



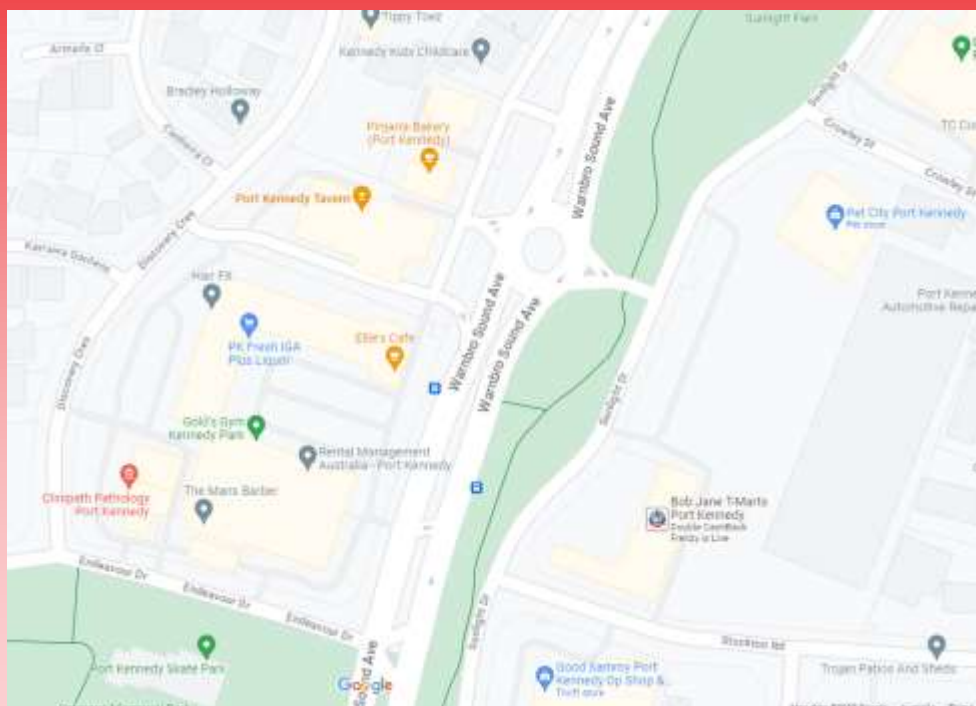
EDITION 282

NOVEMBER 2023 MAGAZINE



There is no general meeting in December the next general meeting is combined with the trip planning meeting 7TH January 2024 at the PK Tavern in the function room 379 Warnbro Sound Ave, Port Kennedy meeting at 2.00 PM

There will not be a meeting January 24





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CLUB INFORMATION

CLUB CONTACT DETAILS

POST OFFICE BOX 8233

WARNBRO WA 6169

<http://peel4x4club.webs.com>

Secretary: secretarypeel4x4club@outlook.com

Treasurer: peel4x4.treasurer@gmail.com

Magazine Email: briantanner57@bigpond.com

NEXT GENERAL MEETING

7/1/2024 combined with the trip planning meeting

GENERAL MEETING MEETING VENUE

Port Kennedy Tavern function room

379 Warnbro Sound Ave, Port Kennedy

Meeting starts at 2.00 PM

NEXT COMMITTEE MEETING

13TH December

COMMITTEE MEETING VENUE

The Powers Home

Upcoming trips

Lancelin Dunes

This Sunday November 19

See trip pages for details



Find us on



Membership Fees \$130.00 for the first year then \$90.00 per annum. Pro rata fees will be charged depending on your joining date.

CLUB BUSINESS

Peel 4x4 club Christmas Party



@ the



LOCATION

199 Port Kennedy Dr,
Port Kennedy WA 6172

Sunday 10th December 2023

12noon – 3pm

Finger / Platter style food will be provided

Buy Your Own Drinks

Final numbers by November Meeting November 22nd 2023

If you require more information

call Julie
0422 895 121

GENERAL STUFF

PEEL 4X4 CLUB BYLAWS

1. The trip leader will delegate the position of Safety/Recovery officer to another member prior to trip departure.
2. All members and visitors are to follow the Safety Officer's instructions at all times
3. No pets allowed on club trips.
4. Each club member is to be responsible for the safety and whereabouts of their own children.
5. Trip Leader responsibilities and Tail End Charlie role to be read out before each trip.
6. After 2 trips you must have adequate front and rear recovery points fitted to your vehicle and must have a UHF CB radio.
7. Vehicles without adequate front and rear recovery points are limited to scenic/social and easy rated trips.
8. All trips are to be rated scenic/social; easy; medium; hard and extreme. Visitors are not permitted on hard and extreme trip. Membership of the WA4Wd Assoc is required for attendance on hard and extreme trips.
9. Proceeds from fundraising will be used for club purposes.
10. A limit of 15 vehicles per trip will apply. Trip leader has the discretion to increase or decrease this number.
11. First in best-dressed, if in excess of 15 vehicles wish to attend a trip, based on prior confirmation.
12. Club bank account to hold a minimum of \$1000 balance. A portion of this amount may be used to purchase urgent items at the committee's discretion.
13. Whilst every care is taken, no responsibility is accepted.
14. Visitors must attend at least 2 trips, rated easy and/or medium, to qualify for membership. Scenic/social trips will not be counted.

PEEL 4X4 CODE OF ETHICS

1. Keep to the laws and regulations for 4wd vehicles. They may change from state to state.
2. All vehicles must have either comprehensive or third party fire and theft insurance.
3. Keep the environment clean. Carry your own and, maybe, other people's rubbish home.
4. Obey restrictions on use of public lands. Respect national parks and other conservation areas.
5. Obtain permission before driving on private land. Leave livestock alone and gates as found.
6. Keep your vehicle mechanically sound.
7. Take adequate water, food, fuel and spares on trips. In remote areas travel with another vehicle.
8. Respect our wild life. Stop and look but never disturb or chase animals.
9. Respect other recreationalists rights to peace and solitude in the bush.
10. Obey all fire restrictions. Extinguish your fire before leaving. Don't let your exhaust emit sparks.
11. Help in bushfire emergencies and search and rescue but only if you are properly equipped and able.
12. Support 4WD touring as a responsible and legitimate recreational activity.
13. All members should behave in a socially acceptable manner at all times.

This code is valuable only if you observe it



Club Shirts etc are now available from
Totally Workwear
Mandurah

T Shirts	(with logo and name)
Singlet	(with logo and name)
Hoody (zipped front)	(with logo and name)
Peak Cap	(with logo)
Beanie	(with logo)

T Shirts are the same as previous ones. If you know your size you can phone Totally Workwear with your order or call into the store and try one on. They have all our details on record.

