



Western Suburbs Radio Club Inc.

April 2019 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: Andrew Mitchell, ZL1AF, Treasurer Merv Thomas ZL1SK,
 Newsletter Editor – John Neill ZL1NE.
 VHF Club Net Wednesday 08:30pm 146.525 MHz,
 HF Club Net Fridays 08:00pm 3.650 MHz
 Website <http://www.amateurradio.co.nz/>

Club Calendar 2019

Thursday	25 th	April	Anzac Day
Saturday	27 th	April	Committee Meeting 9:00am
Saturday	27 th	April	Club Meeting 10:00am – Annual General Meeting
Wednesday	1 st	May	Informal Meeting at the Clubrooms 9:30am
Sunday	12 th	May	Mother's Day
Wednesday	15 th	May	Informal Meeting at the Clubrooms 9:30am
Saturday	25 th	May	Committee Meeting 9:00am
Saturday	25 th	May	Club Meeting 10:00am – Topic to be Announced
Wednesday	29 th	May	Informal Meeting at the Clubrooms 9:30am
Friday	31 st	May	NZART Conference
Saturday	1 st	June	NZART Conference
Sunday	2 nd	June	NZART Conference
Monday	3 rd	June	Queens Birthday
Wednesday	5 th	June	Informal Meeting at the Clubrooms 9:30am
Wednesday	12 th	June	Mid-winter Dinner – Date and Venue to be confirmed
Wednesday	19 th	June	Informal Meeting at the Clubrooms 9:30am
Saturday	22 nd	June	Committee Meeting 9:00am
Saturday	22 nd	June	Club Meeting 10:00am – Topic to be Announced
Wednesday	3 rd	July	Informal Meeting at the Clubrooms 9:30am
Wednesday	17 th	July	Informal Meeting at the Clubrooms 9:30am
Saturday	27 th	July	Committee Meeting 9:00am
Saturday	27 th	July	Club Meeting 10:00am – Topic to be Announced
Wednesday	31 st	July	Informal Meeting at the Clubrooms 9:30am
Wednesday	7 th	August	Informal Meeting at the Clubrooms 9:30am
Wednesday	21 st	August	Informal Meeting at the Clubrooms 9:30am
Saturday	24 th	August	Committee Meeting 9:00am
Saturday	24 th	August	Club Meeting 10:00am – Topic to be Announced
Sunday	1 st	September	Fathers Day
Wednesday	4 th	September	Informal Meeting at the Clubrooms 9:30am
Wednesday	18 th	September	Informal Meeting at the Clubrooms 9:30am
Saturday	28 th	September	Committee Meeting 9:00am
Saturday	28 th	September	Club Meeting 10:00am – Topic to be Announced
Wednesday	2 nd	October	Informal Meeting at the Clubrooms 9:30am
Wednesday	16 th	October	Informal Meeting at the Clubrooms 9:30am
Saturday	26 th	October	Committee Meeting 9:00am
Saturday	26 th	October	Club Meeting 10:00am – Topic to be Announced
Monday	28 th	October	Labour Day
Wednesday	30 th	October	Informal Meeting at the Clubrooms 9:30am
Saturday	2 nd	November	WSRC Used Equipment Sale – Date and Venue to be confirmed
Wednesday	6 th	November	Informal Meeting at the Clubrooms 9:30am
Wednesday	20 th	November	Informal Meeting at the Clubrooms 9:30am

Saturday	23 rd	November	Committee Meeting 9:00am
Saturday	23 rd	November	Club Meeting 10:00am – Topic to be Announced
Wednesday	4 th	December	Informal Meeting at the Clubrooms 9:30am
Wednesday	11 th	December	Christmas Dinner – Date and Venue to be confirmed
Wednesday	18 th	December	Informal Meeting at the Clubrooms 9:30am
Tuesday	24 th	December	Christmas Eve
Wednesday	25 th	December	Christmas Day
Thursday	26 th	December	Boxing Day
Tuesday	31 st	December	New Year's Eve
2020			
Wednesday	1 st	January	New Year's Day

Meeting Agendas

If you have a topic that you would like to present at a club meeting, could you please contact the President or Vice President prior to meetings so that the item can be programmed for a future date.

April Meeting

The April meeting on Saturday the 27th will be the Annual General Meeting and voting on NZART Conference Remits. The agenda for this meeting is later in this newsletter.

March Meeting

Ian ZL1BYI gave us a talk on brewing beer. Thank you Ian for a very informative talk on this subject.

Informal Wednesday Meetings

These are continuing every first, third and fifth (if there is one) Wednesdays of the month. Attendance is good so do come along for a relaxing morning chat.

Club Nets

VHF Net 146.525 MHz 8:30pm every Wednesday.

26-Apr-19	ZL1NE	John
3-May-19	ZL1AF	Andrew
10-May-19	ZL1RCA	Ian
17-May-19	ZL1LK	Roy
24-May-19	ZL1BAK	Graeme
31-May-19	ZL1NE	John
7-Jun-19	ZL1AF	Andrew
14-Jun-19	ZL1RCA	Ian
21-Jun-19	ZL1LK	Roy
28-Jun-19	ZL1BAK	Graeme

HF Net 3.650 MHz at 8:00pm every Friday.
+/-10 KHz if QRM/QRN is a problem.

