Volume 4, Issue 11

Mid Sussex Matters

November 2016

Inside this issue:

Editors Chit Chat

Some of the Raffle prizes that we had at the Surplus Equipment Sale

Mid Sussex ARS Net Times—all times local

Sunday	0800	3.740MHz+/-QRM
Sunday	1100	145.350MHz
Weekdays	1330	21.330MHz+/-QRM
Tuesday (SCARF)	2030	3.725MHz+/-QRM
Wednesday	2000	145.350MHz

GB3HY is now working on the new frequency:

Listen 430.900Mhz, Transmit 438.500Mhz, CTCSS 88.5hz

Letter to the MSARS editor.

This short piece is to thank everyone for the honour of this year's presentations.

The G5RV trophy was a great surprise and will be polished regularly this next year!

The Griff Rockwood shield likewise was a surprise and accepted on behalf of all the training team, thank you.

For those who do not know of Griff, he was one of the early stalwarts of the club, and by profession he was a well- respected doctor specializing in child birth and had settled here, far from his Sri Lanka roots.

The photo of the "students" shows the value to the club of these courses. Unfortunately, some people in the past poo poo'd this activity as a waste of time. Well here is the proof;

As well as nearly half the people in the room being students at one time or another, I had a list going of some of the others that might be remembered;

I will not name them all (because my memory for names is rubbish) but here are a few.

Pete Millis an early M3 became a leading light in the GQRP club and has developed an amazing beach antenna that guarantees trans-Atlantic contacts at 10W almost any time of day & night.

Rob 'KDT/M at the time of writing has worked over 170 countries this year alone.

Alex M0TOT won the RSGB national construction contest recently.

Adrian, not only did the Foundation but went on to get the full licence and is now one of my indispensable tutors and the course administrator.

Sue, his XYL and our Treasurer is now a leading light in the BYLARA, the UK YLs group.

Anyone heard of BHI? Well, Graham Somerville is one of our students as is Dudley Haister who invented the "flat screen loud speaker"

Merv', and his friend Peter gained the UK height record for "Steiff in space" the high-altitude balloon attempt, which was radio telemetry tracked.

And there are many more, remember the youngster who was mad keen on space, and had a continuous supply of weird questions? Well, apparently, he, or his dad, is now fundraising to send up one of those mini "cube sats"

I am even told that Norman has become the south of England expert on digital internet repeaters. This is all beyond me and leaves me in awe of the new technologies!

So again, thanks to you all and may the club continue as an active "Radio" club passing on our knowledge in the spirit of the "Self-training hobby" we enjoy.

The students do the hard work, we just guide!

Cheers & 73

Chris, 'ZCS

Photo left: G5RV Trophy Presented to Chris G4ZCS for all his hard effort over the years. Both for the Training and all the great lectures that we have been party to. Well Deserved.

Photo Right: The Griff Rockwood shield. Presented to Chris G4ZCS on behalf of the whole training team for the tireless work they do all year round.

Photo Left: Finally a Certificate to Chris G4ZCS for belonging to MSARS for 25 years

All presented by Russell Nelson Chairman

Feature by Peter E. Chadwick, Sen. MIEEE, G3RZP

PW Publishing Ltd., Tayfield House, 38 Poole Road, Westbourne, Bournemouth BH4 9DW • E-Mail: info@pwpublishing.ltd.uk

The WEEE (Waste Electrical and Electronic Equipment) Directive and Disposal of Old Electronic Equipment

The intention of this short article is to bring the attention of readers to regulations regarding the disposal of old equipment and components, some of which contain material that is now classed as 'Hazardous Waste', while most electronic equipment is no longer disposable as 'Household Waste' and therefore should not be put in the dustbin.

The fastest growing area of waste within the EU and possibly in the world, is electronic and electrical waste – old computers, washing machines, refrigerators, freezers, microwave ovens, TV sets, electronic games and radio receivers as well as electronic test equipment and at a lower level, amateur equipment. Some of the, especially older, amateur and surplus equipment is a bigger hazard than might be envisaged because of it containing 'Hazardous Waste'. This includes components and equipment containing carcinogens or potential carcinogenic materials such as polychlorinated or polybrominated biphenyls (PCB and PBB), asbestos and beryllium oxide as well as heavy metals such as lead, mercury, gold and cadmium, which could as salts contaminate the drinking water supply. It is not permissible to dispose of such material as normal household waste.