Please see our Treasurer/Committee Members at the meeting if you have any questions.



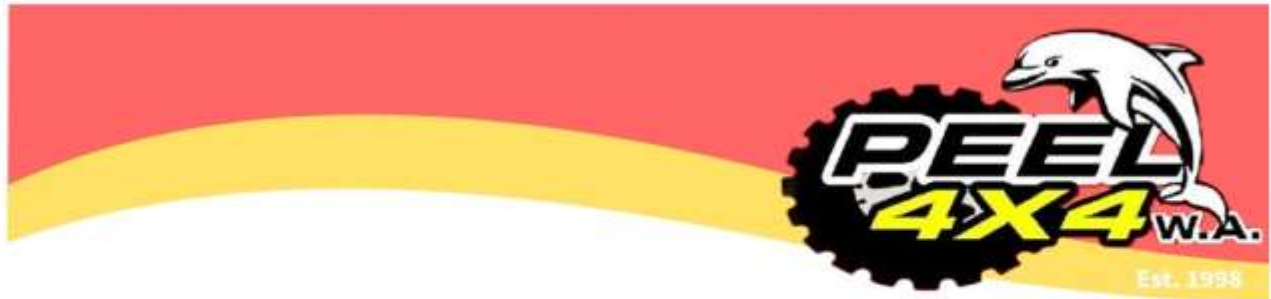
Peel 4x4 Club Property List

GENERAL

- ♦ BBQ & Gas Bottle
- ♦ Hand held UHF CB - Uniden UHO40XR (2)
- ♦ Magnetic Numbers (20)
- ♦ ARB Gazebo
- ♦ Wanderer Gazebo and side walls
- ♦ Fines Container
- ♦ Presidents Gavel
- ♦ Shower/Toilet Tent
- ♦ 4 Large pegs
- ♦ Peel 4x4 banner
- ♦ Peel 4x4 flag and stand (2)
- ♦ Beach volleyball net
- ♦ Laminated maps
- ♦ Santa suit

RECOVERY EQUIPMENT

- ♦ Pulley Block
- ♦ Tree Protector
- ♦ Bridal
- ♦ D shackles (3)
- ♦ Recovery Damper
- ♦ Large Grey Space Case



Containers for Change



After the AGM we made an account to donate the empty recycling containers to the club.

These funds can then be used towards our social functions or other agreed upon purchases for the club as something a little extra.

No obligation, and we understand people collect their own, but if you have any empty bottles or cans laying around please feel free to use the QR code or account





Peel 4 X 4

We are fundraising with
 Entertainment

**Buy
online
today!**



SCAN ME



**SHOW YOUR
SUPPORT**

Every Membership we sell, 20%
goes directly to our fundraising



A_1203

PRESIDENT'S PARABLE

Presidents Report

Hi Everyone,

We are coming up to our final General Meeting of the year, which means Christmas is fast approaching, along with the end of the year.

It has been a great year within the club. So far, we have seen several trips, including the ANZAC Day trip to Nungarin, which was voted trip of the year at the AGM. This saw the club getting active in the community again, which was a great experience.

We have seen a new committee voted in, changes to the digital age with EFTPOS now available (although we're still keeping ca\$h alive too – ca\$h is king...), and also the introduction of a technical segment at General Meetings.

With the wet weather now behind us, we have also recently seen the tracks that were closed over the winter periods being reopened.

Its time to start getting out & about a bit more, and what a better way, than with the Lancelin sand dunes trip coming up this Sunday.

I am expecting a few more trips to be proposed at the upcoming trip planning meeting, and will be proposing to lead a few myself.

Please don't feel scared leading a trip, everyone is there to help – not to judge.

Please also feel free to share suggestions on what you would like to see more of, including within the technical segment.

With the focus on the Dyneema rope of late, I am planning to have a demonstration on how to splice together a winch rope that has snapped.

To those unable to make it to the last General Meeting of the year, please have a safe & happy festive season.

Stay safe out on the tracks everyone, and I look forward to seeing you all on Wednesday night, 22nd November.

BRISEY'S BULLDUST

We have had a few technical demonstrations hosted by Gary at general meetings. I'm sure everyone will agree with me that they are very good and interesting. I hope Gary doesn't run out of ideas and expertise anytime soon and that others in the club will present a topic they are familiar with. At the last meeting Gary talked about lithium batteries which I added a few comments from my own knowledge (I felt like a heckler doing it), but I thought it would be a good entry point into a bit of research for the magazine. There is a lot of good information on the web and I have put some information in the Enlightening Elucidations section this month along with a bit about smart alternators and DCDC chargers.

Isn't it funny how sometimes the government provides rebates and benefits but don't go out of their way to tell anyone about it, must be so they can save the money if no one applies for them. We had the misfortune to need to contact the Department of Transport by phone the other day and during the 30 minutes on hold a message came on about how to claim the zero emission vehicle rebate. Hmmm I thought as I don't remember hearing about this so I did a search and found there is a \$3500.00 rebate for buying a battery only vehicle . The rebate ends in may 2025. When we put the new car in for the first service I asked if they knew about the rebate and was told no. You would think that at the very least the government would have told the dealerships about the rebate. Hmmm the government works in mysterious ways.

Brisey

MEETING MURMURS



GENERAL MEETING OF THE PEEL 4X4 CLUB

General Meeting Minutes

Date: 25th October 2023

Venue: Secret Harbour Surf Lifesaving Club



MEETING OPENED 7.33PM

1. CONFIRMATION OF ATTENDEES

ATTENDEES & VISITORS – As per the record book

APOLOGIES / PROXIES: As per the record book.

Visitors welcomed (six in total)

2. TRIPS SINCE LAST MEETING

- WW2 Tunnels, Trip Leader - Brian Tanner, Oct 22nd
- 24 People attended

3. CONFIRMATION OF MINUTES FROM PREVIOUS GENERAL MEETING – 27/09/2023

- Gary Mayes, President has accepted and signed the previous minutes for the meeting held on 27/9/23

4. BUSINESS FROM THE PREVIOUS MINUTES

- Nil

5. PRESIDENTS REPORT: Gary Mayes

- Nil to report
- **Business for the President** - No business for the President

6. SECRETARYS REPORT: Donna Light

- Nil to report
- **Business for the Secretary** - No business for the Secretary

7. TREASURERS REPORT: Cassie Mayes

- \$7130 in the account, All re-imbursements have been done. Julie Power is now a signatory to the bank accounts, along with Cassie Mayes. All accounts are now in the correct hands.
- **Business for the Treasurer** - No business for the Treasurer

8. INSURANCE OFFICERS REPORT: Dave Knudsen

- Has received the PDS for the National Insurance Policy.
- Important notes that the association insurance is for 3rd party insurance concerns, and only after a member has exhausted their own insurance.

