



# GATEWAY

**The Official Magazine of the Gippsland  
Gate Radio & Electronics Club Inc.**

**February 2020**



**Morse Code Training – Pictures**

**Australia Day – Pictures**

**Bluetooth Speaker**

**And More**

Cover photo, Australia Day BBQ at the back of the club rooms, see page 12.

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Note: - club meeting minutes are on the club website

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## Event Queue

### February:

- |                  |                                      |
|------------------|--------------------------------------|
| 20 <sup>th</sup> | Morse Code practice night            |
| 21 <sup>st</sup> | General meeting – Guide hall         |
| 23 <sup>rd</sup> | Wyong Field Day – NSW (courtesy WIA) |
| 27 <sup>th</sup> | Morse Code practice night            |

### March:

- |                     |   |
|---------------------|---|
| 5 <sup>th</sup>     | Morse Code practice night   |
| 2-3 <sup>rd</sup>   | International DX Phone Contest sponsored by the ARRL (courtesy WIA) |
| 12 <sup>th</sup>    | Morse Code practice night   |
| 20 <sup>th</sup>    | General meeting – Guide hall  |
| 21-22 <sup>nd</sup> | WIA John Moyle Field Day 2020 (courtesy WIA)                        |
| 28-29 <sup>th</sup> | CQ World Wide WPX Contest for amateurs world-wide (courtesy WIA)    |

# President`s Report - Tony Doyle VK3QX



Hi Everyone,

It's been a busy 2020 for me so far with service restoration activities.

At one point I ended up working 12 days straight.

To date, we've managed to completely replace a burnt out site at Jingellic.

Emergency sites on wheels have been deployed to Mt Mittamatite near Corryong and to Mallacoota (which included a ride in an army Bushmaster) as both sites were totally destroyed.

Antenna & feeder cables were replaced at Jersey West in East Gippsland after being burnt out at height of 60 metres up the tower. The first day of this trip included another much longer ride in an army Bushmaster, which has now well and truly been crossed off my bucket list.

A shelter still to be rebuilt in situ & feeder cable still to be replaced at Pheasant Hill near Bruthen.

So communications has been fully restored but there is still plenty to be done.

The club started Morse code training in January, ably run by Helmut, and this has had a great turnout of members.

Rob will be introducing the QRP kits at this month's GM, which is sure to be an interesting project.

We have also had requests for a Foundation Licence course which will need some further discussion to gauge numbers and work out how and when we could get this going and who could assist with running sessions.

We've also locked in the Hamfest for July 11 this year due to the hall availability. As it is the weekend before the July GM we may look to either schedule an extraordinary meeting the night before or bring the GM forward a week for that month. We can discuss options in the coming months.

It is shaping up to be a busy year.

73

Tony

Gateway is the official journal of the Gippsland Gate radio & Electronics Club.

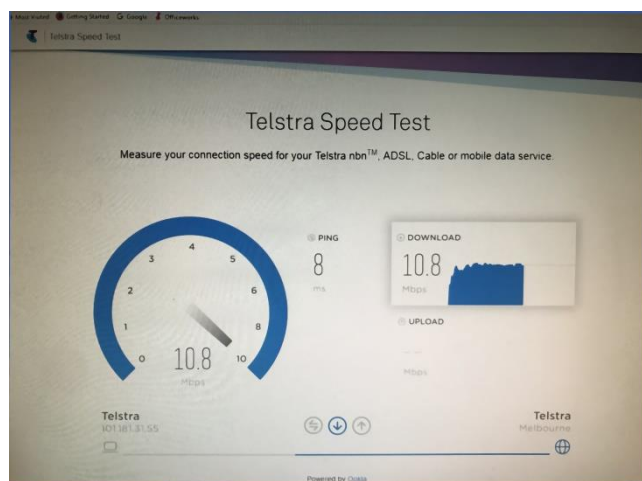
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# From The Editor



This month it was time for some more fun with the NBN. My aunt had received notification that the NBN service was now available in her area, so I told her 'you better sign up earlier than later', as I had heard that in many area's people were leaving it until the last minute causing all sorts of grief for the technicians who all of a sudden have to do everything for everyone in a given area, rather than a smooth transition – whether this is true, now, or was ever, I don't know.

