

T News Letter

TDARS

G3ZME
G6ZME

TELFORD AND DISTRICT AMATEUR RADIO SOCIETY

www.TDARS.org.uk

FOUNDED 1969

www.TelfordHamfest.co.uk

Issue 254

November 2012

www.TDARS.org.uk

Programme

www.telfordhamfest.co.uk

- November 14** *Surplus Equipment sale. Use the new Selling Forms ! (see web)*
- November 21** *“ARDF” - Guest speaker Andrew G4KWQ (Direction Finding)*
- November 28** *Winter Construction Projects. Follow-on from Oct.17 choices #2*
- December 5** *Committee Meeting and HF/VHF station on air (GX3ZME)*
- December 12** *Annual Dinner at the Duck Inn @ Allscott. Booking Form enclosed.*
- December 19** *Mince Pies and Mulled Wine social. TDARS HQ*
- December 26** *No meeting. Possible net 144.6 FM at 21:00 hrs
2013*
- January 2** *Committee Meeting and HF/VHF station on air (GX3ZME)*
- January 9** *Winter Construction Project update #3*
- January 16** *“Morse Fun” - it should be - M/C Richard G0VXG with ideas!*
- January 23** *Indoor Bowls—with the Little Wenlock crowd next door ...*
- January 30** *Video Evening. T.B.C.*
- February 6** *Committee Meeting and HF/VHF station on air (GX3ZME)*
- February 13** *Under-a-Fiver Construction Competition*
For Amateur Radio Exam Training—enquiries to Mike G3JKX (01952 299677)
For Morse Training and Morse Proficiency Tests Martyn G3UKV or Eric M0KZB.
For Equipment Loans & Returns contact Ricky M0RKY or Simon 2E0CHV

Radio Amateur Exams: Latest News: www.tdars.org.uk/html/trainingFoundation.html

VILLAGE HALL, MALTHOUSE BANK, LITTLE WENLOCK, TELFORD, SHROPSHIRE. TF6 5BG

Qtc: News & Information



TDARS MEETINGS EVERY WEDNESDAY AT LITTLE WENLOCK VILLAGE HALL UNLESS INDICATED OTHERWISE ON THE FRONT PAGE PROGRAMME. ROOM BOOKED FROM 7PM - 10PM. MEETINGS USUALLY COMMENCE AT 8PM TDARS Terriers meet from 6:30 pm Please return borrowed equipment promptly

The Hallowe'en Soup and Social evening was well supported at the end of October, with a choice of two very tasty soups. Special thanks to both Peter ('ZSU) and his 'other half' - Helen - for preparing these excellent refreshments.

A few favourites emerged from the October meeting for "**Members' Winter Projects**", including a bench style PSU (variable voltage 5-30v, variable current limiting, possibly also neg. voltages) ; An aerial tuning unit (ATU), including possibly a basic version for the TDARS Terriers to make (receive/QRP); The nanowave (lightwave) transceiver projects further development; and since then, Rob M0TOY has demonstrated his CTCSS sub-audible tone board prototype, that also includes a 1750 Hz toneburst.



Local nets have been a feature of TDARS 'on-air' activity since the Society was formed. However of late, activity has dwindled. So a reminder that these take place on Sundays (9pm, 144.6 MHz FM), Monday/Friday mornings at 9am - not really a club net, but open-to-all - on 3.657 MHz SSB. 1st. Wednesday in month on 3.657MHz (or anywhere HF) or 2m or 70cm (GX3ZME) during the evening from about 8pm onwards. All frequencies +/- QRM, of course. Both 144.6MHz and GB3TF (433.2 MHz) are often monitored at other times. The D-Star repeater GB7SY is now 'off-air' and QRT from M0FHM's QTH. It will return when a new licence is issued, from the Ludlow area, probably with a new GB7... callsign.