Although the UK is intending to leave the EU, it is very likely that the regulations will still be applied, especially with the increasing amount of waste equipment being scrapped, in many cases because spare parts are no longer available.

More Modern Equipment

More modern equipment still needs to be disposed of as WEEE, although the definition of EEE is equipment 'with a voltage rating of less than 1000V AC or 1500V DC' – so it could be argued that an amplifier with an operating anode voltage of 2kV is not EEE!

Solid-state transceivers and transmitters may have RF power transistors containing beryllium oxide, and these should be marked as 'Hazardous – Sealed Parts containing Beryllium Oxide'. Any failed transistors should be placed in doubled sealed plastic bags and marked in the same way.

Disposal of batteries, especially NiCd, is best done at a battery recycling point – these are often to be found in the larger supermarkets. Batteries are not covered by the WEEE Directive but by a separate Battery Directive

Shack Clearance

For those who have collected lots of older equipment over the years, disposal may need to be considered by anyone responsible for clearing out the shack after the operator is no longer able to do so. It is important to ensure that people doing that are aware of the requirements under the WEEE Directive. Waste electrical and electronic equipment can be disposed of at a Household Waste Centre in the area designated for WEEE material but it needs to be made clear at the time that the items may contain Hazardous Waste. Items with CRTs are generally treated separately at a Household Waste site because of the danger of implosions if just 'heaved into a skip' and although an item may not look like a TV set or a computer monitor, it should have a label identifying it as containing a CRT.

Transformers, Chokes and Other Items

Oil filled transformers and chokes, wartime American 'bathtub' metal cased capacitors and metal cased paper capacitors can contain PBBs or PCBs so should be packaged in some way such that the cans cannot be punctured. Mercury vapour rectifiers, examples being any of the 866 family, 872, 83, RG1-240A, Marconi/Osram GU1, GU5, GU7, GU8, GU11 and GU20/21 should be carefully packed so that they cannot be broken and the package should be marked as containing mercury. Note that the similar 3B28 and GXU1 valves are xenon filled so are not hazardous if broken – provided nobody cuts themselves on the glass!

Other Possible Hazards

Certain military surplus may contain meters that had luminous scales: the dual pointer meter for the WW2 beam approach equipment is an example and although quite safe if the glass is unbroken, these are radioactive and the dust from flaking luminous paint is a hazard. Incidentally, the cross pointer R1155 D/F meter is not in this category. Other military equipment with luminous markings may similarly be a hazard. Also some older voltage regulator valves, radar T/R cells and the like contain small amounts of radioactive material to ensure rapid 'striking' in the dark but they should be marked with the usual radioactive symbol. The website below provides more information. Such items should be identified when taken to a Household Waste Disposal Centre.

www.orau.org/ptp/collection/consumer%20products/electrontubes.htm

It is vaguely possible that some WW2 IFF and radar equipment is still around which, by mistake, did not have the demolition charges disabled before being released onto the surplus market. Some years back, a garden shed in West London was demolished in an explosion caused by the deterioration of such charges. Should it be suspected that one of these equipments is present, do not touch and contact the police as a matter of urgency.

In conclusion, irresponsible disposal of old equipment and components can lead to a number of problems, some of them of a legal nature and should be avoided. WEEE Disposal is required to be free under the terms of the Directive.

The author is grateful to **Phil Williams G6AQP** and **Greg Logelain** of the Chartered Institution of Wastes Management for their technical assistance in the preparation of this article.

*(**Editor's note:** The preceding article has been offered by its author as a public service to the amateur radio community and may also be published elsewhere. It can be circulated freely provided credit is given to the author)*

Pictures from Surplus Equipment Sale

Right: Our Own Adders!


Infrared Headphone System


Stella Rogers
Chairman

Surplus Equipment Sale

The evening started slowly but with plenty of tea, coffee and hot food for sale things livened up. There was some interesting equipment for sale but alas most of this had too high a reserve on for most of the members to be interested in. Russell did sterling work with the raffle raising £95, thank you for that. Many thanks must go to our ladies for keeping the cooking going, Sue YPY, Angie & Steph, also Tilley, Sue's granddaughter for making all the cakes.

