

QST

X T Y T H R E E

NEWSLETTER of *The New Zealand Association
of Radio Transmitters UPPER HUTT Branch 63 Inc.*

Clubrooms: UHCC
Park Street UPPER HUTT
P.O. Box 40 525
UPPER HUTT 6415

www.qsl.net/zl2vh/



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President: Mark ZL2UFI PH (H) 526 8446 PH (W) 238 3401
Mobile 021 100 3378 mark@foxtrot.co.nz

Vice President: Mark ZL2WOL

Secretary: Chris ZL4CDM

Treasurer: Gavin ZL2ACT

AREC: Morrie ZL2ADP Ph. 976 9022 mdvile@paradise.net.nz

Editor: Sean ZL2SC Ph. 021 869007 zl2sc@tfp.org.nz

Deputy Editor: John ZL2FRG Ph. 972 7131 zl2frg@paradise.net.nz

President's Report

Hi everyone... the end of the Super 14 is almost upon us (go the Crusaders...), as well as the shortest day in June not too far away, the colder days are now here.

Over the Queens Birthday weekend I will be down in Dunedin at the NZART Conference (next years one is Napier/Hastings). It will be an interesting event as the number of re-mits, discussions on the Foundation Licence, and the like... no doubt there will some interest in these areas.

A report from the meeting will probably follow in the next newsletter. I believe I am the only person from the club attending this year, so will take on the role of branch delegate as well.

As I have been busy on non radio matters recently not a great deal more to add this month, so hope to catch up with all at the next Friday meeting before or after my return down south.

So until next month, good DX and 73's.

Mark ZL2UFI



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Club HF Net 3.715 MHz every Tuesday at 0800 UTC

AREC REPORT: National Communications Exercise

AREC

On Sunday 4th May at 0600hz, seven operators from Branch 63 took part in the AREC National Communications Exercise.

Chris ZL4CDM ran the Section Station ZK8ELA to deal with the traffic from the Outpost Stations in the Upper Valley via the Climie 730 and 860 Repeaters.
The Outpost Stations were John ZL2UX, Gavin ZL2ACT, Jentz ZL2TJT and Mark ZL2UFI.

Eric ZL2SET handled traffic on the Upper Hutt District Station ZK8ELZ via Climie 730 from four Section Stations.
These were Hutt Valley ZK8EYA, Wairarapa ZK8EJA, Upper Hutt ZK8ELA and Titahi Bay ZK8ETA.

Morrie ZL2ADP forwarded the summarised traffic from ZK8ELZ to the Command Station ZK6R in Auckland on the hour using 3.900 USB.

The morning exercise ran quite smoothly with 34 messages being handled up to 0934hz when the final reports were requested by and sent through to Auckland. We were then stood down.

Thanks to all those who participated.
Morrie ZL2ADP/ZK8EL

AREC REPORT: Kapi Mana

Fine but cool conditions were encountered by the 80 riders who participated in Round 3 of the Club Championships held at the Bulls Run Road track on Sunday 20th April.

There were quite a few spills during the day with only one rider requiring medical attention.

Gavin ZL2ACT, John ZL2UX and Morrie ZL2ADP turned out to do the communications, traffic and flag marshalling.

The net frequency used for the day was 146.500 with no problems encountered.
Morrie ZK8EL

BRANCH HF NET

The Branch HF Net is now on 3.715 MHz every Tuesday at 0800 UTC

ZL2VH

The Branch 63 Net Frequency has now changed to **3.715 Mhz**. The net is held every Tuesday at 0800 UTC. Hopefully the high noise levels encountered on 3.645 will be lower on the new frequency.

Morrie, ZL2ADP

Crimp On PL-259 Connectors

Many hams have varying degrees of success when attempting to install the revered PL-259 solder on connector. Often these attempts end with melted coax and connector and a poor connection that will fail over time. I have installed thousands of these connectors and I must admit that when things go right I consider myself lucky.

Recently a crop of crimp on connectors and crimp tools have become available that have made the process much easier. These connectors greatly ease connector assembly and the tools are readily available to the average ham. Pricing on the connectors is about the same as a Teflon PL-259 and the connection and finished product is far superior. Some previous crimp on connectors crimped a solder on PL-259 and those connectors were poor at best. That is not the case with the RF Industries connectors. These connectors were designed from the ground up to be a crimp on connector.