Eric M0KZB hopes to start another **morse tuition group**. "The new Morse code tuition will begin shortly, if you are interested in joining our Morse group, please email me your name and call sign. This course will be heavily supported by email documentation, should you miss a session, you will be sent an email containing details of that lesson.

I hope you will take this opportunity to join us, it doesn't matter if you know some Morse or no Morse at all, we cater for all needs.

Our Morse tuition evenings are often tongue in cheek and we have fun at the same time. We hope to meet on Thursday and Sunday evenings on 144.600 MHz; you will each be sent self-teach lessons in between, so that when you come on the air, you will be able to hit the road running. Please let me know soonest, and I will email you a starter pack.

hpe cu sn," - 73 Eric M0KZB [e.arkinstall@virgin.net]

A number of Club members continue to take part in the Tuesday evening (20:00-22:30 hrs) VHF and up **RSGB Activity Contests ("UKAC")**. Participants this year have included Dave G0CER, Martyn G3UKV, Dave 2E0DTB, Rob M0TOY, Paul M0PNN, Mike G3JKX, Simon 2E0CHV/P, Jim G8UGL and Bob M0RJS. As the saying goes, 'every little helps'. TDARS is placed about 21st currently, out of 110 clubs across the UK. It's never too late to join in.

Thanks to Mike G3JKX, TDARS has a featured entry in the 2013 RSGB Centenary edition of the **Annual Yearbook**. See page 55. A very useful reference book published by the RSGB.

Richard G0VXG, Mike G3JKX and Peter 2E0ZSU had a successful evening in the RSGB **Club Calls Contest** (Nov.10). They had 85 QSOs in the 3 hour top-band event, using GX3ZME.

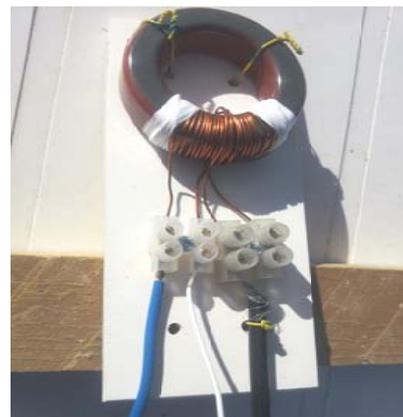
Following discussions at several weekly meetings over recent months, the membership has decided to go ahead and purchase an **Elecraft KX3 portable HF/50 Transceiver**. This will mainly be financed by the CotY 2011 award prize money. Also, a set of **Motorola hand-helds** that operate on the 446 MHz PMR band, mainly for use by the TDARS Terriers and Foundation Exam trainees as part of their course. As there is likely to be a waiting list to borrow the KX3 transceiver, Richy, our Curator, has asked that you let him know if you wish to borrow the set, so that he can draw up a chronological list. It is reputed to have the best receiver on the market !



End fed sloper for HF—by Richard G0VXG



I've always been a great believer in dipoles, the only problem is when QRV they take a bit of setting up with the 3 poles etc. I noticed an article in RadComm some time ago where they were using an end fed vertical on 20m. The impedance of a ½ wave end fed antenna is about 5000 ohms so some form of impedance matching is required. I wound 20 turns onto a 200-2 red toroid (but a smaller one would be fine for QRP). Over the centre I wound 2 turns, this gives a 100:1 impedance ratio so the QRP rig sees 50 ohms. The radiation pattern for this type of aerial is the same as a dipole with maximum current at the centre. To bring the SWR down to 1:1 a 350 pF variable capacitor was used on the 50 ohm side. With the antenna having such a high impedance, only a minimal earth is required; in my case I just used a 9 inch spike but a counterpoise could also be used, length



about 0.05 wavelengths (so about 1.5m on the 30m band). The antenna was just a piece of wire 15m long and 7m high, I could hear most of Europe and worked a few "local" countries with 5 watts. A Russian station then came up R1TEU, Eugene, I gave him a call and was pleased with a 559 report at 1500miles. Because only one pole is required this set up will be much quicker to set up than a dipole.