9. PROPERTY OFFICERS REPORT: Phillip Crewe -

- Nil to report.
- **Business for the Property Officer:** Nil



GENERAL MEETING OF THE PEEL 4X4 CLUB

General Meeting Minutes

Date: 25th October 2023

Venue: Secret Harbour Surf Lifesaving Club



10. ENVIRONMENTAL OFFICERS REPORT: Peter Light

- Nil to report

Business for the Environmental Officer:

- Follow up reports that the beach access and the 4wd tracks in the Gin Gin Shire are planning to be closed, due to erosion.
- Lancelin Sand Dunes tracks also limited. EO to follow up

11. DELEGATES REPORT: Gary Mayes

- Waiting on Minutes to arrive from the associations recent meeting as our club didn't have a representative there.
- Gary Mayes is still going through the WA 4WD Constitution, and has indicated there are a couple of different memberships to come.
- Next meeting will be held on 5/11/23.

Business for the Delegate:

- Nil

12. MAGAZINE EDITORS REPORT: Brian Tanner

- New deadline for magazine had a satisfactory result.

Business for the Magazine Editor:

Send Cassie the public copy of the magazine.

13. WEBMASTERS REPORT: Cassie Mayes

- Website has been intermittent, the domain keeps dropping off Wix. Cassie has bought a new domain and we are now Peel4x4.com
- The consequence to this means we have now dropped down lower in Google searches.
- Cassie requested that all members please start googling Peel4x4.com, in order to raise the placement in Google searches.
- The web page is a work in progress, and is evolving.
- Website expires in January, with renewal being very expensive.
- There was a question as to whether we need a web page, and the visitors at the meeting were asked how they found us, with the majority saying they found us on FaceBook.
- Cassie is inviting everyone on an events page, where members can share stories and pics from trips to chats.
- Cassie is working on pinning events to the top of the FB page.
- Cassie is also working on pinning upcoming trips to the top on the FB page, or making our list of upcoming trips our cover photo.

- **Business for the Webmaster - Nil**



GENERAL MEETING OF THE PEEL 4X4 CLUB

General Meeting Minutes

Date: 25th October 2023

Venue: Secret Harbour Surf Lifesaving Club



14. TRIP COORDINATORS REPORT: (Gary Mayes)

- Saturday 11th November. Youth/Senior carnival, Will only require 2 vehicles as minimal gear to get down the beach (IRB/Boat trailers, gear trailers).
- 19th November, Lancelin Dunes - Knuddo
- Sunday 10th December. 12pm – 3pm Christmas party at Birdies Port Kennedy. - Need final numbers by November meeting.
- 30th December, Preston beach fishing, (to be confirmed) Mick
- 7th January – Trip Planning meeting – details TBA
- Sunday 14th January. Surf boat carnival, Will be good to get a good handful of members down as there is all the surf boats, Jet skis/Irb's, gear trailers. (This one is catered by the surf club)
- 24th Jan – 28th Jan, Australia Day trip to Northcliffe. Need final numbers and payment by November's meeting. \$20 per night unpowered, \$30 per night powered, No cabins. – Members to contact Cassie with any queries about this trip. Members can volunteer to do day trips, Brisey has a few trips for the area on OZi explorer that he will share with Gary.

Business for the Trip Coordinator: Nil

15. GENERAL BUSINESS:

- Minimum requirements for first aid kits were discussed at the committee meeting, and it was agreed that snake bite kits should be ordered and placed in each trip bag.
- Trip bags include – PLB's , Magnets for the cars, Sign in sheets and folder.
- Trip procedure forms have been updated to include headlights being on whilst in convoy, and marking corners is explained.
- New red cotton shirts are well liked by members, with some members wanting to order more. These shirts are \$55 from Totally Workwear, including embroidery and names.
- No General meeting in December, and the January Trip planning meeting will also be the January General Meeting.
- The Magazine may be a little late

16. TECHNICAL

- Lithium vs standard lead acid batteries.

17. NEXT MEETINGS:

GENERAL MEETING – Wednesday 29th October 2023. Secret Harbour Surf Life Saving Club.

Doors open at 7:00pm. Meeting starts at 7:30pm. Pizza for those interested.

COMMITTEE MEETING – 13th December

18. MEETING CLOSURE 8.26 pm, for technical presentation to begin.



GENERAL MEETING OF THE PEEL 4X4 CLUB

General Meeting Minutes

Date: 25th October 2023

Venue: Secret Harbour Surf Lifesaving Club



The minutes from this meeting have been verified as true & correct.

Gary Mayes

Peel 4x4 Club Chairperson

A handwritten signature in black ink, appearing to read "Gary Mayes".

Date: 05/11/2023



★HAPPY★ BIRTHDAY!

*To any Club Members or their
family having a birthday in
December and January*



TESTED TO DESTRUCTION

While browsing (lurking) around some 4x4 sites I came across some interesting recovery gear, one of which was the "Sand Grabber" They are a set of rubber blocks with reasonably heavy duty webbing straps that attach around a wheel. They seemed to work well in the video so I thought I would give them a go.



Seeing as I got stuck on the beach with the event trailer in tow at the recent surf carnival I thought it would be a perfect time to test them out.

They attach reasonably easily to the rear wheels but were a bit harder on the front of the Patrol due to not much clearance between the disc brake and the rim, I had to find the best spot around the wheel to attach them. It should be a lot easier next time now I know what I am doing :-)

Being fairly deep in the soft sand high on the beach with the trailer sunk down a bit as well not able to move in either direction it was a good test so to make it really hard for the things I didn't do any digging or disconnect the trailer. On the first attempt I tried to continue forward but I just dug in a bit deeper, next attempt was backward.

To say I was impressed would be an understatement, as soon as the wheels started moving in reverse the car and trailer started moving and came straight out.

The grabber that was on the front drivers side wheel broke but now thinking in hindsight, to be fair, I may not have tightened the belt correctly and I did use more accelerator than I really needed when I tried going forward.

