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Branches of the Wireless Institute
of Australia, Tas. Division.

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It was mentioned the other day that there are several members who have no intention of renewing their WIA subscription. The reason they say is that they are not getting anything out of it. What a lot of ROT ! The very fact that they have a license and frequencies galore to operate on shows that they are getting something. You don't really think you would still have them without the WIA do you ?

What about some of the more obvious, like repeaters, satellites, Amateur Radio magazine, novice license, 10 words per minute Morse, the QSL bureau, equipment store, local branch activities (yes your local branch is the WIA) and last but by no means least, the recent reduction of import duties on Amateur transceivers, the saving on this one could be up to \$150.00, this alone would pay your WIA subscription for the next 10 years.

Ofcourse you don't have to be a member to benefit from about 90% of the Institutes work.

You don't have to work for a living either, you could live on the dole, but if we all look at it that way we will not have a WIA or an Amateur license or the dole for that matter.

Think about it , and when you have post that cheque to

PO BOX 150 Toorak, VIC. 3142

73 John VK7JV

MEETINGS

- Feb. 5th North West Branch, Lakins Hall, Ulverstone.
Feb. 8th Northern Branch, AEB rooms, High st.
Auction of donated equipment, proceeds to clubrooms.

YRCS

- Feb. 23rd room 38, Kings Meadows High School.

Contests

- Feb. 9th + 10th John Moyle Memorial National Field Day.

ARRL international DX contest
Phone, 1st full weekend in February and March
CW, 3rd full weekend in February and March

Northern Branch Notes by VK7KK

The success of the current V.H.F. season is reported elsewhere and no doubt Branch members had a ball on 6 and 2 metres. Kevin, VK7ZAH efforts in frequently contacting VK 3AKC twice daily on 144, 432 and 1296 for the Ross Hull Contest would have amassed him a large score.

Holidays have spread members overseas, interstate and around the Island. They have also brought a number of interstate visitors onto the Repeater channel. Those recalled are 2ZKG, 3EW, 3ZPX, 3CCX, 3ZGF, 5AS and 5UN .

Our December Branch meeting is now history and, despite adverse weather conditions, the barbeque was voted a success by the 30 adults attending. Thanks, Joe and Phill, for putting up with the invasion.

A second barbeque held on January 19th was not so well attended. Twenty adults and 8 children gathered at the same QTH. Publicity for this event would not have been so effective but it appears, perhaps, that such events aren't required. Or perhaps there aren't enough of them to create the need. Your opinions please OM's and YL's.

January's meeting was low in attendance as expected- 24 attended certainly enough to justify the meeting. Visitors Alan Holmes and Martin Greer were welcomed. The only correspondence was from one source (and I hate writing letters). A surprise was our low bank balance, \$170. No, it wasn't Kevin that treated himself to a New Zealand holiday; it just represents the large amount of gear on order for you either unsupplied or not paid for.

At least your money doesn't just sit in the bank. To yield more money available to place orders, if you owe the store for goods received PLEASE PAY UP before the fellows have to ask. If you've ordered repeater crystals you will be requested to pay before they are available. Remember VK7 RAA changes frequency on March 1.

A note to XYL's. Remind the OM to take that unnecessary junk to our March meeting. It will be out of your way and will be sold to benefit clubroom funds.

Pssst OM's . Don't worry too much. You can buy more, better gear. The money still goes to the clubhouse funds- all you need to do is get it past the XYL when you arrive home!

Two losses to the south are David, VK7CY, and Steve, VK7ZSF, who are continuing their engineering courses at the C.A.E.. Brian, VK7 ZBY, offered to take over from Steve the task of keeping the Tas. Bulletin in touch with Northern happenings. Associate Tony Polowy spent some time in hospital during the month; trust your're now fit again.

Congratulations to Trevor, VK7 TB, on his marriage to Carolyn. Despite it being their honeymoon he still managed to visit Robbie's disposal store while in Adelaide to pick up some goodies.

Daniel VK7 ZDA and Vicki also are to be congratulated on the birth of a daughter, Karen Louise. Surprised that the P.M.G. weren't concerned about Daniel; with that lack of second harmonic suppression.

Associate Peter Guenther also figured in the news. He represented the state at a Secondary Schools Mathematics Summer School in Sydney. Seems we have a future computer expert in our midst.

