



Western Suburbs Radio Club Inc.

July 2012 Newsletter

ZL1AC, Branch 03 NZART 3000 Great North Road New Lynn,
 PO Box 15-122 New Lynn WAITAKERE 0640
 President: Ian Sangster ZL1RCA, Vice President – Grant Manning ZL1GSM.
 Secretary: Roy Milam ZL1WI. Newsletter Editor – John Neill ZL1NE
 VHF Club Net Wednesday 07:30pm 146.525 MHz,
 HF Club Net Fridays 07:30pm 3.650 MHz
 Website <http://www.qsl.net/zl1ac>

Club Calendar

Saturday	28 th	July	Committee Meeting – 9:00 am
Saturday	28 th	July	Club Meeting 10:00 am – Programme to be Confirmed
Saturday	25 th	August	Committee Meeting – 9:00am
Saturday	25 th	August	Club Meeting 10:00am - Marine Navigation by ZL1JT
Saturday	22 th	September	Committee Meeting – 9:00am
Saturday	22 th	September	Club Meeting 10:00am – Programme to be Confirmed
Saturday	13 th	October	WSRC Used Equipment Sale Date to be confirmed
Saturday	27 th	October	Committee Meeting – 9:00am
Saturday	27 th	October	Club Meeting 10am
Saturday	24 th	November	Committee Meeting – 9:00am
Saturday	24 th	November	Club Meeting 10:00am – Programme to be Confirmed
Wednesday	12 th	December	Christmas Dinner at the New Lynn RSA 6:30pm

July Meeting

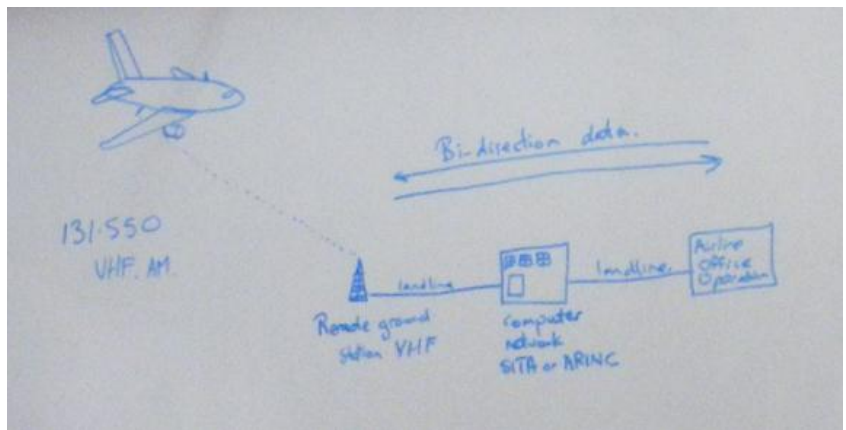
The July meeting on the 28th will be a combined meeting with the Radio DX League. An occasion to compare notes with a group very interested in radio like ourselves but with a slightly different twist.

June Meeting

At the June meeting Ian ZL1RCA gave a presentation on Aircraft Communications Addressing and Reporting System (ACARS). Thanks Ian for an informative talk.



Ian telling all about ACARS



The basis of the ACARS system.

Club Nets

VHF Net 146.525 MHz 7:30pm every Wednesday, HF Net 3650 KHz +/- QRM/QRN 7:30pm every Friday. All are welcome to check in on the nets. The full HF Net Roster can be found on <http://www.qsl.net/zl1ac/wsrc-hf-roster.html>

27-Jul-12	ZL1WI	Roy
3-Aug-12	ZL1NE	John
10-Aug-12	ZL1RCA	Ian
17-Aug-12	ZL1MW	Brian
24-Aug-12	ZL1ACZ	Barry
31-Aug-12	ZL1WI	Roy
7-Sep-12	ZL1NE	John
14-Sep-12	ZL1RCA	Ian
21-Sep-12	ZL1MW	Brian
28-Sep-12	ZL1ACZ	Barry