However, after you get your notice you are supposed to have 18 months to connect before the old infrastructure is finally turned off.

- So does this mean we are going to see a flood of old comms gear? So far nothing seen.

Anyway, she put in her order, and a week later an NBN bloke appeared and ran a pay-TV coax (which was behind her TV) to the back of the house where her computer resides. She was given the impression that a Telstra man was coming to finish the job, nothing happened, so she visited the local Telstra shop, who gave her a self-install kit (all but useless to her) then when she asked about the tech coming, she was told "That will be \$250". Rather shocked, she declined their 'generous offer' – What a rip off, a customer for years, then they won't help with a forced 'upgrade'. The Telstra shop lady then said she had 12 months to get it all sorted...

A few days ago, a Telstra? Tech called asking why the NBN had not being setup, My aunt told him what the sales lady had told her, to which the tech said 'No No No, do you want a tech to come', for \$250, NO WAY she said, don't send them. So I promptly got a call....

The NBN man had done a reasonable job, however the supplied coax is too stiff, and he also muddled up the power wiring to all her computer gear.

So I plugged in the Telstra gateway that she had been provided in the self-install kit, and a spare telephone handset into its phone socket. After a few minutes all the lights settled on the gateway, and I had dial tone on the new phone line. Interestingly we still had dial tone on her now old line, but if I called her number, it only rang on the new NBN service phone. After a while the old line went dead (no dial tone), however there was still 50 volts on the line.

The next step was to get all her phones working, so I popped the lids off or her 3 phone sockets, and found some heavy black lead in wires appearing in the kitchen socket. These were promptly cut free, so the old exchange with its 50V wouldn't try and blow up the gateway box that I was about to connect to these sockets. All I had to do then was run a phone cord from the gateway to a phone socket near her computer (where she had been getting ADSL from) and then her main phone in the lounge room promptly sprang into life – job done.

She tells me many of her acquaintances had all but given up getting their home phones working, and have moved over to mobiles. This is absolutely crazy, NBN co provided a fibre-phone service from the very beginning and Telstra (as well as most of the rest of the telco's) have bought in modems/home gateway box's with phone support (as in extra dollars for this feature) but no-one is following through to make it all work for people. Absolutely stupid.

# Morse Code Training



More at <http://ggrec.org.au/gallery/albums/2020-morse-thursdays-1/>



## Instrument Amplifier Repairs - pt 2



Here is the amplifier, now complete with drivers, luckily the owner took on the task of acquiring the drivers.

He is not that well off financially so doing the legwork for the drivers cut the bill back somewhat.

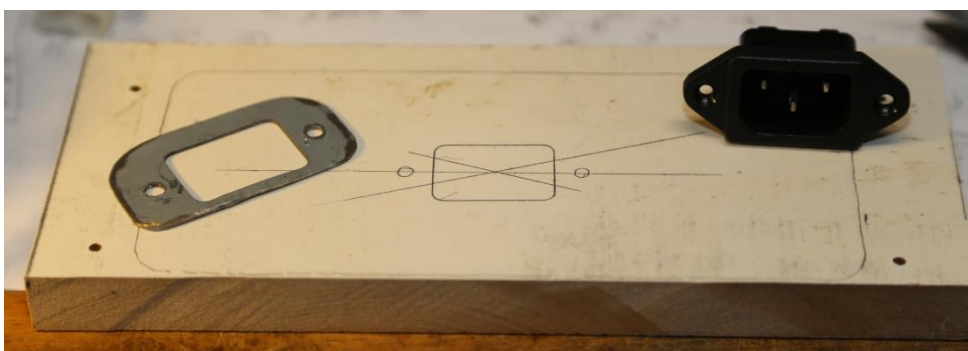
Also he had previously given me the front grill from another dead unit, the screw holes didn't line up, but boy was it so close as to be ridiculous.

Right about the time I had it all together, someone down the road decided to have a loud get-together, and as

nobody was complaining about them, I used the opportunity to give this one a good thrash/burn in. I left it in 'head ache' mode in the shack/laundry whilst I had lunch well away.



On the back of this unit was a plastic box intended to have the rolled up power cord stowed, however as it was starting to fall to bits, I converted it to use a detachable cord by fitting an IEC style socket to the back panel. The white block of wood atop the speaker was soon to be sprayed black, and have a socket fitted.