Chris CSE, Mike KMP, Pete AKG, Chris YTU all did a great job selling the equipment. Also the two people at the back of the hall keeping the money right, Alan YKV and Adrian MOT.

Even our president couldn't keep his money his pockets this time and spent some on bits and pieces!!! (He may well be in trouble when he gets home (see picture left)).

From the President's Corner

I would like to welcome our new Committee and thank those who have assumed the task of taking MSARS forward into another year.

HF band conditions are showing a slight improvement now that the darker nights are with us and we have more chance of hearing our North American friends at lunchtime. This gives our newer members a chance of their first American contacts and I'm glad to note that some of them are taking full advantage of the opportunity.

I'm also very pleased to note the enthusiasm shown by those newly qualified and their willingness to learn about antennas appreciating how, once they have any sort of set up at home that improving their antennas can bring in the DX. These things are second nature to us old timers but are not always written down and by chatting about their own set ups at the Club newer members can gain valuable tips on improving their own situation.

It's also a good way for older members with boxes full of unused items to pass needed components onto others and have the satisfaction of seeing these parts put back into use rather than lying unused for years.

It's not just new members that can benefit from these ideas though. One end of the new 204 foot doublet in my garden is supported by a 35 foot aluminium mast made in 1966 by Eric Letts G3RXJ our founder member and taken down when Eric moved from Burgess Hill a few years later. It has been lying in Chris G0GMC's garden since then but a squirt of WD40 eased the original 50 year old pulley and a new set of guys has given it a new lease of life here in Cuckfield for another few years.

So none of us are to old to benefit and if you want something to improve you own set up just ask around or send an email to members@msars.org.uk and something might well be forthcoming which will help you.

In the meantime, keep using the nets and don't forget the HY repeater is free for you to use 24 hours a day.

73, Ken G3WYN.

RSGB VHF Contests & SSB Activity Sessions

Chris J Coward G3YTU

Do you listen on 2m SSB and hear nothing! Well how about taking part in one of the RSGB Contests or the other activity sessions.

RSGB Contests

Check out the Radio Society of Great Britain (RSGB) Contest Committee website at http://www.rsgbcc.org/ and select the VHF Pages at http://www.rsgbcc.org/vhf/ and you will see that there are UK Activity Contests (UKAC) on 2m (144MHz) and 70cm (432MHz) each month throughout the year.

These contests are timed to coincide with the last two hours of a number of European activity contests, with an extra half hour at the end to encourage intra UK activity. They take place on Tuesdays from 2000-2230 local time with 144 MHz on the 1st Tuesday of the month and 432 MHz on the 2nd Tuesday.

SSB Activity Sessions

Lyn GW8JLY started 2m SSB activity sessions about a year ago and these have been relaunched this autumn as described in the RadCom November 2016 VHF/ UHF Column produced by Richard G4HGI together with sessions on 70cm SSB.

- 2m SSB activity sessions…
  - Monday 8pm - 10pm
  - Wednesday 10am - 12noon
  - Friday 8pm - 10pm

- 70cm SSB activity sessions…..
  - Wednesday 7pm - 9pm
  - Sunday 9am - 12noon

Note: All the above times are local (clock) time.

Input Voltage Protection for Yaesu FT817ND

Introduction

Phil Salas AD5X has produces a circuit for 'Input Voltage Protection for Yaesu FT817ND'. The Yaesu FT817 has no fusing and no reverse battery protection. Here are some of his observations for an improved system of protection (for a full set of details, one can print-off the original article):

'The FT817 draws the same current across most of the useful voltage range for a given Output Power, i.e. at 5 Watts, the FT817 draws 1.9 Amps, typically, no matter whether the Supply Voltage is 9.6 Volts or 13.8 Volts.. So at the higher voltages, you are dissipating un-necessary power inside the radio (8 Watts more from 9.6 to 13.8 Volts.)……'

The circuit uses a D.P.D.T. switch to switch the power supply between '<10.5 V0lts' and 'OFF' and '>10.5 Volts' This circuit is not completely automatic, the internal battery should always be charged when going out and operating battery-portable. At '>10.5 Volts', the voltage regulator will 'cap' the Output Voltage at approximately 9.6 Volts.

