamfest.co.uk](http://www.telfordhamfest.co.uk)].

## 9 SEPTEMBER

FRISKNEY & EAST LINCOLNSHIRE COMMUNICATIONS CLUB  
RALLY – The Friskney Village Hall, Church Road, Friskney, Lincs, 6.5  
miles south of Skegness. Details Bren, 2E0BDS, 01754 820 060, Ian  
Donnelly, 2E0XOD, 07554 362 020 [[www.felcc.com](http://www.felcc.com)].

## 23 SEPTEMBER

22nd GREAT NORTHERN HAMFEST – Barnsley Premier Leisure  
Complex, Queens Ground, Queens Road, Barnsley, South Yorkshire S71  
1AN. OT 10.30am – 3pm, £3, DF, TS, SIG, RSGB Bookstall, LB, C,  
FAM. Ernie, G4LUE, 01226 716 339 [[www.greatnorthernhamfest.co.uk](http://www.greatnorthernhamfest.co.uk)].

## Contests

### VHF/UHF

May

- 1 2000-2230 144MHz UKAC
- 5 1400-2200 432MHz Trophy
- 5 1400-2200 10GHz Trophy
- 5-6 1400-1400 432MHz-248GHz
- 8 2000-2230 432MHz UKAC
- 13 0900-1200 70MHz Contest CW
- 15 2000-2230 1.3GHz UKAC
- 19-20 1400-1400 144MHz May
- 20 1100-1500 144Mhz #1  
Backpackers
- 22 2000-2230 50MHz UKAC
- 22 2000-2230 SHF UKAC
- 27 1400-1600 70MHz Cumulatives  
#3
- 29 2000-2230 70MHz UKAC

June

- 5 2000-2230 144MHz UKAC
- 10 0900-1300 2nd 144MHz  
Backpackers
- 12 2000-2230 432MHz UKAC
- 16-17 1400-1400 50MHz Trophy  
Contest
- 19 2000-2230 1.3GHz UKAC
- 24 1400-1600 70MHz Cumulatives  
#4
- 26 2000-2230 50MHz UKAC
- 26 2000-2230 SHF UKAC

### HF

May

- 7 1900-2030 80m CC SSB LOW  
QRP
- 16 1900-2030 80m CC DATA  
LOW QRP
- 24 1900-2030 80m CC CW LOW  
QRP

June

- 2-3 1500-1500 NFD Open  
Restricted LowPower
- 4 1900-2030 80m CC DATA  
LOW QRP
- 13 1900-2030 80m CC CW LOW  
QRP
- 21 1900-2030 80m CC SSB LOW  
QRP

July

- 2 1900-2030 80m CC CW LOW  
QRP
- 11 1900-2030 80m CC SSB LOW  
QRP
- 19 1900-2030 80m CC DATA  
LOW QRP
- 22 0900-1600 Low Power Contest  
A B C D
- 28-29 1200-1200 IOTA Contest  
Single Operator  
Unassisted Single Operator  
Assisted Multi Operator IOTA  
Points (M4)

## GB60VUL

### RSGB

Over the last few years, GB0VUL has been used by various members of the Newbury & District Amateur Radio Society to promote XH558, the last flying Vulcan bomber. This year the callsign GB60VUL is being used to promote 60 years of the Vulcan Bomber and the Vulcan's

salute to Her Majesty during her Diamond Jubilee year.

The call will be active from 6 different locations from 30 April to 27 May. These include Robin Hood Airport Doncaster, the Control Tower at Greenham Common, and the 211 Squadron ATC in Newbury.

Details will appear in GB2RS news nearer the time.

## More Management Directives

"Returned for reconsideration..." Did you think you'd get away with this?

"See me and let's discuss..." Come down to my office. I'm lonesome.

"It will be remembered...." You have forgotten, if indeed you ever knew.

"Note and initial..." Let's spread the responsibility for this.

"Present indications are..." One wild guess is as good as another.

"Opinion widely held..." Three company officials agree.

## RSGB AGM Recording

### RSGB

A recording of the 2012 AGM as well as presentations shown on the day, and some photos, can now be found on the RSGB website.

**Don't forget!**

**BADARS AGM**

**May 21st at 20.00**

## Braintree and District Amateur Radio Society

Braintree and District A.R.S. meets every 1st and 3rd Monday of the month at The Clubhouse, Braintree Hockey Club, Church Street, Bocking. Doors open from 7.30 pm for an 8 pm start to the meeting. Prior to 8 pm, and during the refreshments break, when a cup of tea or coffee is available free of charge, members have the opportunity to sell or exchange equipment etc. Meetings normally finish at 10 pm.

A Club Net operates on the 2nd and 4th Mondays (excluding Bank Holidays) under the callsigns G6BRH and G3XG. The net commences at 20.00 clocktime on V30 (S15) - 145.375MHz and SU23 - 433.575MHz, unless QRM. In months with 5th Monday the net operates via GB3BZ 430.850Mhz.

The Club Membership fee is £16 annually; Senior members (State Retirement age) and Junior members (under 18) pay a reduced club subscription of £10. Door fees are payable per meeting. Rates are £1 for members, and £1 for visitors.

This magazine "BARSCOM" is issued free to members, usually at the first meeting of the month by e-mail. Members unable to attend club meetings may lodge S.A.E.s with the Editor for printed copies of BARSCOM. Usual deadline for copy is the 3rd weekend of each month.

Members advertisements are published free of charge.

The club operates a no smoking policy at it's meeting.

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For more information and pictures of events and projects see our Web Site at [www.badars.co.uk](http://www.badars.co.uk)

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The next edition will be published on June 1

The deadline for submissions for the next edition is May 27

**When disposing of this booklet please shred or destroy the back page to protect members' privacy.**

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