



AREC.info is the newsletter of Amateur Radio Emergency Communications, the public service arm of the New Zealand Association of Radio Transmitters. AREC.info is published most months (except January).



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Cover: *Glyn Saunders ZL4GN at the base tent for the Te Anau Basin Trail Ride at Mataroa Station on the 25th of February 2023.*



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Adam ZL4ASC

I would like to start by congratulating Adam ZL4ASC for 15 years of service with AREC. I had the privilege of presenting his certificate at the SAR Track training in Dunedin recently. Recognising our people and their service is something I really enjoy.

AREC Awards

AREC presents annual awards at the NZART conference weekend. If you know someone who thinks needs recognising, please visit [AREC Awards | AREC](#) or contact Annalise.



ID Cards

The new ID cards have recently been posted out to members. If you have not received one, you either have not enrolled into the Member Hub or have not sent an updated photo to Annalise. The Member Hub can be accessed here [AREC Membership Hub | Groups \(friendlymanager.com\)](#)



SARTrack MOU Signed

I recently signed a memorandum of understanding with SARTrack CEO Bart Kindst.

This MOU “is to establish and promote collaborative working relationships between SARTrack and AREC in order to work together and support each other on matters related to Radio Communications Technology, Information Communication Technology (ICT), the implementation and use of the SARTrack software and offer advice to each other on matters related to the same.”

SARTrack is made available free of charge by Bart, and is used extensively in New Zealand and around the world. AREC provide training and technical support to the Search and Rescue sector in the set-up and use of the software.

This MOU formalises our relationship and provides a framework for our ongoing collaboration.

WanderSearch Workshop

Seven AREC members attended the recent WanderSearch workshop in Wellington. The weekend focussed on a range of topics and was described as “fantastic”. More information can be found here [WANDERSEARCH HOME - WanderSearch New Zealand \(wandersearchnz.org.nz\)](#)

You will read an article in this issue relating to how Amateur Radio operators responded to Cyclone Gabrielle. There has been a lot of positive interest in the hobby as a result so thank you to all who have contributed.

Until next month, stay safe.

Don, ZL2TYR

Chief Executive Officer, AREC



AREC Volunteers Respond to Cyclone Gabrielle

The New Zealand Amateur Radio Emergency Communications (AREC) kick into gear to respond to Cyclone Gabrielle.

As Cyclone Gabrielle approached the coastline of New Zealand, members of New Zealand's [Amateur Radio Emergency Communications](#) (AREC) wasted no time kicking into gear.

The cyclone was expected to bring extreme winds and rainfall across Auckland commencing on 12 February. Winds in excess of 120–130 km/h were forecast and exceeded 150 km/h in some areas. These wind speeds had the potential to cause damage to power and telecommunications infrastructure. Heavy prolonged rainfall was also predicted to cause serious flooding across large parts of the North Island East Coast.

Here are just a few stories of the heroic efforts by AREC members and other licensed amateur radio operators who provided their services to the communities impacted by the cyclone. My thanks go out to all involved.

Auckland – Andrew Brill ZL1COP

After meetings with Auckland Emergency Management (AEM), AREC was asked to provide radio communication support across the entire Auckland Region for field teams comprising of a mix of NZ Response Teams, NZ Defence force personnel, and other volunteers.

AREC developed a detailed communication plan and personnel rosters to assist with the operation. Radio Comms planned for the disastrous event consisted of:

- AEM VHF network – 8 x channels (ESB Band) for CD coordination
- Commercial – 2x channels (1x EE band, 1x CN band)
- Amateur – 3x repeater channels (Auckland 670 2m repeater, Kohukohunui 875 STSP, ZL1BQ ZK DMR) for coordination and liaison between AREC members.

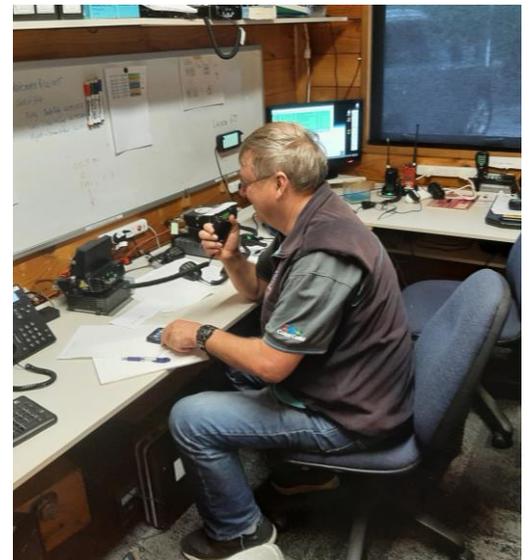
Due to an outage of an AEM repeater a crossband repeater using UHF uplink from the comms base with an ESB band simplex downlink provided to the operational area.