All are welcome to check in on the nets.

The HF Net roster is opposite. The full HF Net Roster can be found on: <http://www.amateurradio.co.nz/>

Info On Home Assembly Lithium Battery Packs

Useful information can be found at the following websites in building battery packs.

A good way to put together Lipo battery packs without welding. It is also easier to solve individual battery issues. <https://vruzend.com/>

A good article here with info on the battery management system that seems to be important for good results. <http://www.ebikeschool.com/how-to-build-a-diy-electric-bicycle-lithium-battery-from-18650-cells/>

Annual General Meeting

The Annual General Meeting will be held on Saturday the 27th April. The meeting will commence at 10am. The agenda for this meeting is as follows:

Agenda

- 1 Presidents Introduction
- 2 Apologies
- 3 Minutes of 2018 AGM
- 4 Treasurers Report
- 5 AREC Report
- 6 Presidents Report
- 7 Election of Officers
- 8 General Business

Election of Officers

- 1 President
- 2 Vice President
- 3 Treasurer
- 4 Secretary
- 5 Four Committee Members
- 6 Auditor of Accounts
- 7 Newsletter Editor
- 8 AREC Section Leader
- 9 AREC Section Deputy Leader

The meeting will commence with morning tea or coffee as usual and the AGM will start a little after 10:00 am.

Club Fees

Club fees are now due. Pay by internet banking if you can. The Club's Bank Account is **020184-0030318-00**. If paying online please add your "Call Sign" and the words "Club Fees" as a reference. If you require a receipt, the Treasurer will send your receipt to your email address or hand it to you at the next meeting. If you require an emailed, receipt then please request one with an email to Merv at: mervthomasmusic@gmail.com

Alternatively, use the payment slip at the end of this newsletter if you prefer to pay in cash or by cheque.

The fees are as follows:

- Standard Membership \$30.00
- Family Membership \$35.00
- Rural Membership \$10.00

Please note that the fees are reviewed each year at the Annual General Meeting. Paying before the AGM may save you a small amount if the fees should be adjusted upwards.

Merv would like as many as possible to pay their subscription using internet banking to make life easier for him at the AGM.

Mystery UHF Connectors – Hal N4GG

The following article is reproduced courtesy of the Potomac Valley Radio Club

(PVRC Editor's note: this piece is part of Hal N4GG's "Around the Shack" monthly series and has previously run in the FLARC and SEDXC newsletters)

"You get what you pay for" is certainly true when it comes to UHF connectors, including PL-259s, SO-239s, UG inserts, barrels, etc. Every hamfest seems to have at least one vendor selling "mystery" UHF connectors. Often these are found in the flea market, but they are sometimes sold inside by reputable vendors. Mystery PL-259s cost as little as \$1.

What are you buying when you spend \$1 for a PL-259? Nobody knows. Even the seller in the flea market doesn't know – he just knows its "great stuff." Without a doubt it's not.

PL-259s are simple enough, right? What could go wrong? A lot can go wrong. PL-259s have four parts: The outer sleeve called the "knurled nut," the connector body, the insulator/dielectric and the centre pin. All four components can be compromised to the point of making a bargain connector useless.

Here are frequently encountered problems:

Finish – Bargain connectors sometimes have a finish you can't solder to. The non-solderable ones often have a chrome-like appearance, but some that look good are in fact impossible to solder to.

Threading – The internal threads at the tail of a PL-259 are there to accept a UG-style insert, used to narrow the connector barrel to accept smaller-diameter coax such as RG-8X or RG-59. The threads on a PL-259 and/or a UG insert may be metric! Some bargain PL-259s will not accept an English thread (the US standard) UG insert. The knurled nut may also be metric.

Dielectric – Good connectors use quality phenolic or Teflon insulation between the centre pin and the body. Bargain connectors might use anything, including materials like polystyrene, which will melt when the centre pin is soldered.

Centre pin diameter: This is one of the most common and insidious problems in mystery PL-259s. The centre pin OD is often slightly smaller than it should be, and it's hard to notice. The centre pin connection between a PL-259 and an SO-239 or barrel connector depends on correct diameters of the pin on the male plug and the mating fingers on the female socket. The fingers on the SO-239 socket must be made of the proper spring material (beryllium copper).

In addition to mystery SO-239s in which the centre pin spring tension relaxes over time and/or temperature, the annulus flange that mates to a PL-259 may only have four indentations ("Four cuts" or "Four V" in connector lingo) to match up with the nipples on the body of the male connector. The SO-239 and barrel connectors I prefer have indentations all the way around the circumference ("Sixteen cuts" or "Sixteen V"). It is nearly impossible to mis-mate a quality PL-259 to a sixteen cut SO-239 or barrel connector.