Mike's Piece, November 2012

As you know, Winter is approaching rapidly and your neglected aerals, feeders and fittings need to be looked at so that you don't have to do any coax checking/ladder climbing or waterproofing in the freezing cold/wet/snow/gale/ inconvenient time/when a contest is on or that desperately wanted DX is 5 & 9+. Remember that the experienced operator (that's you) and the expensive rig are of little use if the RF power output is being severely reduced by using cheap coax that rain has got into. You MUST waterproof every coax connection that is outside the shack. Yes, even those made with waterproof 'N' connectors. Use self- amalgamating tape (Maplins) or the brush-on 'Performix' Liquid Tape, available on line and advertised in RadCom sometimes. This is not cheap, but you don't need much on each joint and it's brilliantly efficient, getting into the nooks and crannies. A word of warning though. The liquid is flammable and the fumes are harmful. Sets in seconds though. Oh yes, NEVER use ordinary insulating tape!

How long have your coaxes been subject to the wind and ultraviolet radiation? You get what you pay for, so buy good replacements. TDARS usually has some which you can buy by the metre. An easy way to check your old stuff is to take the aerial off, put a dummy load on that end of the coax and do an SWR check. If you get close to 1:1, then fine. Bet you don't though, if it's some time since you tried this. Find out NOW.

Vy 73, Mike, G3JKX

John Earnshaw (G4YSS) TOP BAND Loading Coils for use on 80m dipole.

Loading coils for 1.8 MHz band, for use with 'WAB' 80/40/20m dipole. Dipole band selection is via 'pull-apart' gold-plated.Pin / Socket connectors; two for 40m, two for 20m. Each loading coil is inserted in series at the two 40m positions and applies inductive loading to the 80m dipole, allowing it to resonate in the 1.8 MHz band. Bandwidth is narrow so a form of variable slug tuning is incorporated to enable QSY within the band.

Dipole details: 'WAB' 80/40/20m, 1/2 wave dipole, built 1987, normally for use with a 5m carbon fibre 4 section mast with ends at 1m agl. When configured for 80m, 40m, 20m (and 30m), the 1/4 lengths are as follows:

80m (SSB)...2 x 18.4m. 40m...2x 9.77m. 20m...2 x 4.95m. (30m...1 x 9.77m and 1 x 4.95m).
80m CW...add 0.8m to each half.

Feeder: 9.5m length of 1.8mm dia. RG178 miniature coax with UG88 BNC connector and PL259 adaptor. No balun is fitted.

Spooling: Dipole is spooled on a cable reel 120mm OD x 40mm ID and 40mm wide, coaxial last. Total weight: 0.39 kg.

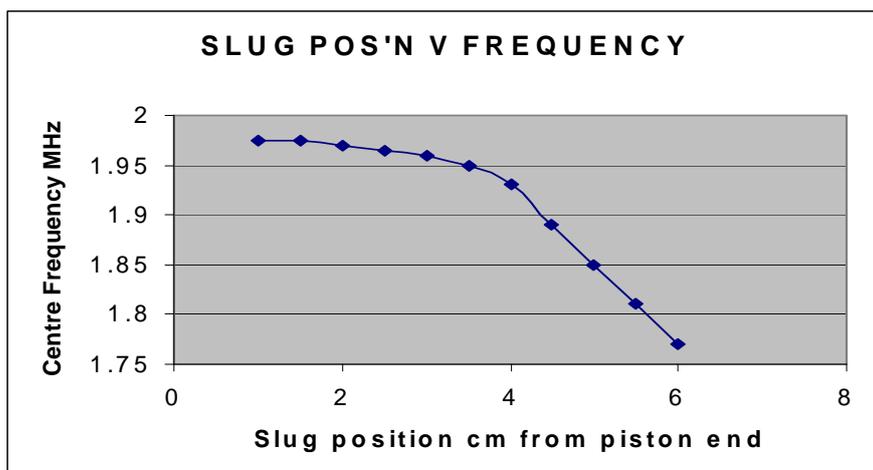
Loading coil information: Coil former; 20mm dia x 74mm lg PVC tubing with modified 'Monoject' 5ml hypodermic syringe inside. Coils; 113 turns of 0.4mm dia enamelled copper wire, close wound over 51mm of former. Two coils req'd, one for each dipole half. Coil terminations; 1/4" fastons, male one end, female other to suit dipole. Pop rivet (2.5mm dia) terminals to former at each end. Syringe mods; Crush 3/4 of a ferrite toroid into powder, using a hammer. Mix powder with araldite and apply along piston handle, in all 4 quadrants and evenly over a length of 4 cm, 2cm each side of the mid-point.