Fourteen Civil Defence centres were established throughout the Auckland region and AREC maintained VHF contact with these centres; including local community response groups in the Rodney District and Waiheke Island together with various AEM and NZ Response Team resources.

AREC was based at the North Shore CDEM base (400 East Coast Road Sunnynook) and provided the link between the field teams throughout Auckland and the Incident Management Team located at the Auckland Emergency Coordination Centre in the Auckland CBD; reporting, and general situation reporting for the duration of the emergency.

AREC volunteers assisted with a number of activities including communicators, log keepers (recording messages, forwarding messages via e-mail, data entry), using SARTrack and other computer systems. We also had several members acting in a support role, handling phone calls, logistics seeing to the feeding and watering of volunteers.

Right: Alastair ZL1NEO operating at the North Shore Comms Base.



AREC operations and preparation were activated on 8 February, while actions commenced on 12 February and continued through to 16 February. During this time, 18 amateurs supported the operation at the base. A total of 25 people were on standby throughout the Auckland region to provide remote support if needed. A total of 337 person-hours were worked.

Our team identified that additional radios were needed. AREC member Soren Low ZL1SKL sourced 60 VHF radios. He, along with Jim Smith ZL1TGS, spent eight hours programming these radios onto CDEM channels, then lending them to AEM.



Above: North Shore Communications Base.

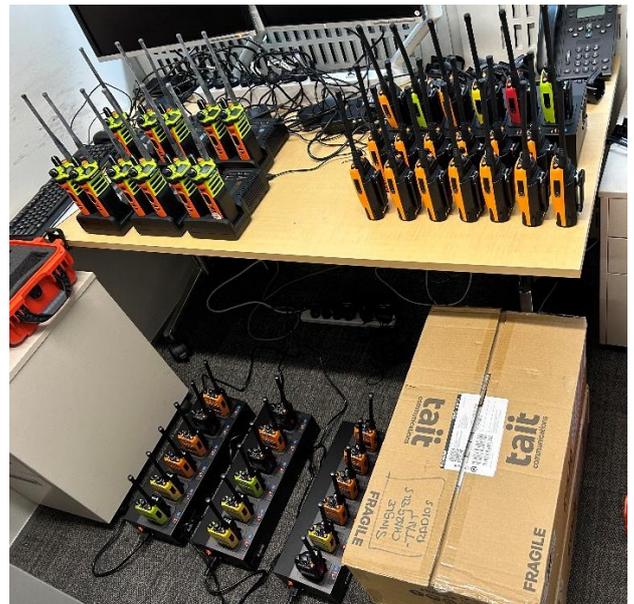
Right: AEM's Motorola APX portables at the top left of the photo, and loaned Tait TP series radios.

A team on Waiheke Island, led by Joe Bell ZL1PMY, were able to issue handheld radios to the island communities and provide VHF coverage using their private commercial repeater, to maintain contact 24 hours a day for the duration of the operation.

Without this support, evacuation centres around Auckland would not have had any backup communications.

During the afternoon of 14 February, we were requested to provide a portable repeater to provide on-scene comms between rescue workers operating at Muriwai in the search of the missing volunteer fireman, as cell coverage was down.

The ESB164 interagency liaison repeater was deployed



by the North Shore Response team NZRT5. AREC conducted a coverage analysis to locate a suitable site to provide good coverage of the scene and also direct comms to the Sunnynook base. AREC volunteers also provided and programmed equipment to allow comms with Welfare teams who were operating rented UHF portable radios on a commercial repeater channel on the Auckland Skytower.

AREC was stood down at midday on 16 February, with a few remaining on standby if needed.

The majority of communications handled up by our volunteers was routine sitreps with no major issues;

however, the operation has confirmed the value of AREC and radio comms in disaster situations, and has underlined the need for comms knowledge and skills in the event of infrastructure failures. SARTrack proved to be a valuable tool for logging radio traffic, and our improvised link to emergency communications centres (ECCs) worked so long as we retained internet connectivity.