Brisey



ENLIGHTENING ELUCIDATIONS

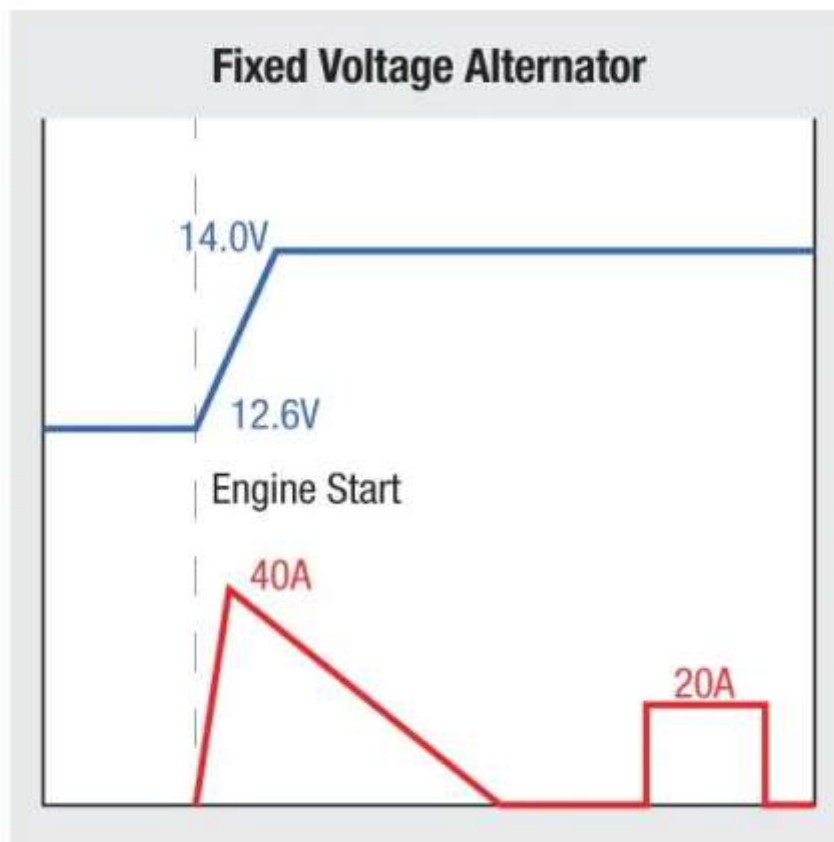
From Redarc

SMART ALTERNATOR VS FIXED ALTERNATOR

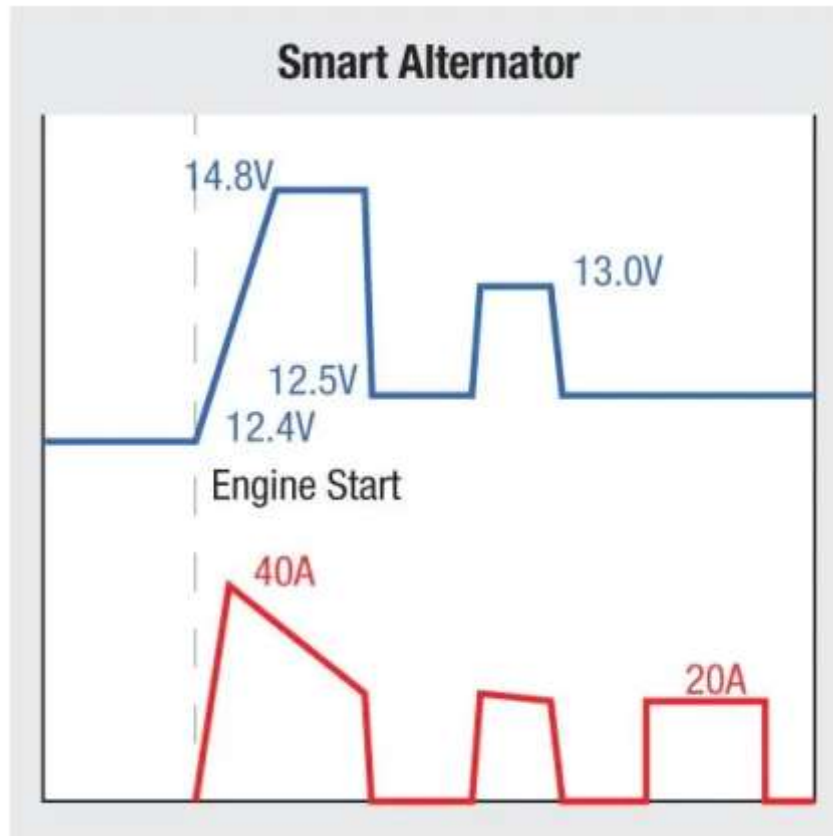
The alternator is the power supply for the vehicle for recovering the start battery from engine start and provide power to vehicle electrical consumers while running. There are two main types of alternators commonly used in today's vehicles, the traditional fixed voltage alternator and the modern smart alternator.

Fixed voltage alternators are becoming less common on new vehicles as reduced fuel consumption targets and more stringent emissions standards are adopted by manufacturers. A fixed voltage alternator has a high enough voltage to successfully charge a secondary battery in the vehicle to a usable level for leisure or auxiliary use.

The smart alternator system allows the vehicle to control the output voltage from the alternator based on vehicle operating conditions to reduce electrical load and in turn mechanical load on the engine by the alternator; this renders it unsuccessful at charging a secondary battery system to a usable level.



- A. Engine is not running, relatively full open circuit voltage of the start battery approx. 12.6V
- B. Engine is started, alternator produces current to raise system voltage. Current level will depend on alternator capacity, design, battery current acceptance, and engine speed at the time.
- C. The alternator regulator will aim to hold the target voltage, generally around 14V. Whilst not a full charging voltage, this selected voltage will be appropriate for maintaining the start battery and is not excessive for long term running at this voltage level.
- D. Current will flow into the start battery to recover it from the engine starting consumption and run loads that are on at the time. This current will decrease as the battery comes up in charge, generally this will occur within the first few minutes of run time.
- E. The current will be regulated from the alternator to maintain the target voltage, and can increase and decrease as loads are switched on and off.



A. Engine is not running, relatively low open circuit voltage of the start battery approx. 12.4V, as the system does not aim to achieve a full state of charge in the start battery. Specific battery types are used in this application in order to achieve good performance and service life when operating at partial charge for starter operation.

B. Engine is started, alternator produces current to raise system voltage. This voltage level can be very high to produce fast inrush of current into the battery to reduce start battery recovery time. Current level will depend on alternator capacity, design, battery current acceptance, and engine speed at the time.