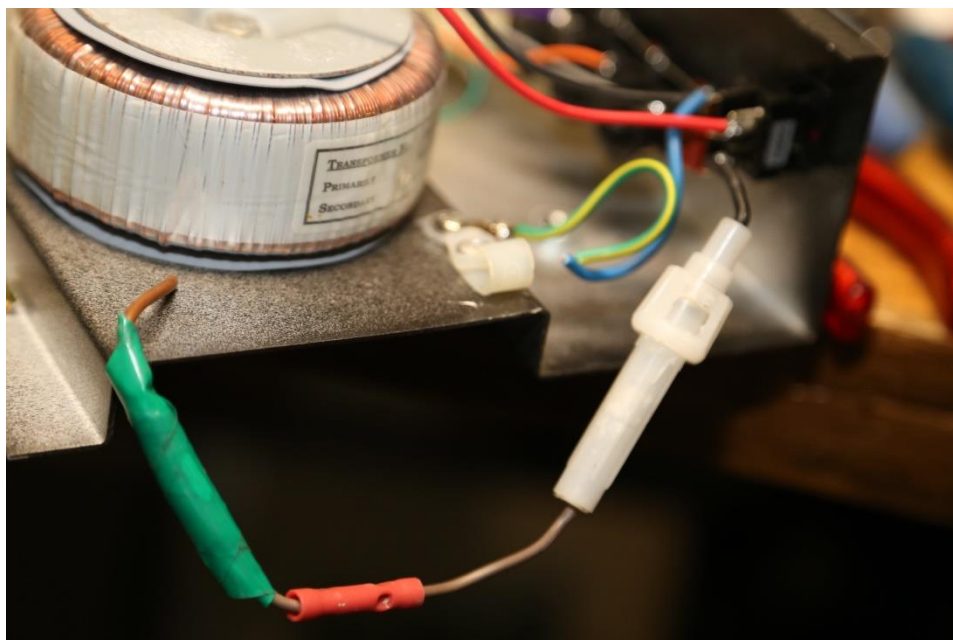
Here I am marking out the new back panel. The metal plate on the left is from someone else's hacks, but it sure comes in handy as a template for marking out.



Some of the previous repairs, they just kept adding to the mess, rather than running a new wire directly into the fuse holder



It's quite easy to solder new leads to the fuse holder's internals, no excuse.



Last month I mentioned giving the amp a quick evaluation as to what power I expected it to be able to deliver.

This was based on the transformer specs, 33V windings will only give you about 45V un-loaded, so allowing for losses here and there, a 25V sine wave should be achieved, which should give 78W, however as the transformer is only rated at 80W it will probably load down a fair bit leaving, say 60W into an 8 ohm speaker.



Here it is in all its final glory, I mentioned ripping the metal grill back to bare metal and giving it a fresh coat of paint, however the owner said 'just leave it as it is', a bit of patina looked good in his eyes.

*Paul VK3TGX*



# Bluetooth Speaker



You may well remember a picture of this speaker – with just the drivers, a few magazine issues ago; well I've finally finished it, well mostly. Like most things I can think of a few improvements here and there.



For starters, I'd like to add some rack style handles to the sides. In reality I'd probably use some wooden wedges with aluminium strips on their fronts; it would look the same from the front, without having the sharp edges to contend with. Unfortunately the handle shown is too short, and I only have one. They are made by Kipp in Germany, however Kipp want an account, and only from a company. Yes I could bullshit deluxe, register anyway and ask for some samples, but that is not my way. The handles would allow me to roll it onto its front

without placing any load on the speaker grills etc., so they are for far more than just looks.



One of the first tasks was to cut a hole in the craft wood front panel, this was a bit tricky as the Chinese music player I had selected has some fairly fine dimensions between the circuit board and the very small mounting screw holes. If it were to be mounted in a plastic or metal panel the job would have been a lot easier, however careful persistence with some small files eventually paid off.