Perhaps its not a first but Peter VK 7PD's recent operation from Tasmania's highest point, Mt. Ossa, shouldn't go unrecorded. Peter used his Ken transceiver to use the Repeater from a number of high points during a recent walk through Cradle Mountain Reserve.

I propose to continue with a talking point each month until I run out of ideas or get clobbered. This month it's Breaking In. Some operating on H.F. bands during the holidays made me very aware of an increasing habit of busting in on a QSO. This thing seems to have crept in until it now appears to be accepted as normal.

It would appear that the day of the real amateur is fast going. First he goes commercial and now one could assume that he is getting too tired to call CQ.

As an alternative he listens around until he hears someone having a pleasant contact and the next thing- break- break.

So the net grows, by the time it gets back one has forgotten what it's about and excuses out thoroughly bored.

I have a feeling that part of the cause stems from all the awards on offer. There are occasions when a break in is excusable such as an urgent message or an old friend turns up, but even then I often wait until the QSO is finished. Maybe I'm not with it.

Now the news, and there isn't much. Without a January meeting and a gathering of the clan it is not easy to find out what goes on. However it seems that our members had a good Christmas and entered the New Year full of Wireless hope.

The best news has been the repeated VHF openings for over a month. Local operators on 2 and 6 have had a ball.

Also there have been odd DX openings on HF. During the holiday season several members have been on leave.

Graham 7ZAQ has been bushwalking in the hills, Ian 7ZIE has had a shack and housework break, self 7MX did some trout fishing and mountain travel, Harold 7MZ is at the time of writing holidaying in VK1,2,3 and 5. David 7MS has been awfully busy in the tomato house, and rumour has it that Les 7LH has been caravanning some place. Tony 7AX is anxiously awaiting the arrival of a new SSB rig for conventional, mobile and transverter use.

Maybe more news will be available after our next meeting on the

5th FEBRUARY

73 Max 7MX

4 dishes 6ft diameter arrived in Launceston this week.

Phyll Mrs 7ZGJ knew it was coming but didn't quite know what to expect after all the kitchen is full of them. Joe had pointed the dish in Juliana st out and told her that it was like the smaller one but she thought he was kidding.

Well now she knows he wasn't and that a dish used by a Ham is not quite the same as those in the kitchen.

Brian VK7RR is one of the few that never had the pleasure of having had a Z call, until he went to New Zealand for a holiday and found that 10 wpm Morse just isn't good enough over there. Brian was offered an on the spot examination at 12? wpm or a T call, he settled for the latter and used the call ZL4TCX during his stay.

Don't forget the Annual General Meeting and Dinner in Hobart on the 23rd of March. The dinner will be held in the Prince of Wales hotel in Hampden rd, Battery Point.

Book your accommodation now to avoid disappointment and let's have a Gigantic turn up from the North and North Western Branches

Poem composed by M.Ives VK7MX.

As recited by Max at the Tasmanian Jubilee Hamfest.

The Ham's a very busy bloke, he has no time to spare.
The shack is always pretty rough, with rubbish here and there.
This was the case around my joint, law and order was alack.
At least I found requirements, till the misses cleaned the shack.

I'll never know what prompted her, she'd never tried before.
I really thought she didn't care, or knew the unwritten law.
But undeterred she sailed right in, the rubbish to attack.
She really did a dreadful thing, when the misses cleaned the shack.

To gain access to most surfaces, she had to move most gear.
There was no harm in doing this, although results were queer.
Most things she left just where they were, and didn't put them back.
So everything was back to front, when the misses cleaned the shack.

You know how things are left around, to hand when needed most.
Mine finished up in boxes, and virtually were lost.
I couldn't find a dad-durn thing, components now I lack.
I should have run the nuisance in, when the misses cleaned the shack.

Condensers were resistors, inductors packed with pots.
I could have sold some boxes, as mixed assorted lots.
There was no law and order, apart from a panel rack.
I bit my nails and tore my hair, when the misses cleaned the shack.

An RF choke was needed, by 7ZAQ.
I said I know I got one, and you're welcome to it too.
I searched and looked and fumed and swore, my hair turned red to black.
It didn't help its missing still, since the misses cleaned the shack.