C. The alternator regulator will aim to achieve the target voltage, generally upwards of 14.5V.

D. Current will flow into the start battery to recover it from the engine starting consumption and run loads that are on at the time. This current will decrease as the battery comes up in charge, generally this will occur within the first few minutes of run time. The voltage will be decreased when current flow into the start battery falls below a predetermined level, generally below 30A, meaning that the start battery is only partially charged, well enough for repeated starting.

E. The current will be regulated from the alternator to maintain the target voltage, and can increase and decrease as loads are switched on and off. The target voltage will change on factors such as temperature, electrical consumers, start battery state of charge, and engine load.

F. During acceleration and cruise the target voltage will be low, around the open circuit voltage of the start battery.

G. During deceleration the target voltage may be lifted to replenish any discharge of the start battery that may have occurred during acceleration and cruise.

Note: the output voltage and current levels from different alternator systems and vehicles will have varying characteristics. The descriptions here give a general view of the output types.

What is a DC-DC Battery Charger: All You Need to Know

By: Scott Adamson / July 14, 2022



Are you curious about a DC-DC battery charger and how it can benefit your campervan? Let's find out.

A stable supply of electricity in your van is vital, especially for long trips. It lights your van, powers up your switchboards and sockets, and activates your fridge, heating system, and water pumps.

There are several ways to charge your campervan batteries. The main ways to do that are:

- Alternator (DC-DC)
- Solar, and
- Shore Power (Plugging it in); this requires you have an inverter/charger.

One component that raises a lot of questions is the **DC-DC battery charger**. What is a DC-DC battery charger and why do you need it?

In this article, I'll cover the following topics:

- What a DC-DC battery charger is, its function, and its importance.
- A quick comparison between the DC-DC battery charger and other alternatives.
- Several popular brand choices for DC-DC battery chargers.

So, without further ado, let's get right into it!

What is a DC-DC Battery Charger?

In layman's terms

Your vehicle's alternator is what creates the electricity and charges the vehicle battery while you're driving.

When you have a campervan, you use that same alternator to charge your house batteries. These are the batteries that are used to power the components inside your campervan (lights, etc) and generally, these will be [Lithium](#) or [AGM batteries](#).



By default from the factory, your alternator is set up to know when your vehicle battery is charged and how much power the alternator needs to put out. It's not designed to know about the campervan conversion you have going on in the back.

That's where the DC-DC Battery Charger comes in.

Why do You Need a DC-DC Charger?

The reason you need a DC to DC charger is that most of the time your vehicle battery is a lead acid battery, so your alternator is designed to charge a lead acid battery. The charging profile to charge your house battery is different. So the DC to DC charger tells your alternator:

- What type of house battery do you have, and
- What are the charging requirements

In short, the DC-DC Battery Charger is the brain that tells your alternator *how* to properly charge your house batteries.

Alternator -> DC-DC Battery Charger -> House Battery

Direct Current (DC) Explained:

Let's also talk about DC (direct current) in more detail. Direct current, more commonly known as DC, is known for its constant voltage flow. In contrast, AC (alternating current) has a changing flow of voltage.

While most of our home appliances still work on AC, DC is more efficient and popular in small cars, boats, and vans. With the soaring popularity of solar power in vans, DC and DC-DC battery chargers have emerged as important players.

Here's how it compares.

- A DC-DC charger (also known as a battery to battery charger) converts the output from your primary battery and charges your secondary battery using optimal charging.
- Most typically, a single battery or a system of batteries is used to store the converted power.
- You can use the secondary batteries powered by a DC-DC charger for minor purposes (charging cellphones) and running major appliances such as your fridge.

Pro-tip: If you are an on-the-go van lifer travelling miles on the road, you can charge your secondary battery via the DC-DC converter quite efficiently.

How Does a DC-DC Battery Charger Work?

The DC-DC battery charger uses your van's alternator (an electrical generator) to convert the available power. It then converts that power to a higher voltage (Ah) for your secondary battery (i.e. your house battery).

Here's how the DC-DC charger uses a 3-step process to charge your battery optimally.

1. **Bulk:** In this step, the DC-DC battery charger converts the current from the alternator and fills in the secondary battery almost to the maximum.
2. **Absorption:** Here, the power levels off and stabilizes so the battery doesn't 'overcharge'.
3. **Float:** This occurs when the battery is fully charged with its optimal capacity reached.

What are the Benefits of Using a DC-DC Charger?

Now that you have a good idea about DC-DC chargers, let's look at a few benefits of installing one of these.

1. Overcome Issues With Smart Alternators

Most vans now come with smart alternators designed to minimize power output. This means they cannot charge a secondary battery with their load restriction. A DC-DC converter takes care of this problem by isolating the main battery from the alternator.

2. Maximizes Main Battery Charge

Another benefit of installing a DC-DC battery charger is its ability to maximize the charge of the main battery. The charger can convert an amperage of as low as 9 volts up to 13.5 volts to charge the main battery quickly and efficiently. You can get close to 100% charge on your main battery with a good day of driving.

3. Works Without Solar Power

DC-DC chargers are also a blessing in disguise if you mainly travel in areas without a lot of sunlight. DC-DC chargers can help charge the auxiliary battery to power your gadgets without worrying about solar power or other energy backup options.

4. Adapts to Different Batteries

One of the most important benefits of a DC-DC battery charger is that it adjusts for different battery types. This is useful as it can save you the time and cost of buying a different charger every time you replace your battery.

A DC-DC charger also adjusts the power based on what the battery is used for, minimizing damage to the battery through overcharging.

Can I Use a DC-DC Charger with Lithium Batteries?

Yes, you can definitely use a DC-DC charger with lithium batteries as it can optimize your battery life. A DC-DC charger can also extend your lithium battery life.

Here's how it compares.

- Lithium batteries absorb the maximum amount of power available which can quickly become an issue if you are charging directly from an alternator. This is because if the alternator already has a significant load, the lithium battery will add to this load, causing the alternator to burn out.
- A DC-DC charger effectively manages the power input in a lithium battery, making sure it doesn't heat up when overcharged.
- These batteries also have a different restart process and specific battery chemistry, making it difficult to charge them through alternative means such as an alternator.

If you are still deciding between AGM v Lithium batteries, this informative article can help you make the right decision: [AGM vs Lithium, Which Battery is best for Van Life?](#)



What Size DC-DC Charger Should You Get

Most commonly, batteries up to 200Ah require a DC-DC battery charger of around 25Ah. For ampere-hours exceeding 200, a 40-ampere DC-DC battery charger will work better.