A slightly modified copy of the original circuit is attached (as the voltage regulator shown in the Schematic is 5 Amp, a heatsink is not necessary for the actual circuit built). Double-fusing has also been included; this inclusion can be a matter of personal choice.

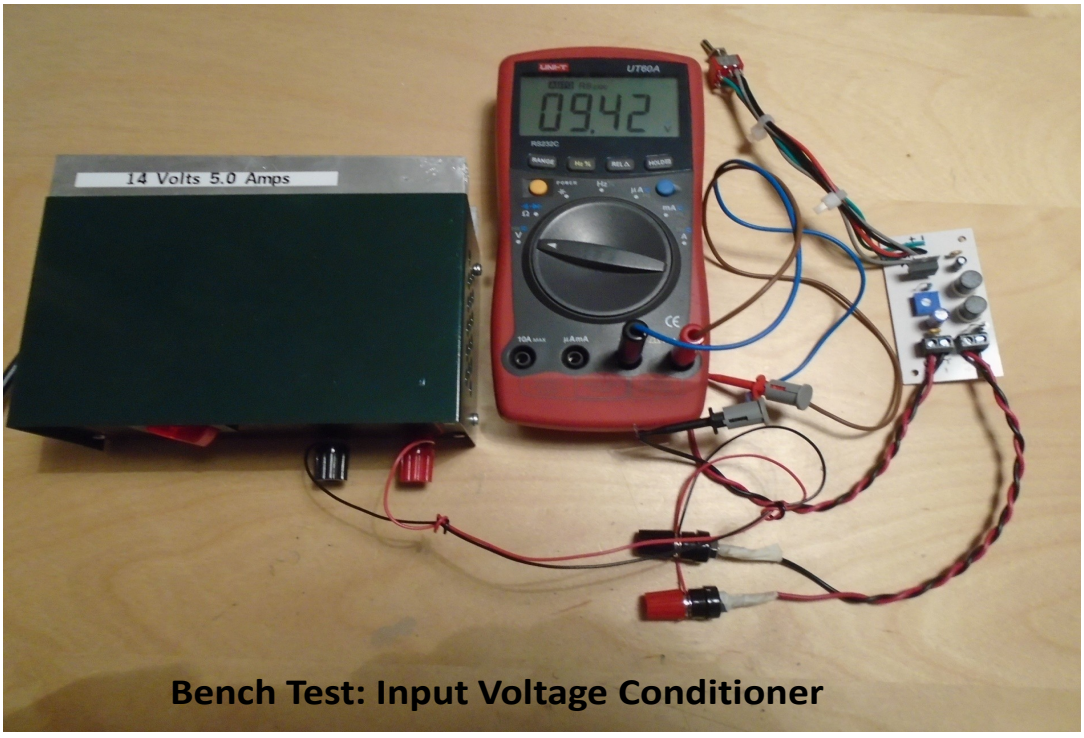
Single Fusing

A single fuse in the Phase Conductor provides protection for:
Phase-to-Neutral {Pole-to-pole}.
Phase-to-Ground.