A mouse got in and made a nest, but I found the little pest.
It was very comfy in a box, but it went quickly west.
Now in that box was a piece of gear, I'd lost from sometime back.
That incident shows what I mean, when the misses cleaned the shack.

This happened many years ago, it was never done again.
The lecture lasted several months, the message was quite plain.
She's quite a dear at normal times, but she sure got off the track.
The day she went and went beserk, and cleaned the flaming shack.

**

FOR SALE

- | | |
|------------------------------------|------------|
| 1 - 4 El. 6 metre beam | \$10.00 |
| 1 - SSTV picture tube P29 phosphor | \$20.00 |
| 1 - 10 El. 2 metre beam | \$ 5.00 |
| 1 - 20 metre centre loaded whip. | best offer |

T. Briggs VK7TB, flat 2, 37 Woolven st. Launceston.

DX Notes by Den VK7DK

Well here it is February already, and time has passed quickly.

I would like to wish everyone lots of rare DX this year. Well quite a few things have happened in the last two months, but first I would like to deal with some comments on the last notes. I made mention of the possibility of Clipperton Isl. becoming active. Further to that, I have heard that a team of scientists are going to Clipperton and that there are 5 Hams amongst them, lets hope at least one of them is granted a license.

East Germany has been recognised as a separate country by the A.R.R.L. This will count as a separate country as from 17-9-'73, but it will be necessary to confirm West Germany after 17-9-'73 as well, to get both countries on your credit. So get cards from these two after the above date.

The VS9 mentioned last month had the license revoked due to the political situation.

To the keen night owls, 20 metres has been open to Europe from around midnight to 3am. On two occasions I stayed up to work them and found myself in great demand, but I am sure it was only because I was the only stupid idiot to be burning the late night oil.

In July 1972, VK3JW and some other Hams went on an expedition to Mellish Reef, there has been some controversy since, but this has now been resolved and it will be counted as a new country, but only on cards received after 1-4-'73, by the A.R.R.L. The VK bureau has been accepting.

Some rare DX stations active are as follows, XU1AA is sometimes on S.E.A. net, 5B4LL has been heard, VE3ALL/SU is said to be active as is YK1AA. It looks as if CR9 may be active again soon.

VP8MF in S.Orkneys was worked by a ZL on 14205 at 0600 Z. but even with my ears inside the speaker nothing was heard, well thats life. What used to be the Territory of Papua, and the Territory of New Guinea are now both the same country of T.P.N.G. and it is necessary to have a P29 QSL for DXCC.

73 Den VK7DK

VHF notes by Joe VK7ZGJ

The Ross Hull contest has now finished, we hope you have all enjoyed yourself, if so please send your log to the contest manager. It appears, from listening around, that when the Ross Hull finishes most VHF operators go QRT untill next year. There are still many sporadic E openings after the contest closes. During the contest all states were worked except VK9, ZL's were very elusive in VK7 although ZL3AAN was worked by several Launceston stations. Activity in the Launceston was very pleasing with approximately 12 stations being active during the contest. Temperature inversion across the Strait provided some very good contacts with VK3's, all bands from 6 metres to 1296 Mhz being usable. Kevin 7ZAH managed to work Ron 3AKC twice a day on 52, 144, 432 and 1296 Mhz on quite a few occasions. Daniel 7ZDA is now operational on 144, 432 and 1296Mhz, varactor triplers being used on the top two bands, his 6ft dish will be mounted on the front of his house and should be operational shortly. Wally 7ZAZ worked VK4FE on 144.1 Mhz as far as I know this was the only sporadic E contact in VK7 on this band, although there were many interstate contacts made on the mainland during peak sporadic E openings, VK5 to VK2 and VK3 to VK4 being the most common, I wont go into details as no doubt you'll read about this in other publications.

73 Joe VK7ZGJ

dB - dBm and all that jazz by Norm 7NR

What's a dB or dBm? That's a question often asked, we are not referring here to the cost of something (sic), but to the arbitrarily defined unit of gain or loss that came into general use about 1925. Primarily developed for use in the telephone industry it was named Bell in honour of Graham Bell the 600 ohm expert.

The ear is more sensitive to changes of volume at low sound levels, that is, it responds LOGARITHMICALLY to variations in sound intensity. Therefore any unit to express power gain or losses must also vary logarithmically in order to be practical.