If your alternator has a 200 amp rating, you'd want to take that number, and cut it in half and that would be the charged power. The reason it's recommended to run it at 50% is that you never want your alternator to be running at its maximum output load because it's really hard on the alternator and it wears them out.

To select the best size for your DC-DC charger, you should consider the following:

- **Alternator Size:** Typically, alternators range between 60 to 150Ah while DC-DC chargers vary between 6 to 40Ah. You need to get a larger charger for optimal usage if you have a high-powered alternator with more capacity.
- **Battery Type:** A DC-DC charger rated 20% of your battery's amperage would work fine for conventional batteries such as AGM and lead-acid batteries. With a lithium battery, you can go higher, to almost 30% of your battery's rated amperage.
- **Voltage:** It is recommended to match your charger with your van's electrical system. For example, if you have a 12-volt system (which is most common), you should go for a 12-volt DC-DC charger.
- **Usage:** Your energy usage also plays a part in determining your DC-DC charger size. If you use several appliances with your auxiliary battery, you will need a DC-DC charger.

Popular DC DC Charger Brands and their Cost

Now that you have an idea of how DC-DC battery chargers work, you may wonder which is the best brand to buy. To give you a heads up, several good brands are out there catering to different customer needs.

Here's how they measure against each other.

Red Arc (Our Recommendation)



In my opinion, Red Arc is the brand that you should go for. There are a few key features that set this brand apart.

- It works smoothly with several battery types, including GEL, AGM, and lithium.
- Includes additional features such as solar regulation, allowing users to prioritize charging options from different power supplies (solar vs. battery).
- It has a reliable built and can stand up to extreme temperatures and climate.
- Works with both 12 volts and 24-volt system

Price: The [REDARC Electronics Dual Input 25A in-Vehicle DC Battery Charger](#) costs around \$410.

Victron



Victron DC-DC chargers such as the [Orion-Tr Smart](#) isolated/non-isolated are one of the most popular brands in the market right now with the following features:

- Works well with both 12-volt and 24-Volt systems and lithium and lead-acid batteries.
- Includes Bluetooth so you can control the power settings from the comfort of your cellphone via an application.
- It is durable and can adapt to high temperatures.

Price: The Victron Orion-Tr Smart 12 V 30 Amp Non Isolated costs around \$230.

Sterling



Sterling is another popular name that many van enthusiasts choose when it comes to DC-DC battery chargers. Here are its key features:

- It comes in three variations: 40 A, 70 A, and 120 A with a 12 Volt option, hence catering to a large variety of customers
- Works well with smart alternators with an in-built vibration sense mode.
- It is Lithium compatible and includes a low-temperature trip for lithium-ion batteries.

Price: The [Sterling Power Pro Ultra Charge](#) costs \$350 with a 5-year warranty.

Renogy



Renogy is known for its cheap yet decent quality in the market. Here are some of its best features:

- Its flexible design ensures the safety and improves usability in different conditions.
- Renogy offers several layers of safety, including over-voltage and reverses polarity protection, safeguarding the batteries from overcharge.
- It is compatible with lithium, lead-acid, and AGM batteries.

Price: The [Renogy 12V 40A DC to DC](#) costs around \$160, while the [Renogy 12V 60A Dc to Dc](#) costs approximately \$200.



Key Takeaways

Here's a brief overview of what this article discussed:

- The DC-DC Battery Charger is the brain that tells your alternator *how* to properly charge your house batteries.
- A DC-DC charger can maximize charging to 100% and optimize your auxiliary battery's life.
- Lithium batteries work well with DC-DC chargers as it efficiently manages the power input.
- A DC-DC charger size depends on your usage, voltage, and battery life. As a general rule of thumb, a 200 Ah battery requires a 25 A DC-DC charger, while bigger batteries require a 40 A charger.
- **Recommendation:** You should choose [RedArc](#) to buy the best DC-DC charger suited for your needs.

Now that you have sufficient knowledge on this subject, you can confidently choose the best DC-DC charger that suits all your needs!



Scott Adamson

Wonderful Idea Guy

Coffee drinker, adventure seeker, below average photographer.



CAN YOU CHARGE A LITHIUM BATTERY WITH A LEAD ACID CHARGER?



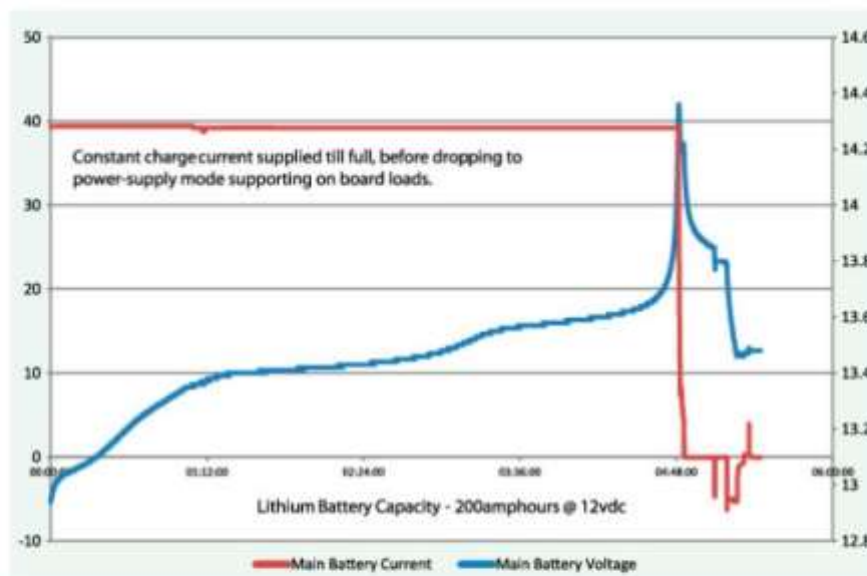
Can a lithium battery be charged with a lead acid charger?

This is a question we get asked every day. Lithium batteries different to lead acid batteries and not all battery chargers are the same.

A 12v lithium LiFePO4 battery fully charged to 100% will hold voltage around 13.3-13.4v. Its lead acid equivalent will be approximately 12.6-12.7v. A lithium battery at 20% capacity will hold voltage around 13V, its lead acid cousin will be approximately 11.8v at the same capacity. As you can see, there is very narrow window of voltage with lithium, less than 0.5V over 80% capacity.

A Lithium LiFePO4 charger is a voltage-limiting device that has similarities to the lead acid system. The differences with Li-ion lie in a higher voltage per cell, tighter voltage tolerances and the absence of trickle or float charge at full charge. While lead acid offers a degree of flexibility in terms of voltage cut off, manufacturers of LiFePO4 cells are very strict on the correct setting because Li-ion cannot accept overcharge.