Auckland ECC Operations Manager Josie Beswick passes on her thanks and congratulations for the outstanding service provided by AREC volunteers, and that is echoed by feedback from the community groups and Civil Defence evacuation centres around the region, who were kept in touch when the power and phones were down and things looked gloomy.

Hawke's Bay – John Newson ZL2VAF

AREC and Civil Defence activated the ECC in Hastings, testing the CD radio network up the East Coast and set up ready for Cyclone Gabrielle. The severity of the cyclone caused significant damage including power outages, with the main high-voltage substation that fed the wider area flooded. The rivers rose so high that the bridges between Napier and Hastings became unpassable, which meant a number of AREC/CD communications volunteers were cut off and unable to attend the ECC. In the first 48 hours, only three members supported the comms in 12-hour shifts with very little sleep; a mammoth effort by these three.

On the 13th, the CD volunteer team leaders called in to prepare for a likely event. All the handheld radio batteries were put through the chargers to ensure that they were fully topped up and ready to go. Some of the Rapid Response team were on hand getting equipment and vehicles ready. The Welfare team arranged to have the local sport centre set up as a welfare centre. We did regular radio checks with the sport centre.

In the early evening, the Eskdale Holiday Park called in to say the river was rising and those at the campsite were being evacuated to the local marae. I was asked to give 24-hour communications coverage and so gave Rob Wallace ZL2SG a call. He arrived just before 2000 hours, we did a handover and I left shortly after, prepared to come back at 0800. Rob was stood down at 2100 as Emergency Management didn't think they needed communications overnight.

I arrived at 0745 on the 14th to find people waiting on the radio at the other end for someone to answer them. This is when things started to hit home. Kereru School called in to say they were completely blocked in with slips. The marae that the campground had evacuated to was out of power and the toilets were flooding. Hukarere College had also evacuated to the marae. They couldn't get portaloos, so everyone there re-evacuated to St Joseph's College in Greenmeadows.

John Montgomery ZL2MB came in mid-morning after not being able to contact me and Ray Barlow ZL2RB came in about an hour later. Ray had been listening to the radio traffic and had also tried to contact me but I wasn't replying. Being busy, my



phone was ringing until it went to messaging, so he came in to see what was happening and if I needed help. The lack of mobile phone response was due to the cell towers and internet service being down. A large number of messages and missed call notification came through all at once a few days later.

We had limited communications with Wairoa through the emergency management advisor's 4WD ute. We had a schedule set so that the Emergency Management Controllers could talk to each other over the radios. We started handing out our handheld radios to those who needed them and assigned radio repeaters as necessary.



Unfortunately, COVID had depleted our volunteer organisation so much that we were unable to deploy as we had planned and we started assigning call signs and repeaters on the fly. For example, we had one firm called Drainways that was sourcing generators from all over the place, and they had two of them on the repeater. We gave them a call sign of Drainways-1 and Drainways-2.

We gave out lists of repeaters highlighting the three that covered the most area and instructed each user to switch to another repeater if the one they were using wasn't working. We monitored all the repeaters and could reassign on the fly as long as they got onto one of the remaining repeaters. The main repeater we were using was on top of the Kaweka Ranges and it was powered by battery/solar. This repeater never missed a beat, although it got a little scratchy for a while until it got some sunlight back. We also lost our Taraponui repeater for about six hours and the next day we lost Kahuraniki for around 18 hours.

Left: Portable repeaters deployed.

By the 15th, some internet and cell phone connections were coming online. Starlink systems were being flown all over the place and our message tally started to fall. We were still the main source of communications but that was slowly changing.

We had one urgent call from an outlying district about a man having heart problems. They were going to cross a bridge that had water flowing over it but were dissuaded by one of our CD volunteers who had a radio. He called us for help and we got hold of 111 emergency, who picked the man up by helicopter.

By the 16th, cell phone access had started becoming available over wider areas and we were getting more people able to come and help at the communications centre. The Clive Bridge was said to be passable and the Napier CD volunteers were heading to come over and help. Then they closed the bridge as unsafe, meaning the volunteers could not get to the comms base. To be honest, that was the one thing that really deflated us.