The Bel is very convenient for comparing two power measurements on a logarithmic rather than a linear scale because several gains or losses can be merely added together to determine total gain or loss. Other methods would be too complicated.

The Bel is too large a unit however, dividing by 10 gives us the decibel or dB.

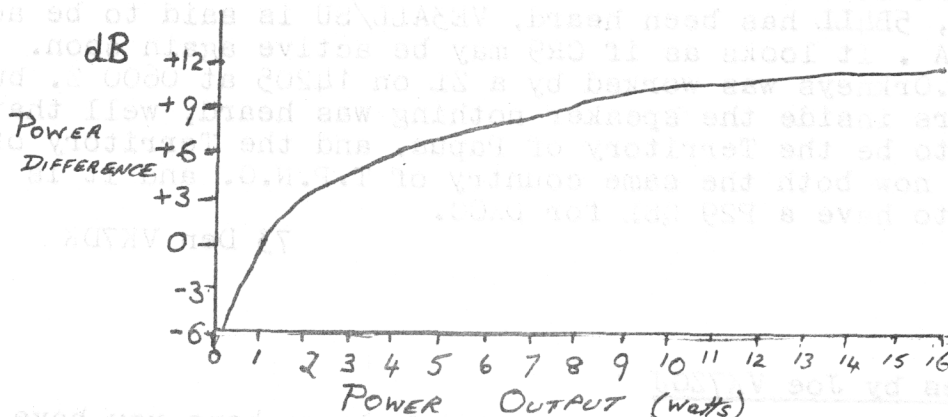
The number N of dB by which the power P.out exceeds the reference P.ref is defined by,

$$N(\text{in dB}) = 10 \log \frac{P_{\text{out}}}{P_{\text{ref}}}$$

N is negative when P.out is less than P.ref

The non linearity of logs can be seen by plotting it on a linear graph paper. see fig. L

Assume we are measuring the output power of a variable gain amplifier. The input power P.ref is held constant at 1 Watt, note that when P.out equals P.ref the power difference is 0 dB.



This non-linearity of logarithms can be observed by noting that doubling the power corresponds to a 3 dB change.

Going from 1 watt to 2 watt is a 3 dB change so is
from 4 watt to 8 watt.

6 dB change is a 4 times change.

Using the formula

Several useful conversions can be made;

1. Power Ratio to dB

a) Assume an amplifier with an input of 1 watt and an output of 2 watts. What is the gain in dB?

$$\text{Gain in dB} = 10 \log \frac{P_{\text{out}}}{P_{\text{in}}}$$

$$= 10 \log \frac{2}{1}$$

$$= 10 \log 2$$

from tables $\log 2 = 0.3$, so Gain = 3 dB

- b) Assume now that the same amplifier gives an output of 0.5 watt for the same input of 1 watt. What is the gain in dB ?

$$\begin{aligned}
 \text{Gain (dB)} &= 10 \log \frac{P_{\text{out}}}{P_{\text{in}}} \\
 &= 10 \log \frac{0.5}{1} \\
 &= 10 \log 0.5 \\
 &= 10 (-0.3) \\
 &= -3 \text{ dB}
 \end{aligned}$$

Note that a 2 to 1 power loss corresponds to a 3 dB loss (or a gain of -3 dB)

2. dB to Power Ratio

The above procedure can be reversed by rearranging the formula and using anti-logs (the reverse of logs).

$$\text{Since } \log \frac{P_{\text{out}}}{P_{\text{in}}} = \frac{\text{Gain (dB)}}{10}$$

$$\text{then } \frac{P_{\text{out}}}{P_{\text{in}}} = \text{Antilog } \frac{\text{Gain (dB)}}{10}$$

- a) Assume we have an amplifier with a 1 watt input and 13 dB gain. What is the output power ?

$$\frac{P_{\text{out}}}{P_{\text{in}}} = \text{Antilog } \frac{13}{10} \text{ dB}$$

$$P_{\text{out}} = 1 \cdot \text{antilog } 1.3$$

$$= 20 \text{ watt}$$

An Easier Way

Now the above calculations assume that you have log tables and that you are brighter than me and can use them.

There is an easier way and a great number of situations can be handled without logs by using a simple technique that requires you to remember 2 key numbers.