Double Fusing

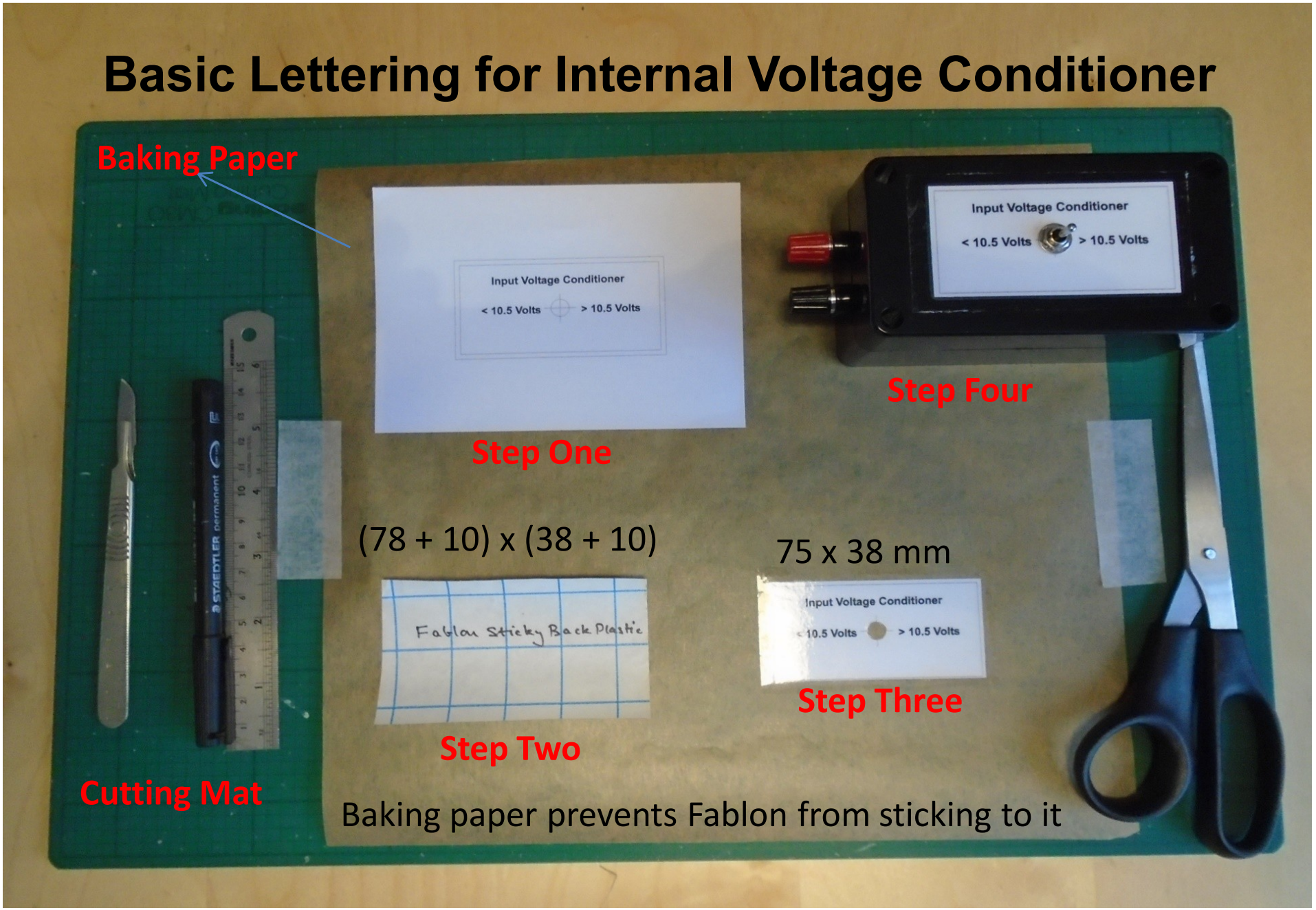
Double fusing protects against both of the above faults. Double fusing ***also*** *protects against polarity reversal on the supply side.* Two plug-in 3.15 Amp slow–blow fuses are used on the supply side.

FT817ND Input Voltage Conditioner Circuit Diagram attached !



Bench Test: Input Voltage Conditioner

Basic Lettering for Internal Voltage Conditioner



From the Chairmum

November 2016

Firstly I would like to thank all those that helped to make the Surplus Equipment Sale such a success, with the raffle and the food and drink.

In the magazine you will find a write up that should have a Circuit Diagram with it, due to technical difficulties this has had to be sent out as separate item. Either that or I will be wearing a wig next time, due to the problems trying to place it into the publisher and size the document!!!!!!

Please remember that on the 2nd of December we have our Christmas Quiz with Mulled Wine and Mince Pies. Following on from that we have our Christmas Meal at Singing Hills Golf Course on 9th December so the club house will be closed.

The last meeting of the year is 16th December and that is a Table Top Sale.

If you have or know of anybody that could give us a talk, please contact Programme Secretary - Sue Davis G6YPY@msars.org.uk

Don't forget that you are welcome to give a talk yourself or show a DVD of something that you feel the others would be interested in.