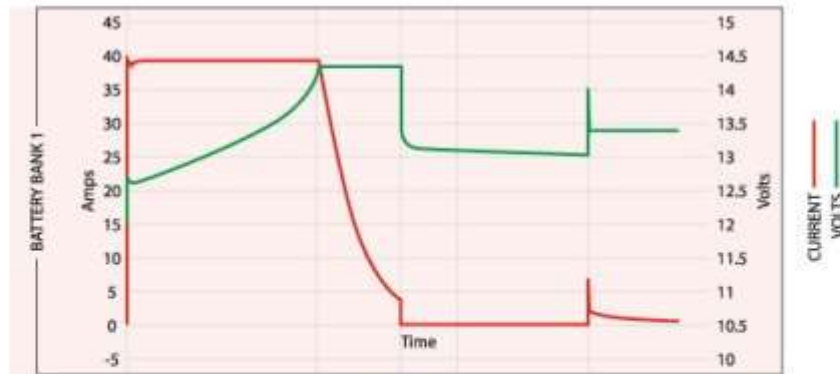
Lithium chargers are based on a constant voltage/constant current charge algorithm. The charger limits the amount of current to a pre-set level until the battery reaches a pre-set voltage level. The current then reduces as the battery becomes fully charged. This system allows fast charging without the risk of over-charging and is suitable for Li-ion and other battery types.



Enerdrive's ePOWER Lithium Charger Algorithm

The lithium battery has a steep rise in voltage at the very end of the charge cycle. At this stage the charge current drops extremely quickly and the charger then switches to power supply mode.

The majority of the lead acid smart chargers have specific charge algorithms to suit Flooded/AGM/Gel batteries which require a 3 stage charge process, Bulk/Absorption/Float. Once the charger enters the bulk state, it will normally charge a lead acid battery at full current to approximately 80% capacity. At this point the charger will transition to the Absorption stage.



Typical Lead Acid Charger Algorithm

In this charge phase the charger will hold the maximum voltage for the chosen battery and charge the battery with reduced current as the batteries internal resistance can't accept the charge current at maximum output. Once the current reduces to approximately $\leq 10\%$ of the chargers total output, it will then move to the float state. The absorption stage is also time based, if the charger is still in its absorption phase after 4 hours, the charger will automatically transition to the float stage. This happens if the charger is undersized for the battery bank or there are loads running on the system and not allowing the charger to reduce the current below the transition point.

Most if not all lead acid chargers have an equalization mode. On some chargers, this mode may be automatic which can't be turned off. Lithium batteries do not require any form of equalization. Applying an equalization charge of 15v+ to a lithium battery will damage the cells beyond repair.

The other function that lead acid chargers have is a "return to bulk" voltage. A 100% full lead acid batteries voltage is approximately 12.7v. Once the charger is in Float, it will maintain the battery at a pre-set voltage and also support any loads running at the time. If the loads increase past the chargers maximum output in float, then the battery voltage will start to reduce. Once the voltage reaches the "return to bulk" voltage, the charger will then start a new charge cycle and start re-charging the battery.

The "return to bulk" voltage setting in lead acid chargers is normally 12.5-12.7v. This voltage for a lithium battery is way too low. At this voltage the lithium battery will have been depleted to approximately 10-15% state of charge. Lithium charge algorithms will normally set a return to bulk voltage of 13.1-13.2V. Just another reason that a standard lead acid charger doesn't suit lithium batteries

Some lead acid chargers "ping" the battery on startup to determine the voltage/resistance of the battery. Based on return information, the charger then determines what charge phase to start in. Because lithium will hold voltage above 13+v, some lead acid chargers will see this as a near full battery and enter into a float stage and bypass the charge stage all together.

If you want to use a lead acid charger on a lithium battery you can, HOWEVER, you must NOT use a lead-acid charger if it has an automatic "equalisation mode", which cannot be permanently turned off. A lead-acid charger that can be set to charge no higher than 14.6v can be used for regular charging and then MUST be disconnected after the battery is fully charged. DO NOT leave the lead-acid charger connected to maintain or store the battery, because most will NOT maintain the proper voltage charge algorithm for lithium batteries and damage will occur to the battery and this is not covered under battery warranty.

Ultimately, using a battery charger with a specific Lithium charge algorithm is the best option for maximum performance and lifespan of any lithium battery.

Original article posted by Enerdrive

BREKKY OF CHAMPIONS

Fuel up for a big day on the tracks with this awesome mixed grill brekky that Jamie cooks on the CasusGrill from myCOOLMAN



WHAT YOU'LL NEED

- 500g Beef Mince
- Worcestershire Sauce
- 1 Can Diced Tomatoes
- 1 Can Kidney Beans
- 1 Onion
- 4 Rashers Bacon
- Maccas Great Barrier Beef Rub
- 1 Bag of Corn Chips
- 1 Bag of Mozzarella Cheese
- Sour Cream
- 2 Avocados
- Lime Juice
- Paprika
- Aluminium Foil Containers



HOW IT'S DONE

1. Heat your grill up
2. Season the steak with plenty of salt and a touch of pepper to your taste
3. Slice your potato nice and thin so it goes crispy
4. Prepare a couple of small 'egg trays' out of aluminium foil so your eggs don't run into the coals
5. Whack the steak and sausage onto the grill, with the potatoes.
6. Crack your eggs into the trays, and start grilling the bacon.
7. Brew another cup of coffee
8. Once everything is cooked to your liking, load it onto a plate and enjoy!

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TRIPPING OUT

Leighton Battery WW2 Tunnel Tour

24 people turned up, what a turn out! And everyone was on time (just). After paying the entry fee and watching a short video we split into 3 groups for the guided tour around the guns on the surface of the complex before descending into the tunnels. This part of the tour is self guided with recorded commentary and semi automatic lighting as we moved from room to room. Each room is fitted out with equipment and mannequins as you would have expected from the era. A tour guide met our group back at the surface but before answering any questions he told us off for talking and making so much noise through the tunnels that we couldn't have heard the commentary.