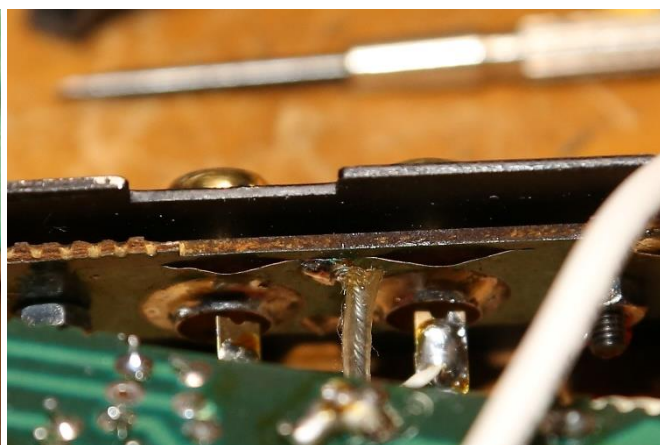




Originally I was going to use this car audio amp, however it had some issues, trouble was once I opened it up I realized I had a real can of worms to contend with.

Originally it had some high level audio input leads hanging out the back, so off with the lid to remove them, a fairly simple process one would think, but I was quickly

overwhelmed by the absolute shit build quality of this thing, and to think it had come from a trusted local store.... Shame on you who make this....



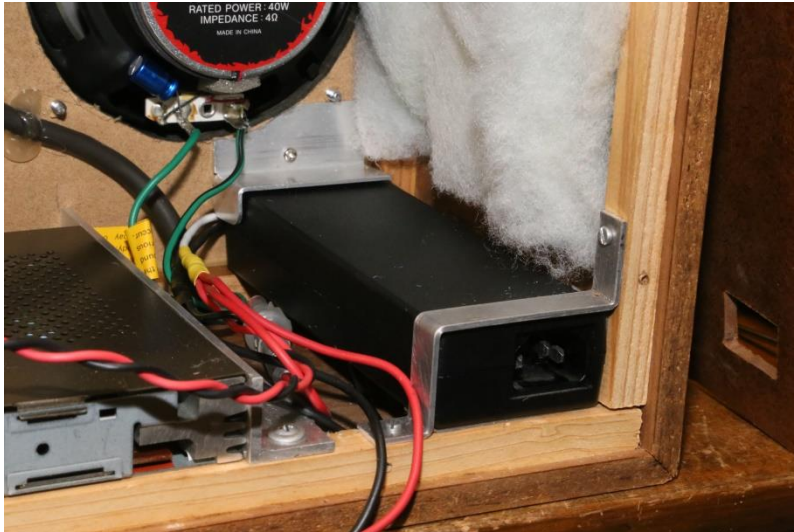
The biggest problem was that most of the track work was all but falling off the circuit board, open it up and touch one thing and something else would break. After going in there a few times I ended up writing it off. Even if I could get it to go (it's a fairly simple design) I could never trust it to keep on running. Then there is the sound quality, if they had put so little effort into quality construction, then what was the chance the audio would fair any better. Also with so much cheapness, one has to wonder about the actual components used, third rate at best.



So I dove into my junk file and found a Pioneer component car audio amplifier. Normally these come with a propriety plug fitted and are only intended to be used with a select range of 'Head units' (the bit you see on the dash). However the plug had already been cut off, there not being many wires to contend with, good.

First off there were two, a red & white in a separate shield, obviously the audio input, alongside a heady orange and red lead, followed up by a very thin yellow wire. The red wire was power to the head unit, the orange, which I initially thought was negative, turned out to be a remote turn on wire, connecting it to the red wire caused a relay in the amp to pull in and power it up. I never figured out the purpose of the yellow wire, the audio player board offers no amplifier control functions so going any further here was a tad pointless.

One thing I did do was to put a diode between the red and orange wires, that way if for some reason the 12V power was reversed, the relay would not pull in, hopefully limiting the damage. However in hindsight a thermal cut-out attached to the amplifiers heatsink would be a better idea, in the end I fitted a switchmode power supply, its output diodes making the relay diode all but redundant.



I looked through my junk box and ended up using a 7A switchmode power supply for 240V operation. I thought I had a 4A unit, a tad smaller, but that search ended badly.