For 3 dB the key number is 2 :

For 10 dB the key number is 10 :

A 3dB change means a power change of 2 to 1.

A 3dB increase corresponds to 2 times the power.

A 3dB decrease means $\frac{1}{2}$ the original power.

A 10 dB change means a power change of 10 to 1.

A 10 dB increase means 10 times the original power.

A 10 dB decrease corresponds to 1/10 th original.

Remember also that adding logs is the equivalent of multiplying the powers of ratios.

- Examples
- 1) consider 6dB as 3dB + 3dB
since each 3dB is a power gain of 2
power gain of 6dB = $2 \times 2 = 4$ times
 - 2) Power loss of 20 dB = 10dB + 10dB =
 $\frac{1}{10} \times \frac{1}{10} = \frac{1}{100}$
 - 3) Power gain of 13dB = 3dB + 10dB = $2 \times 10 = 20$ times
 - 4) Power gain of 16dB = 3dB + 3dB + 10dB =
 $2 \times 2 \times 10 = 40$ times

Our notes so far have only covered measurements of power, our concluding article will deal with voltage measurements.

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B.R.Waldron VK7CX , 62 Connaught cres. Launceston.

Copies of the constitution of the WIA Tas. div. are now available . There are two ways of getting hold of a copy

- 1) attend the next meeting of your branch and ask the secretary for one.
- 2) send a self addressed stamped envelope to the divisional secretary at, PO BOX 1010, Launceston 7250 (15 ¢ stamp)

New equipment around the place includes:

IGL transceivers to , Graeme 7ZGG , Greg 7KJ , Dean 7ZAD , Phill 7ZAX and a receiver for Winston 7WH.
Joe 7ZGJ has sold his Galaxie and bought back his FL200.
Any day now there will be some smiling faces around Launceston when the FT-620's arrive for Kevin 7ZAH and Daniel 7ZDA, transverters for 144 Mhz are already in the making and no doubt will be followed by 432 Mhz.

MITS calculators are available through the Northern branch. One of the most popular ones has fixed and floating decimal, leading and trailing zeroes are blanked, 8 digit LED readout with error indication, 4 arithmetic functions plus square, square root, reciprocal, and percentage in a single key stroke. Also includes a memory. This one is available to members only for \$82.50 if you are able to get a tax exemption. NON- members price is \$86.25 + tax unless tax exemption certificate is supplied.

144 MHz Stacked Array

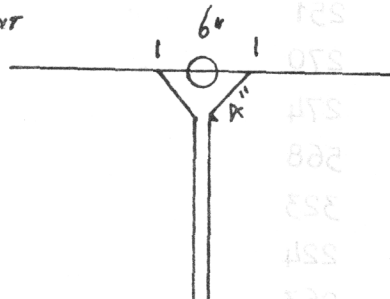
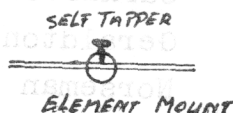
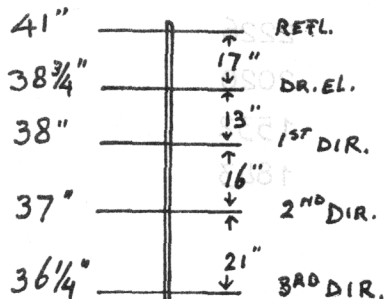
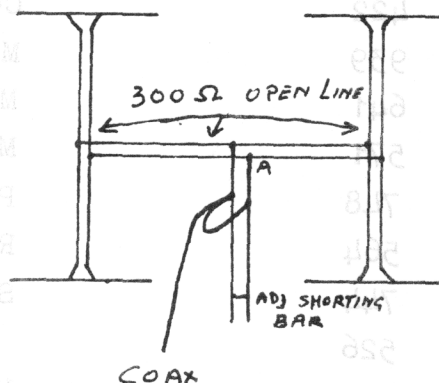
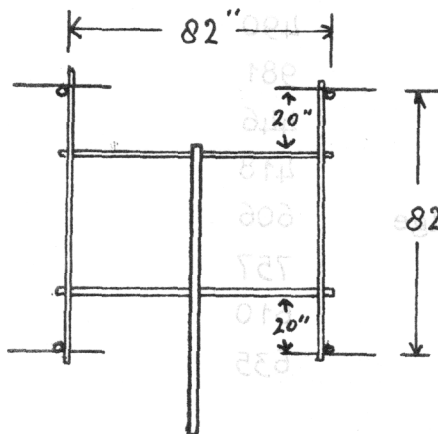
D. St John, VK3AQR