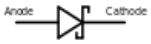
73

Stella M6ZRJ

MSARS Chairmum

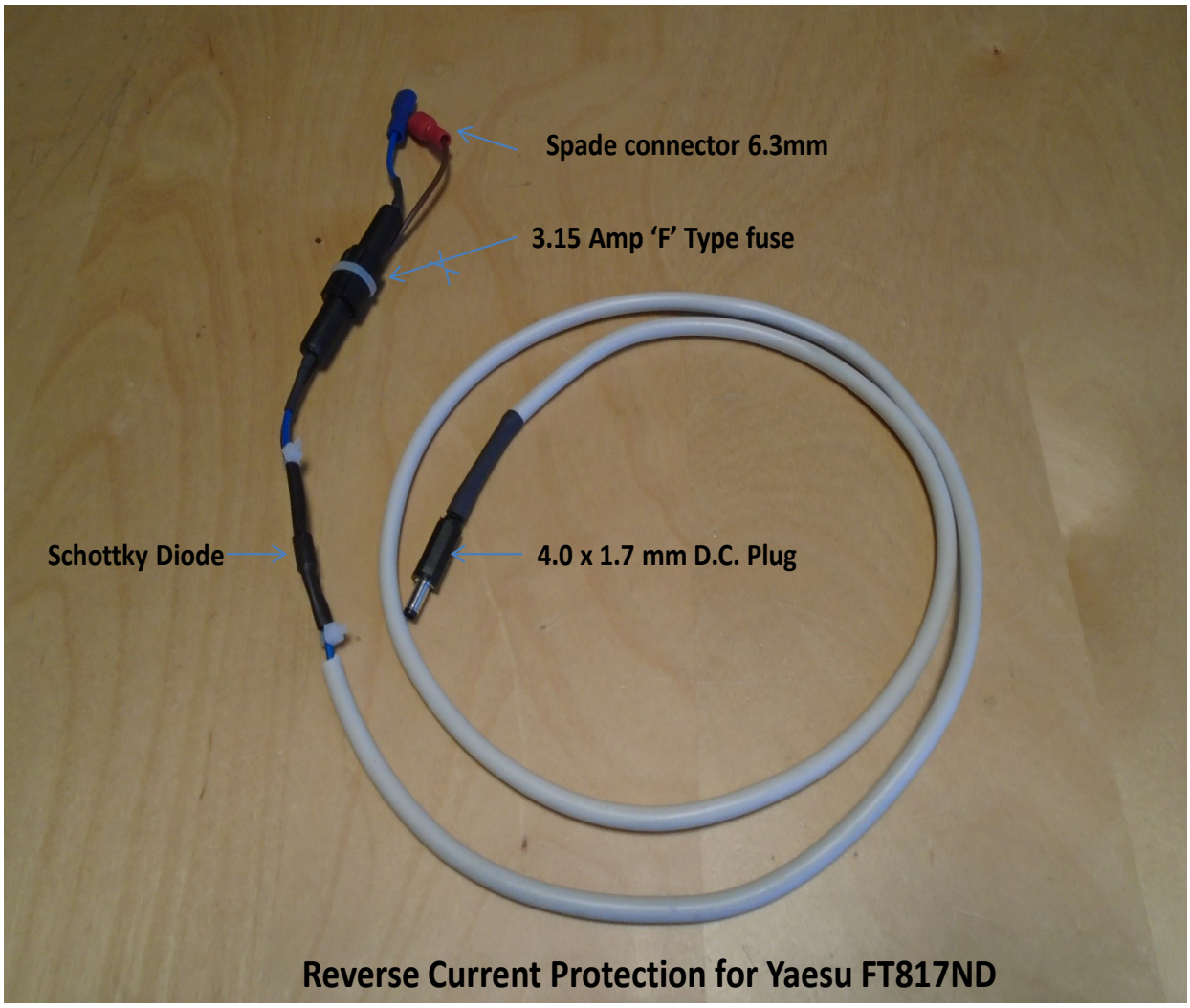
chairwoman@msars.org.uk

Reverse Current Protection for the Yaesu FT817ND in the Field



One of the uses of Schottky Diodes is to provide reverse current protection; this being particularly important when the radio is connected to a battery in the field. The one used for the above power lead is a 1N5829TSC (3 Amp), and appropriate for the current requirements of the radio.