With poor quality components, PL-259-to-SO-239 connections can become intermittent over time. They also become temperature sensitive when used outdoors. At N4GG I have had to replace several mystery PL-259s in the back yard that would be fine most of the time, and an open circuit on a cold day. I have had A LOT of intermittent linear amplifiers on the repair bench at N4GG. One particular amp manufacturer uses dismal quality SO-239s for the RF input and output connections and the spring

tension is so bad – even when brand new – that they simply have to be replaced. You can tell bad ones quickly – slide a PL-259 into an SO-239. It should fit snugly. If it doesn't, one side or both sides are most likely junk.

As bad as mystery PL-259 and SO-239 connectors can be, there is something worse. The really bad actors are Tee and right-angle (elbow) UHF adapters. Take a close look at what has to happen inside these adapters. The centre conductor has to make a right angle turn inside the shell. How do they do that? In poor adapters the right-angle connection is done with a spring contact, and these do not hold up – particularly at QRO power. Quality Tee and right-angle adapters have internal conductors that are tapped and threaded. The male side centre conductor is screwed into the female side(s) within the body at the right-angle junction. Adapters made this way are very reliable.

How can we tell the good connectors from the junk? Price, for one. If the price is too good to be true, it probably is. Finish is another tip-off. PL-259s with good silver plating have a dull appearance. Last but not least is the fact that all mystery UHF connectors have one thing in common: Mystery! Good connectors have a part number and the manufacturers name stamped onto them. You can look up the connector's specifications if it's marked. Examples of this are connectors made by Amphenol, all of which have part numbers stamped onto or into the connector body. Old-timers are fond of saying: "Amphenol or not at all," although there are now other suppliers offering quality connectors. For the difference of a dollar or two, "mystery" UHF connectors are a very poor investment.

Note: The above is paraphrased from an article I wrote for the March/April 2017 issue of NCJ magazine, and some of the material appears in the 20th edition of the ARRL Handbook. It is used here with permission of ARRL. Sadly, there has been a new development since I wrote this in 2017.

My advice in 2017 was to look for PL-259s, SO-239s, etc. that are marked. "Amphenol or not at all" has always been a safe bet and all of their connectors are marked. They are worth an extra dollar or two. Some Amphenol PL-259s come in a sealed bag filled with dry nitrogen. NOS (new-old-stock) Amphenol connectors in sealed bags can still be found with a little looking. Ones from the 1960s and 1970s are as-new as they come out of the bag.

The bad news: Beginning in 2017 a new offering of rogue UHF connectors appeared at the Dayton hamfest - ones made in China and **marked** Amphenol. They **are not** Amphenol and they fall squarely in the junk category.

How to identify a phony "Amphenol" PL-259:

1. With a wet finger you can rub the marking off. I guess junk connectors deserve junk ink!
2. The centre pin on an authentic Amphenol PL-259 is moulded into the centre insulator. Look inside one of the phonies and you will see the inside-the-barrel end of the centre pin is square, and obviously crimped to the centre insulator. You can sometimes twist the centre pin with your fingers.
3. The price is too low.

In the original article I also mentioned there are some perfectly good UHF connectors that are not branded, but, also, not mysterious. Two sources for excellent UHF connectors that are manufactured specifically for the houses that sell them are:

- "MAX-GAIN Systems, Marietta, GA. WWW.MGS4U.COM Known for fiberglass poles and push-up masts, MAX-GAIN also sells a variety of UHF and other connectors. MAX-GAIN's PL-259s are silver plated brass with a high quality Teflon center insulator - that's as good as it gets.

- "[The RF Connection](#)" Gaithersburg, MD. In addition to their in-house UHF connectors, which are excellent, they carry Amphenol connectors and have a good stock of NOS Amphenol as well.

Both vendors' connectors are manufactured for them, to high-quality specifications. You can call either company and the principals can tell you everything there is to know - dielectric type, center pin ID and OD, plating, etc. There is no mystery involved!

One additional note: Given a choice, I avoid gold-plated UHF connectors. Gold does not tarnish and maintains its solder ability forever, but gold-plating is often found on mystery connectors and silver is a better conductor than gold.

It's the seemingly mundane parts '*Around the shack*' that cause a lot of problems!



Figure 1. An Amphenol PL-259 in an Amphenol bag. The bag and connector are both marked. You can't go wrong here.



Figure 2. Examples of Amphenol PL-259 connectors. The left one is marked in ink, the centre and right one have their markings stamped into the body. All carry both the name of the manufacturer and a part number. The inked PL-259 is an authentic Amphenol.



Figure 3. An Amphenol and an unmarked PL-259. The unmarked part was bought from MAX-GAIN and is known to be an excellent product.



Figure 4. An Amphenol UG insert. Note, the part number is stamped into the part and the finish is dull – it’s silver plated, top quality.



Figure 5. SO-239s. The one on the left is an old Amphenol that is clearly marked. The marks include the manufacturer, the type and the part number – there is zero mystery about what this is. The one on the right is a “mystery” connector. The old Amphenol fits tightly with a PL-259 and is perfectly serviceable. The nice shiny brand new one on the right is junk – a PL-259 slips into it so easily the connection is intermittent.

Club Fees

Club Fees are Now Due. Please send your payment to:

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

Or pay the Treasurer at the next meeting.

NAME _____

Callsign _____

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	_____

Alternatively, you may wish to transfer your payment directly to the club by means of electronic banking.

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