Prep tools are available to prep the coax to the specified length so all that needs to be done is slip the new connector over the RG-8, RG-213 or LMR-400 coax and then crimp the end piece (Center Conductor) and the ferrule over the outer shield. The end result is a coax and connector that is superior to any solder on product. I know there are the old timers who scoff at a crimp on connector but in the cell phone industry we have found that crimp on connectors have a much lower failure rate than any field solder on connector. In addition the pull strength is much higher because the coax crimp is a much stronger mechanical connection than soldering through four tiny holes found on the typical PL-259 connector body.

The end product looks like what you would expect from a commercial product. This is depicted in the photo below:



"N" Crimp Connector

PL-259 Crimp Connector

**PL-259 Solder on
Connector**

In each case the crimp on product uses a ferrule that crimps to not only the outer conductor shield but also to the plastic jacket. -- This method makes a connection with superior pull and flex strength.

In tests I have found the pull strength of the "N" and PL-259 crimp on connectors to handle over 120 lbs of pull. I could not test to failure because I ran out of weights to put in the horse bucket attached to the connector via a female connector.

The next test was to sweep the lines via my HP network analyzer. Just to keep things constant all the connectors were attached to LMR-400. At 900 MHz the Crimp on PL-259 had .1 dB more loss than the crimp on "N" connector. Not bad. The solder on connector had .23 dB of loss at 900 MHz when compared to the crimp on "N" connector. The cable lengths in each case were 24 inches. I know the conventional wisdom is don't use PL-259's above 2 meters but I saw nothing on the analyzer that said this was true below 1 GHz. Now that doesn't preclude a bad connector design or poor female connectors on the radio unit but I saw no reason not to use the PL-259 crimp on at UHF.

The benchmark PL-259 solder in my connector assembly was a Teflon Amphenol unit. This is a \$3.00 connector and comparable in cost with a crimp on connector.



"N" Crimp Connector

LMR-400 prepped for the crimp on "N"

LMR-400 prepped for the crimp PL-259

PL-259 Crimp Connector

Crimp tool cost is often what makes ham shy away from crimp on connectors. Some special crimp tools can cost well over \$400. This is not the case with all crimp tools. RF Industries makes a very economical unit that I have been using for over 8 years and it is holding up well. The crimp tool come in a plastic case that has cut outs for die sets to crimp a variety of connector types from miniature coax up to LMR-400.



The RF industries crimpers with the .429 die set for LMR-400 size coax and the coax prep tool from Times Microwave.

A different prep tool is needed for the PL-259 connector due to the longer length needed for the center conductor. Although if you are handy with an exacto blade knife and have plenty of band-aids you may forgo the prep tool.

Typical time to assemble a connector is about one minute. This process is so simple that I stopped using solder on connectors for some time ago.

You can buy the tools from a number of distributors. Part numbers and pricing from

Tessco distributors is shown below. The pricing shown is for small quantities.

Description	Tessco #	Price (US Dollars)
Crimp on PL-259 - LMR-400, RG-8, RG-213	35985	\$ 2.47
Crimp on "N" - LMR-400, RG-8, RG-213	14515	\$ 3.35
Crimper set for large and small coax RG-8/RG-58	54250	\$ 99.00
Prep tool for LMR-400, RG-8, RG-213 for "N"	59664	\$ 71.00
Prep tool for LMR-400, RG-8, RG-213 for PL-259	68254	\$ 101.00

Note the crimp on PL-259 from Tessco is an RF Industries Part Number RFU-507-ST and is available also from Talley, Hutton and Electro-Comm distributors. These distributors also sell the crimp and prep tools.

Typical quantity cable prices for LMR-400 equivalent coax can range from \$214 for a 500 foot reel from JEFA Technology to \$360 for a 500 foot reel of Time Mirror LMR-400 from Tessco.

Making your own cable assemblies can be a very cost effective alternative to buying pre built coax cables and jumpers. You can make up your own jumpers and feed assemblies in minutes. The cost of the tools is under \$250 and you will make back your tool investment very quickly.

[Michael S. Higgins \(K6AER\)](#)