Schottky Diodes are used in many applications; they offer a number of advantages i.e. Low Turn-on Voltage (0.2 to 0.3 Volts, as against 0.6 to 0.7 Volts for a standard Silicon Diode), Fast Recovery Time and Low Junction Capacitance.



Reverse Current Protection for Yaesu FT817ND

Diary Dates December 2016 and January 2017

02–Dec Friday Downstairs Christmas Quiz with Mulled Wine and Mince Pies

09-Dec Friday **OUT Christmas Meal at Singing Hills Golf Course**

16-Dec Friday Radio Night & Table Top Sale

23-Dec Friday **CLOSED**

30-Dec Friday **CLOSED**

06-Jan Friday **On Air Night'**

13-Jan Friday Downstairs **Meet the Committee**

20-Jan Friday Radio Night

This is your Magazine-Don't Forget to Keep Sending Copy

I am hoping to go to print each month. For this I need copy from any one of you however small and it **may or may not be** radio related.

Request for copy around 6th—10th with copy to me nominally by the 15th of each month.

If I get no copy there will be no MSM, it is as simple as that.

73

Stella, Editor of MSM

Amateur Radio Insurance
General Information

South West Broking Ltd Insurance Brokers

South West Broking Ltd is pleased to offer insurance for radio amateurs.

Cover

Insurance is available to individuals, clubs and Raynet Groups

Cover is provided for "All Risks" of loss or damage to your amateur radio equipment including masts, aerials and ancillary equipment by theft, water damage, lightning strike and other accidental damage.

- Cover at your home or club house.
- Anywhere in the United Kingdom.
- Anywhere in the world.

Basis of Claims Settlement

- New for Old

Significant Exceptions and Limitations

- Wear and tear, gradual deterioration, frost, faulty or defective design or materials or workmanship.
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- Losses from unattended vehicles unless certain conditions are met.
- An excess of £50 applies if you have cover restricted to your premises only but this is increased to £75 if you have selected cover for anywhere in Great Britain or worldwide. In respect of outdoor antennae and masts, you will be responsible for the first £250 each and every loss.

Third Party Personal Liability

Personal Liability providing cover against injury to third parties or damage to their property arising from your negligence is included as standard whilst you are engaged in any amateur radio activities.

For further information, please contact Julian Dent
Telephone: 01454 806503
Email: julian@southwestbroking.co.uk
www.southwestbroking.co.uk

Scan here for more information

www.msars.org.uk

Mid Sussex Amateur Radio Society 2015— 2016

President	Ken Gibson	G3WYN	01444 412420
Vice President	Mike Pollock	G8KMP	01444 244953
Chairman	Stella Rogers	M6ZRJ	01273 844511
Secretary	Alan Cragg	G8YKV	01273 844511
Treasurer	Sue Allen	2E0ZYL	01798 815286
Programme Secretary	Sue Davis	G6YPY	01273 845103
Vice Chairman	Kim Newland	G7AIE	07787 770059
Shack Manager	Chris Davis	M6FOW	
Committee Member	Dennis Conway	M0YDC	07476 301044
QSL Manager	Rob Simpson	2E0KDT	07730 209539
Course Administrator	Adrian Allen	M0TCD	01798 815286
Lead Instructor	Chris Saunders	G4ZCS	

Email (call sign)@msars.org.uk
(This will only work from a members email address registered with the society)

Our normal "QTH" is Cyprus Hall
Burgess Hill
Sat Nav
RH15 8DX

We meet most Fridays in the Millfield Suite
7.30pm till 10.00

Postal Address is:
MSARS
Mr A Cragg
28 Damian Way
Keymer
Hassocks
West Sussex
BN6 8BJ

Newsletter—Editor Stella Rogers M6ZRJ
All articles and photographs are the copyright of the authors. Contributions are invited from Society members and should be sent to newsletter@msars.org.uk
Otherwise you can use Snail mail to my address at:
28 Damian Way,
Keymer,
Hassocks,
West Sussex,
BN6 8BJ.

If you have some great old pics that need to be aired I can share them with the rest of the club.
Best Wishes
Stella