I contacted my AREC Regional Manager, Don Wallace ZL2TLL/ZK6EXC, and he said to have a think who was available locally. He was going to get hold of Peter Moore ZL2HM, who is the local club treasurer. I had another ham who I knew really well, a truck driver, and I doubted he would be driving with all the roads down.

Nathan Foster ZL2ND was available and willing to help us out for a few days; he also signed up to join AREC while doing a shift! Tamsin Mendis, one of the CD volunteer radio operators, was also available for the day. At last we could start pulling the hours back and were running three eight-hour shifts.

On the 19th, the cavalry arrived at last. The road link between Hastings and Napier opened, though it took an hour to



Above: Gerry ZL2XL providing comms support for beach searches.

Early on the Saturday morning of Wellington Anniversary weekend Ryan ZL1RKW and Steve ZL2SJ headed off to the great lake with a car load of antenna, cables, mounting brackets, repeater, duplexer, circulator and test gear! Around mid-morning they met up with Kelvin ZL1KU and Stu ZL1PRT from Taupo Branch 60 for some brunch at the local bakery.

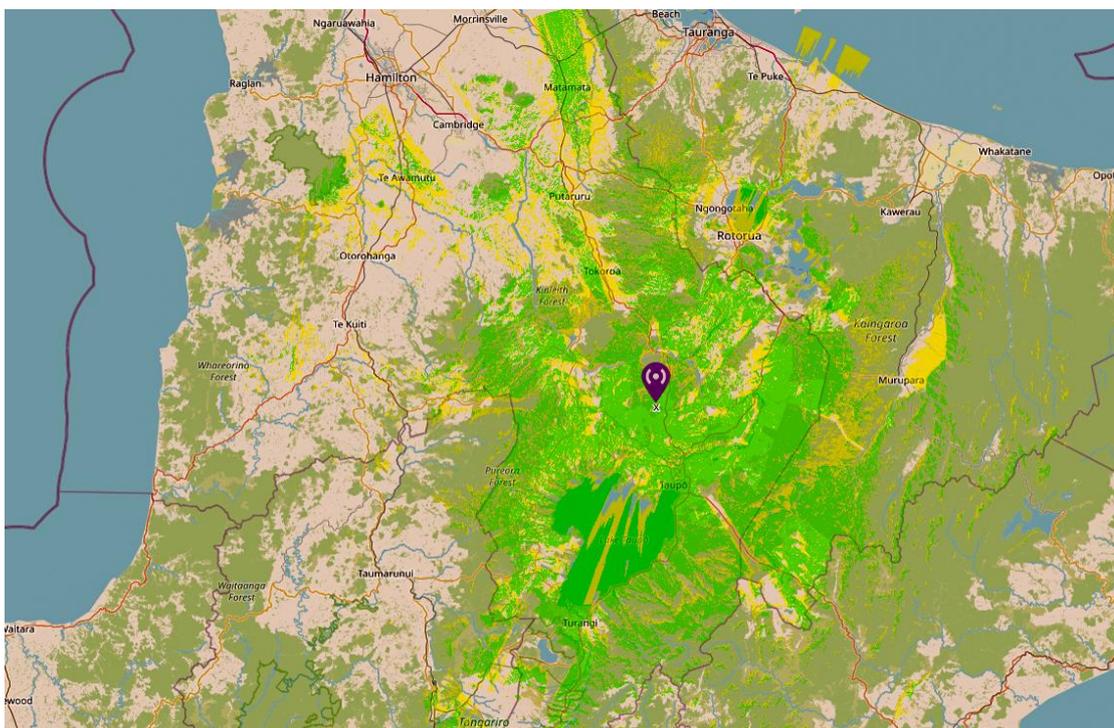
Steve installed the repeater, duplexer, circulator and CAT6 cable connected to the local WISP who provided an Internet connection. Kelvin and Ryan installed the large RFI COL11 on two brackets mounted on the hut.

Coverage so far tested by Ryan up the west side of lake on SH32 and SH27 around the Matamata area and on SH1 around Tokoroa. There is good coverage on SH1 from Mt Maroanui south to Desert Road. Some tests in some of the areas around Pukawa at the south end of the lake also showed good coverage.

Previous tests showed some signal to the Rotorua area and also across SH5 to Rangitaiki. As normal in the lakes district the huge number of pine trees cause many dead spots through the main forest areas and the huge dips in parts of the highways cause other dead spots.