Toroid; Ferrite toroid of unknown specification, 22.2mm dia x 13.3 inner dia x 6.3mm thick. Material is attracted by a magnet. Calibration; Apply white paint to inner of syringe over ferrite material and mark with calibration lines at 1 cm intervals from piston.

Tuning; Erect dipole on 6.8m mast with ends at 1m agl. Open 40m break points and insert one coil in each half of 80m dipole. Starting with 'tuning slugs' fully out, record frequencies for minimum and hi/lo 3:1 VSWR points, using MFJ antenna analyser.

Repeat for all positions of 'slug' at 0.5cm intervals. Make a chart of this particular data to be kept with coils. [editor: this data not shown here, but visible in photo.]

The system was used successfully from Fountains Fell summit on 30/31 July 2004, to work the summit of Ben Nevis in support of 'Summits-on-the-Air'. Closer to midnight, reports into the Midlands were 2 way 599.



Editor's note: This article is re-produced by kind permission of John Earnshaw G4YSS from Scarborough. It has been edited by removing some detailed data, but hopefully, the article is still meaningful. Essentially, as I understand it, broken and crushed ferrite is placed in a hypodermic syringe capsule, which can then be raised or lowered into the core of a conventional antenna loading inductor—an ingenious alternative solution to tuning ! John retains the copyright.

The following 26 countries were contacted:

Austria, Azores, Bosnia-Herzegovina, Ceuta & Melilla, Corsica, Czech Republic, Denmark, England, European Russia, Germany, Greece, Ireland, Italy, Malta, Moldova, Netherlands, Northern Ireland, Norway, Poland, Portugal, Romania, Scotland, Spain, Switzerland, United States and Wales.



I would like to thank everyone for their help throughout the weekend setting up, dismantling and also operating the station and so ably supporting the young Scouts on the air! Plus a special thank you to all the Beavers, Cubs and Scouts who made the weekend so enjoyable for us. A special mention should go to Robin M6LMD, son of John M0JZH. Robin is only a young Scout himself, but proved himself a capable operator on 40 metres and practically running the 2 metre station on his own. Well done Robin!



So there you have it, JOTA over for another year, and we must have done something right as we have been invited back for 2013!

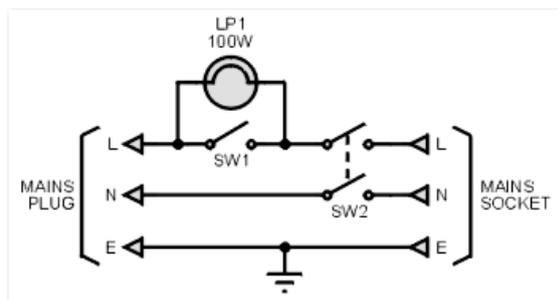


THANKS to Richard G0VXG, Eric M0KZB, Mike G3JKX, John G4YSS, David M0YDH, Tony M0TAW, Dave G0CER, Paul M0PNN, Simon 2E0CHV, John M0JZH, for Newsletter input. Next publication: January 2013. Input in any format always welcome !