(originally QST Oct 1966)

Advantages of this array are;

1. Easy to construct and match
2. Dimensions not critical
3. Ideal for DX scatter work

4. Gain about 14-15 dB
5. Wide bandwidth
144-147 MHz



BOOM DIAMETER $\frac{3}{4}$ "
 FRAME DIAMETER 1"
 ELEMENT DIAMETER $\frac{1}{4}$ "

A few modifications were made to the original design to improve performance on the section of the band used in VK. The element lengths were altered slightly to improve the SWR over the main part of the 144-145 MHz region. The horizontal section of the H frame can be made of wood treated with Esterpol for water proofing. The wooden frame is believed to improve the pattern of 432 MHz beams so will have a similar effect on 144 MHz although aluminium tubing can be used. The entire aerial used here was painted with Esterpol and over the connections a silicon rubber compound of excellent VHF properties was used. The matching stub used 300 ohm open line and, as an example, the length from the shorting link to the point A was approx. 39" and the balun was about 6" from point A.

Balun length was 26" and 72 ohm coax was used.

NOTE

February is a short month. Contributions for March
 'Q.R.M.' are required now.

Distances from Launceston toVK1 MILES

Canberra 437

Mt.Ginini 417

VK2

Albury 369

Armidale 794

Bathurst 567

Deniliquin 422

Lismore 939

Newcastle 641

Orange 571

Pt.Macquarie 748

Sydney 564

Tamworth 744

Wollongong 526

VK3

Ballarat 318

Bendigo 356

Frankston 251

Geelong 270

Melbourne 274

Mildura 568

Mortlake 323

Morwell 224

Mt.Cowley 263

Mt.Waverley 267

Tahara 384

Wangaratta 352

Traralgon 225

VK4

Biloela 1197

Brisbane 1032

Bundaberg 1186

Hughenden 1434

Ipswich 1004

Mackay 1406

Nambour 1075

VK4

Rockhampton 1264

Toowoomba 995

Townsville 1536

VK5

Adelaide 644

Bordertown 490

Ceduna 981

Millecent 446

Mt.Gambier 418

Murray Bridge 606

Port Pirie 757

Renmark 610

Sterling 635

VK6

Albany 1642

Carnarvon 2226

Geraldton 2020

Norseman 1532

Perth 1843

VK7

Burnie 67

Devonport 48

Hobart 103

VK8

Alice Springs 1445

Darwin 2239

ZL

Auckland 1509

Christchurch 1307

Dunedin 1205

Wellington 1431

Distances from Devonport to

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<u>VK1</u>	<u>Miles</u>
Canberra	434
Mt.Ginini	411

VK2

Albury	352
Armidale	794
Bathurst	563
Deniliquin	394
Lismore	941
Newcastle	645
Orange	565
Pt. Macquarie	752
Sydney	568
Tamworth	741
Wollongong	529

VK3

Ballarat	280
Bendigo	321
Frankston	217
Geelong	231
Melbourne	241
Mildura	531
Mortlake	279
Morwell	202
Mt.Cowley	221
Mt.Waverley	234
Tahara	339
Traralgon	205
Wangaratta	331

VK4

Biloela	1188
Brisbane	1032
Bundaberg	1182
Hughenden	1411
Ipswich	1003
Mackay	1393
Nambour	1074

<u>VK4</u>	<u>Miles</u>
Rockhampton	1255
Toowoomba	991
Townsville	1518

VK5

Adelaide	599
Bordertown	446
Ceduna	935
Millecent	400
Mt.Gambier	371
Murray Bridge	561
Port Pirie	714
Renmark	569
Sterling	590

VK6

Albany	1596
Carnarvon	2179
Geraldton	1972
Norseman	1484
Perth	1796

VK7

Burnie	20
Hobart	132
Launceston	48

VK8

Alice Springs	1404
Darwin	2201

ZL

Auckland	1553
Christchurch	1354
Dunedin	1253
Wellington	1477

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