Many thanks go to the following:

- John ZL4JY for providing Repeater, Duplexer, Circulator and the RFI COL11 antenna and setting up of the repeater and duplexer.
- Ryan ZL1RKW transport, installation help and vast coverage testing on several trips through the area.
- Kelvin ZL1KU mounting brackets and hardware, antenna installation and main earth added, plus some vital refreshments out of bottles!
- Stu ZL1PRT for assisting with the many gates and electric fence wires crossing the track and general assistance with install.
- Doug ZL2TAR engineering calculations and RSM licence application



Above: Kelvin ZL1KU feeding to coax into the hut and connecting the earthing cable to ground stake..

Left: Coverage map of the 439.7375 DMR repeater

Due to the amount of gear we headed up to Mt Maroanui in 2x 4WD vehicles which was rather fortunate as Ryan's attempt across the access paddock to the hill track ended in a near instant stop in a mud bog.

Some towing with ZL1KU vehicle eventually had the stuck 4WD removed!



| ZL-TRBO AREC DMR Repeater Network | | | | ZL-TRBO Channel Details | | | | |
|-----------------------------------|-----------------|----------------|-------------------|---|----------|-----------|---------|---------------------------------|
| Location | Repeater Output | Repeater Input | Status | Colour Code | Timeslot | Talkgroup | | Description |
| | | | | | | Number | Name | |
| Auckland | 439.7000 | 434.7000 | On air | 1 | 2 | 530 | ZL | All NZ, General |
| Hamilton | 439.7250 | 434.7250 | On air | 1 | 1 | 8 | ZK | All NZ, AREC |
| Tauranga | 439.7500 | 434.7500 | On air | 1 | 2 | 9 | LCL | Local Area |
| Hawke's Bay | 439.2375 | 434.2375 | On air | 1 | 1 | 1 | WW | Worldwide |
| Taupo | 439.7375 | 434.7375 | On air | 1 | 1 | 13 | WWE | Worldwide English |
| Manawatu | 439.7125 | 434.7125 | On air | 1 | 1 | 113 | UAE1 | User Activated English 1 |
| Kapiti | 439.7000 | 434.7000 | On air | 1 | 1 | 123 | UAE2 | User Activated English 2 |
| Porirua | 439.7500 | 434.7500 | On air | 1 | 1 | 119 | UAA1 | User Activated 1 (any language) |
| Porirua 33cm | 927.8000 | 915.8000 | On air | 1 | 1 | 129 | UAA2 | User Activated 2 (any language) |
| Wellington | 439.7250 | 434.7250 | On air | 1 | 1 | 153 | DMRpSP | DMR Plus South Pacific |
| Wellington 33cm | 927.8500 | 915.8500 | On air | 1 | 1 | 99 | Simplex | Simplex |
| Wairarapa | 433.8250 | 438.8250 | On air | Radio Settings: Use Timeslot 2 for ZL and LCL and Timeslot 1 for all others All Timeslot 1 talkgroups are PTT activated Admit Criteria - Colour Code Free Automatic Registration Service (ARS) - Disabled IP Site Connect (IPSC) - Enable Simplex: 146.5875, 432.7500, 432.7625 | | | | |
| Marlborough 2m | 145.3250 | 144.7250 | On air | | | | | |
| Tasman | 439.6875 | 434.6875 | On air | | | | | |
| Christchurch | 439.7000 | 434.7000 | On air | | | | | |
| Oamaru | 439.2375 | 434.2375 | On air | | | | | |
| Dunedin | 439.7000 | 434.7000 | On air | | | | | |
| VHF DMR STSP | 146.8750 | 146.2750 | Portable Repeater | | | | | |
| UHF DMR STSP | 438.7500 | 433.7500 | Portable Repeater | | | | | |

Users outside the network coverage area can connect using a local or personal hotspot connected to DMRplus reflector 4850 as detailed on the DMR section of the AREC.info website.

Further information: <http://arec.nz/arec-dmr-network/>

How are going this week?

Wellbeing of members and family is a key consideration for AREC, if you're not doing well you need to be able to sort things out.

AREC can now provide free access to professional and confidential advice and support through EAP Services. You can contact EAP via 0800 327 669 or <https://www.eapservices.co.nz/request-an-appointment/> to request a confidential appointment.