Series Lamp Limiter –by Tony M0TAW

Connecting a set to the mains for the first time is always a worrying experience. What if the main smoothing capacitor is leaky? What if the rectifier valve is short-circuit or flashes over? What if the output valve draws excessive anode current? What if the mains transformer has shorted turns?

Some of these faults may be found during the initial checks before powering the set, but even then it is difficult to be certain that everything is OK. Any of these faults will cause the mains current to be higher than normal, which can cause further damage, if it is not noticed or limited in some way. Limiting the current is what this project is about. Of course, we could just use a fuse, but the smallest fuse that fits into a UK standard mains plug is 1A, and in practice it is likely to be 3A. Not much good when the set is supposed to draw around 150mA and is actually drawing about 300mA. Moreover, even if a suitable fuse was fitted, and blew, it would not really help you work out what is actually wrong.



Circuit Operation

The idea behind this project is not new. Engineers and enthusiasts have used it for years - so it is well proven. It is also very simple - connect a 100W lamp bulb in series with the supply to the set. At 230V, a 100W lamp requires about 400mA to illuminate fully. Therefore, the maximum current that can flow through your faulty set is 400mA. At this current, virtually all the voltage is dropped across the lamp, not across the set.

One major advantage of using a lamp, rather than a resistor, is that the resistance of the lamp varies with temperature. When it is cool the resistance is much lower than when it is hot. If your working radio is drawing about 150mA the lamp will be cool, its resistance will be low, and it will only drop around 30 volts - leaving over 200V for the set. Using a clear lamp you will be able to see the filament glow a very dull orange and soon get to know from the glow whether things are OK or not

Of course, the set may not work properly from this lower supply voltage, but it will work well enough for you to know that there are no serious problems. If you want to keep the set running via the lamp, just reduce the voltage selector to a lower position (remember to change it back afterwards). Otherwise, you can remove the lamp once you are happy that nothing catastrophic is about to happen. My unit (described here) has a switch in parallel with the lamp, so that the set can be powered either directly or via the lamp, at the flick of a switch.

There is nothing complicated about the circuit. We have the lamp (LP1) in series with the live side of the mains supply to the set, with a switch (SW1) to bypass it when we wish to run the set directly. The double-pole switch (SW2) shown on the output is actually built into the mains socket used. Readers in countries that do not have switched sockets may wish to use a separate switch.

Note that the lamp is in the live side of the mains supply, not the neutral. This is for safety, so that the neutral side (and the chassis in AC/DC sets) stays close to earth potential no matter how much voltage is dropped across the lamp.

This unit is so simple and cheap, that I encourage all vintage radio enthusiasts to build one! It could prevent an expensive mess!

Construction Construction is fairly basic too - the socket, lamp and bypass switch are mounted on a piece of wood, and connected up as indicated by the circuit diagram. Since the unit is going to be used in the workshop, there is no need to do anything too fancy (as long as it is safe).

When selecting the mains socket, try to find one with a double-pole switch. Many (not just cheap ones) have a single-pole switch that breaks the live side only. This information is marked on the rear of the socket, but when it is in its display packing in the DIY store, you cannot see that! The better quality products (made by MK, Crabtree etc.) should have double-pole switches, but I have not bought these for a while so I cannot be certain. Some shops sell a range of sockets which look like MK products, but are not (they do not have the MK logo on them) - so do not be fooled. If in doubt you may prefer to buy in an electrical shop that have the products loose and who know what they are selling. On the other hand, you could quietly open a packet in the DIY store to look when no one is around - but I did not suggest that!



The rest of the bits are standard - a normal single-pole light switch for the lamp by-pass, two surface boxes (it will look tidier if you get two the same depth) and a lamp holder. I initially used a normal batten-holder because it allows the lamp to be seen easily, and quickly replaced if necessary. However, the lamp is rather vulnerable so I replaced this with a bulkhead lamp-holder. These are a bit more expensive, but the budget brand from the DIY store will do. Do not forget to buy a clear 100W lamp bulb, a mains plug, and the cable. If you are lucky, you may have some of these bits and pieces lying around at home already.