Equivalent Series Resistance Meter

By Eric Richards

Anybody serious about electronic repair today should think seriously about having an ESR meter (Equivalent Series Resistance) in with their other test equipment as it certainly helps with making some of those repairs easier. Just like batteries have a phantom 'internal series resistance' so do electrolytics. As the electrolytic ages the ESR goes up to a point when say an old Video Cassette Recorder (VCR) failed to power up after a power failure, the reason being if it is powered by a switch mode power supply, over the years the heat generated in the power supply has added to the aging of the electrolytic and pushed the ESR up so high the VCR will not switch back on when the mains power is restored. As a lot of people have found out the hard way when they unplugged their VCR to take it into a workshop for a head clean, only to find it was dead when it was powered up at their local electronic repair center.

I first became aware of ESR meters in early 1996 when an Australian Electronics Technician from Sydney Bob Parker designed and made a two digit auto ranging ESR meter and had his project published in an 'Electronics Australia' magazine. You can read about the MK 2 version published in a Silicon Chip magazine March/April 2004 from Bobs web site (URL given at the bottom of the page). This meter not only measures ESR of electrolytics but could also check resistors from 0.01 Ohms to 99 Ohms, however the contact resistance of the clip test leads might upset the reading if one tried to measure a resistor getting as low or close to 0.01 Ohms. The meter is easy calibrated for close to 0.00 Ohms when the test leads are shorted together and the on/off button is pressed.

My MK1 version has served me well over the years and still alive day when other technicians have gone to check electrolytics that have retained some of their operating voltage, and the charge has destroyed their meter. So the first thing to remember is make sure all the electrolytics have been shorted or discharged, the next step is to measure the ESR of the capacitor and compare it with a table or graph printed on the front panel of the meter, it might seem a bit of a nuisance but when you consider it speeds up the time on repair, it is worth it, and might even save you buying a part that does not need to be replaced.

Just to give an example a 1 μ fd 35V electrolytic has a ESR of 14 Ohms (or at least it does on this meter) to 20 Ohms for a 1 μ fd 250 Volt electrolytic, so if you check a 1 μ fd 35V electrolytic and get a reading of say 40 Ohms then it is well worth replacing and any other electrolytics with high ESR reading, then turn on your device you are repairing to see if the fault has disappears. The ESR values have fallen a little since they made electrolytics in 1995 so the MK2 version has slightly lower figures. As we should all know as you add capacitors in parallel, the capacitance gets added together, and so does the ESR reduce as capacitance increases just like putting resistors in parallel.

While I don't need to tell you the ESR meter is impossible to discriminate between the electrolytic and if there are any surrounding low value resistors you can rest easy knowing the waveform used to get the ESR value is less than 100mV so that should stop semiconductors from conducting.

In the photo, it is measuring a 2200 μ fd 16V at 0.04 Ohms, the table on this meter gives 0.09 Ohms at 1000 μ fd 16V and 0.20 Ohms for 4700 μ fd 16V, umm did I try and tell you the ESR falls as the capacitance rises? Whatever, anyway the table error has been corrected on the MK2 version. Never mind I still think Bob Parker is a great chap for the work he put into his ESR meter.

If you want to read more, you could download k7214.pdf at Bob Parker's web site <http://members.ozemail.com.au/~bobpar/esrmeter.htm>

Ed:- Thanks Eric for a most informative article.

Mid-winter Dinner

This was held at the New Lynn RSA on Wednesday 11th July. There was a good turnout of club members who enjoyed a great meal and friendly discussion on all manner of topics.

AREC

There is nothing the report on the AREC front this month. Some members helped with the Rally of New Zealand recently.

Club Fees

Club Fees are now due. Most Club Members have paid but there are a few outstanding still. If you have not yet paid please send your payment to:

Western Suburbs Radio Club
3000 Great North Road
PO Box 15-122
New Lynn
WAITAKERE 0640

Or pay the Secretary at the next meeting.

NAME _____

Please Tick	Standard Membership	<input type="checkbox"/>	\$30.00
	Family Membership	<input type="checkbox"/>	\$35.00
	Rural Membership	<input type="checkbox"/>	\$10.00
	Total Paid	_____	_____