Staff/contractors/volunteers will need to say they're from Amateur Radio Emergency Communications or AREC and will be asked for their name and phone number (these details remain confidential to EAP – not shared with AREC).

Hi from what is currently a very wet and somewhat damaged Auckland.

AREC supported a two day search for a person washed away in the flooding in South Auckland. The subject was deceased but his body was recovered mid-way through day two after the flood waters subsided allowing some level of closure for the relatives and friends in the tight knit community. These sorts of incidents can be challenging for everyone involved. Don't forget to participate in the post-event debrief to ensure all your questions are answered and you can complete the search activity knowing that you and the wider AREC did its best under the circumstances and that any lessons learned are appropriately noted and actioned.

I hope everyone in AREC has remained safe and relatively dry and that not too much damage has occurred. If you are suffering from the after effects reach out to your local team and if necessary your District and Regional Managers for support. If the situation is starting to overwhelm you contact EAP services for support – phone **0800 327 669**.

Incidents & issues

Fortunately we don't have too many adverse incidents occur in AREC but it would be nice to have a few more learning opportunities reported so that we can prevent issues from ever arising in the first place.

We are hoping to soon have the ability to report issues and incidents directly into the AREC SharePoint system via a link on the AREC website. This is a work in progress but in the meantime if you do have any good ideas, have managed to prevent an adverse event from occurring, or have suffered a near-miss please email me at HSW@arec.nz so I can generate a report and investigation to ensure the learnings are made known to AREC management and preventative actions built in to our processes.

Learnings from a recent incident reported to HSW

A team in a 4WD vehicle drove to a high point to recover a temporary repeater. The keys were left in the vehicle and the doors were closed. At some point an electrical malfunction led to the central locking system activating! Needless to say this was quite disconcerting to those on site who were now all outside the vehicle looking in. Luckily the weather wasn't too adverse so no-one was in immediate physical danger.

Several alternatives existed for solving the problem ranging from breaking a window to gain access (couldn't find a rock big enough), to obtaining a spare key to open the vehicle.

Fortunately the driver's partner had a 4WD vehicle and was available to drive to the start of the road with a spare key. One AREC member did an heroic 5km walk to unlock the access gate and then accompany the partner back to the locked vehicle. Reportedly his muscles are still reminding him of the enforced exercise several weeks later!

Key learnings include:

- need to maintain vehicles in a serviceable state (it was a known intermittent problem);
- the usefulness of a spare key held securely outside the vehicle e.g. a [magnetic box](#) on top of a chassis rail;
- preparedness of those driving to a site to be able to walk out if something goes wrong (unclear if everyone on site could have walked for 5+km);
- the benefit of having hand-held working communication solutions (in this case mobile phone) when exiting a vehicle in a remote location; and the ready availability of alternative recovery options.

Fortunately it all ended safely with only mild embarrassment but the lesson is that you always need to: Stop, Think, and Plan ahead, before you Act!

Wellbeing and access to EAP Services

In all future Newsletters you will see a link showing how to access wellbeing support from EAP Services. As an aside the generic term EAP stands for Employee Assistance Program and is a service offered by many different companies. The company chosen by AREC happens to trade as 'EAP Services' and is a leading provider of employee support services used by many corporate entities in both Australia and New Zealand.

AREC has contracted the company to provide counselling support for members, contractors and immediate family of those AREC members who may have been adversely affected by their AREC activities.

A key point is to realise we are all different and will react in different ways to the same circumstance. Just because you or others appear to be coping OK after a stressful event doesn't mean that everyone is OK. Only you, or your immediate family or close friends really know if any adverse effects have happened. Sometimes you will not realise that your behaviour and feelings have significantly changed unless someone points it out to you.

So ensure you share the availability of the EAP Support services to your partner, family, and/or close friends. If they notice any significant changes they can then remind you that EAP wellbeing support is available.

Keep safe and as always if you need any health, safety or wellbeing support email HSW@arec.nz or phone me 021 185 7903.

David Wilkins ZL1MR
AREC Health & Safety Advisor



AREC members have a duty of care so we must not place ourselves or others at risk in regard to Hazards. We must always plan what we are about to do.

If any change takes place regarding People, Equipment, Environment, or Process/Task (PEEP) then we need to:

STOP - THINK - PLAN - COMMUNICATE - ACT