As the photo shows, I mounted the components vertically on the piece of wood (laminated chip-board), with the socket at the bottom, the switch in the middle and the lamp at the top. The 3-core 3-amp mains flex enters the side of the socket box, and is fixed securely to the wood with a few cable clips. Connect the neutral and earth to the relevant terminals on the socket. You may need to strip the insulation back some way and fold the bare wires over a few times to make a lump thick enough for the terminal screws to grip (they are intended for much thicker wire). Connect the live wire to a piece of terminal block.

You now need a short piece of two-core flex. Connect one core to the terminal block with the incoming live wire, and connect the other core to the live terminal on the mains socket. Thread this through to the switch box, and connect the two cores to the two terminals on the switch. Connect another length of two-core flex between the same two terminals on the switch and the two terminals in the lamp holder. If you are using a bulkhead lamp-holder or some other lamp-holder that requires an earth connection, use three-core flex.

Finally fit a mains plug, fitted with a 3A fuse, to the end of the mains flex, and fit the 100W lamp into the holder. Constructors outside the UK will of course have to vary the assembly to suit the locally available electrical fittings. If switched sockets are not available, it would be advisable to provide a separate switch as this saves having to regularly insert and withdraw the mains plug. The unit should work with any voltage supply, providing the lamp is suitably rated.

WARNING! This unit is connected directly to the mains, and involves mains wiring. Do not allow this unit to be used by young children or persons who are not aware of the dangers. The unit must be prominently labelled with appropriate warnings. The unit is intended to be used in a workshop situation only.



**Annual TDARS Christmas Dinner at The Duck at
Allscott Inn
Wed. 12th December 2012
Booking Form: Please return by Wed. Dec. 5th latest:**



Use this page to make your Booking ASAP, or by Wednesday 5 th December at the very latest.
Pass it, e-mail or post it to Martyn G3UKV. The cost is £17.00 per person, payable on the night.
Cancellations less than 2 days before the Dinner may have to be paid for.

MENU	NUMBER REQUIRED
Tomato & Roasted Sweet Red Pepper served with rustic bread	
Creamy garlic mushrooms on a crosstini ciabatti	
Smooth Duck & Port Pate served with chutney & rustic bread	
King Prawns on mixed leaves with Rose Marie sauce	
Smoked Mackerel Fishcake with sweet chilli sauce	
Warm Goat's Cheese, Orange and Walnut Salad	
*****	*****
Shropshire Turkey with pigs in blankets and a sage & onion stuffing	
Chicken Breast butterflied in a creamy white wine, mushroom & tarragon sauce	
Roast Cherrington Beef and Yorkshire pudding	
Salmon Fillet with King Prawns—creamy white wine & dill sauce	
Caramelised Red Onion & Sage Tart with red pesto & grilled goats cheese (other vegetarian options are available)	
8 oz Prime Cherrington Sirloin Steak (cooked to your liking,) served with mushrooms and onion rings - chips optional. (£3 extra)	
Black Cherry Breast of Duck (£3 extra)	
*****	*****
Traditional Christmas Pudding topped with a brandy sauce	
Lemon and Blueberry Cheesecake with ice cream	
Caramel Crunch Cheesecake with ice cream	
Mega Chocolate Fudge cake served warm with ice cream	
Apple and Blackberry Crumble served with custard	
Toffee and Pecan Roulade served with cream	
Chocolate Bar Sundae	

NAME: **7:30 for 8 pm**

Coffee or Tea with treats served afterwards.

The Duck at Allscott Inn (tel: 01952 248484) is located on the B4394 Road, right next to the closed sugar beet factory site, about 3 miles west of Wellington.

Partner, Friend & Family WELCOME !