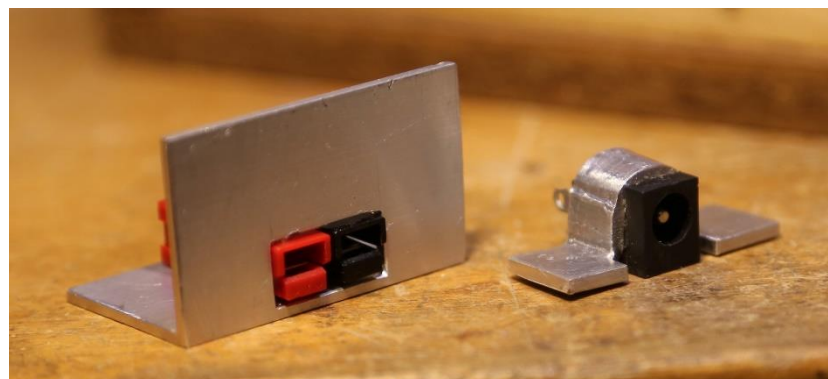
Oh well, I now have excess power to run ancillary equipment via two DC jacks that will feature shortly.

The supply and amplifier are sitting on the wooden bead strips used to attach the front and back panels to the speaker box, the beauty of doing it

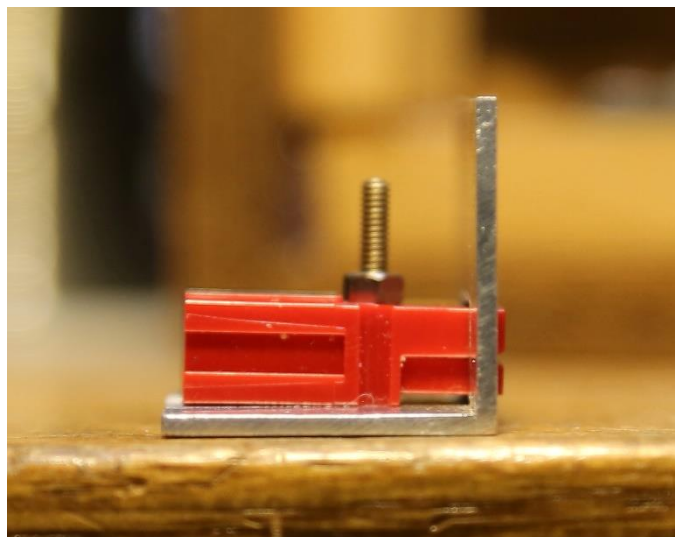
this way is that there is good airflow around the modules, so hopefully they will stay cool. The supply was initially mounted using some rubber mounting tape, then backed up with some aluminium strap at the back end, and some angle aluminium, with a folded over end to stop the front panel end sliding sideways from under the bracket. Using a power supply 'brick' has its advantages, all you have to do is expose its power socket to the outside world, then forget all about doing any 240V wiring. The downside is that fitting a 240V power switch is awfully difficult – and leads you to having to tangle with 240V wiring. This way there is no arguing about my 240V qualifications, I didn't do that part!



Here are the DC sockets I fitted, 25A Anderson power pole's as used on all my radio's, alongside a 2.5/5.5mm barrel socket, these serve both as DC in's to run the speaker, and also DC out's to run external gear. With a 7A supply fitted, there is a few amps to spare. The holes in the back panel were purposely made tight, especially for the Anderson's so that any hard jerks on the lead are less likely to break the internal connector, all the load should go into the back panel and also the aluminium mounting bracket



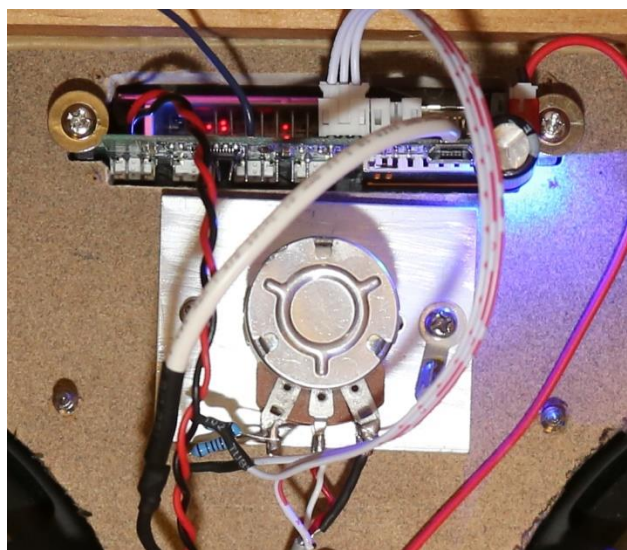




Here is how I generally chassis mount my Anderson power pole connectors. I cut a hole into some aluminium angle just large enough for the connectors to mate through; it is almost an interference fit. This way if there is any lateral pulling on the connecting lead, then the aluminium bracket supports the connector and takes most of that load.

Yes it's a bit fiddly to do, however it's less fuss than opening gear to replace damaged sockets. And boy do they feel so much more firmer.

The Barrel socket I used, is intended to sit in a specially moulded recess in the equipment's housing, however not being into industrial plastic moulding, (Yes, I should get a 3D printer) so I spent ages forming a special bracket out of the same aluminium I used for mounting the switch mode power supply into the box. I bent the aluminium strap around the shank of a drill bit that best matched the rounded upper of the socket (its round behind the square end you can see) then I bent out the two ears ready for screw holes. The ears are just shy of bench in the picture, so when screwed down there is a good amount of pressure locking the socket into place.



According to the amplifiers label, it only needs 70mV to drive it, quite a lot less than the Bluetooth modules supplies – probably about 1V. So I added a few resistors and a 10K log pot to get it under control. Yes the audio module does have a digital level control, but it is nowhere as useful as a real pot, especially at power up. Who needs to hear "The Bluetooth device is ready to pear" blasted out at 20+ watts per channel, before one gets a chance to wind down the digital control – something not possible before it is powered on, unlike a real knob & pot.

Well that pretty well covers it, some audio in and out sockets were later fitted, alongside lining the box with polyester stuffing. I had to be careful not to get the stuffing too close to the electronics as heat build-up would surely occur. Later during testing, the crappy 5V regulator on the Chinese Bluetooth audio module failed, (again!) so I ended up powering the module from an external 12 to 5V converter, at least now I don't have to worry about smoking it should someone try and charge their mobile phone from the front panel USB socket. A 2.5A load should be fine, unlike before where the standard 150mA load killed the original regulator.

I am really quite happy with the sound, it's not perfect, with a bit of a base bump, like a lot of yesterday gear, other than that it sounds far better than my Aldi speaker. I recently went into JB Hi-Fi and tested a range of speakers, they almost all failed one simple test, dialogue. The bigger they get, the more bass punch and upper end, all at the expense of the midrange.

*Paul VK3TGX*



# Australia Day BBQ







More at <http://ggrec.org.au/gallery/albums/australia-day-2020/>





## Club Information



Meetings 20:00hrs on third Friday of the month at the  
Cranbourne Guide Grant Street Cranbourne  
Prac nights first Friday in the Peter Pavey Clubrooms Cranbourne 19:30hrs  
Visitors are always welcome.

### Office bearers

President	Tony Doyle	VK3QX	Web Master	-	-
Admin Sec	Rob Streater	VK3BRS	Magazine Editor	Paul Stubbs	VK3TGX
Treasurer	Robbie Xin	VK3FAMT	Property Officer	'committee'	
General 1	Helmut Inhoven	VK3DHI	Assoc. Secretary	Rob Streater	VK3BRS
General 2	Leigh Findlay	VK3FACB			

### Call in Frequencies, Beacons and Repeaters

The Club Station VK3BJA operates from the Cranbourne Clubrooms.  
6m Repeater Cranbourne VK3RDD, In 52.575 Out 53.575 CTCSS none  
70cm Repeater Cranbourne VK3RGW, In 434.475MHz Out 439.475MHz CTCSS 91.5Hz  
VK3RGW Repeater supports Remote Internet access (IRLP), Node 6794.  
70cm Repeater Seaview VK3RWD, In 433.575MHz Out 438.575MHz CTCSS 91.5Hz  
Simplex VHF - 145.450MHz FM, Simplex UHF - 438.850MHz FM  
VK3RLP Beacons 1296.532MHz & 2403.532MHz (currently inactive)

### Membership Fee Schedule

- Pensioner member rate \$40.00 Extra family member \$20.00  
Standard member rate \$50.00 Junior member rate \$25.00  
Fees can be paid by EFT to BSB 633000 - Account 146016746  
• Always identify your EFT payments  
• Membership fees are due by each April Annual General Meeting (AGM)

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