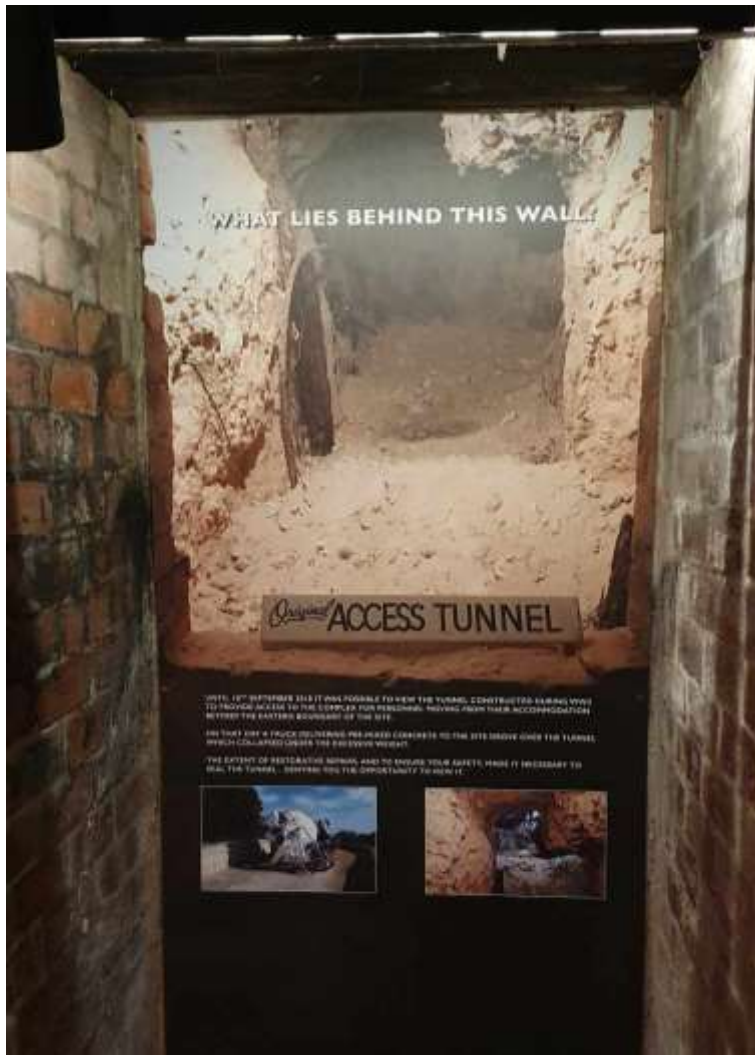
After regrouping back at the carpark The trip was officially ended with some opting to go to the pub for lunch and the rest of the group drove to Chidley Reserve for a picnic on the bank of the river. We all packed up after a couple of hours to head home before the rain started

Brisey

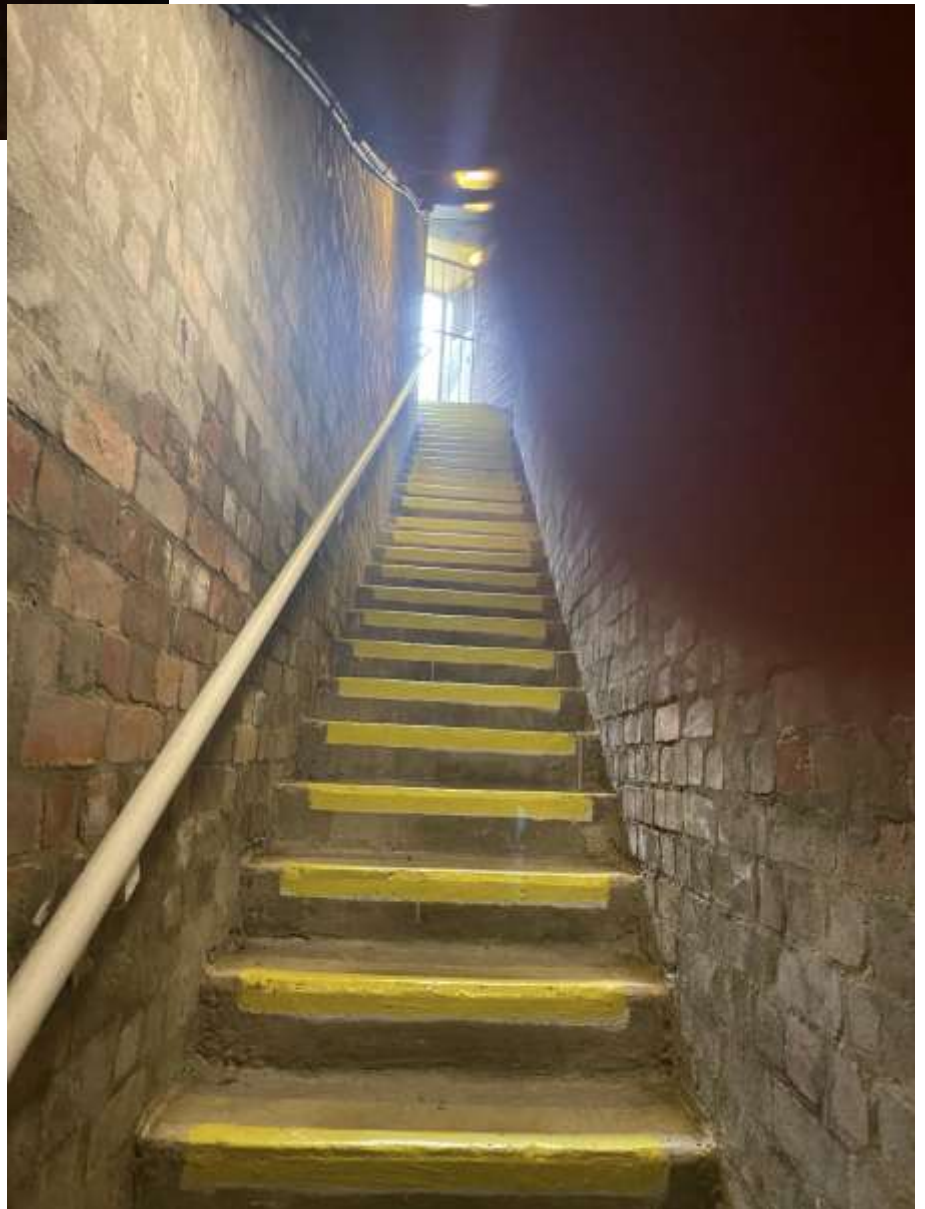














Secret Harbour Surf Carnival

Being a Nippers carnival this time there were no surf boats to tow onto the beach just a few gear trailers and rescue craft. At the start Phillip, Steven and Julie assumed traffic control duties and Gary was the co-ordinator for the day. Tom and lee, our latest club visitors, and myself did the towing. The towing duties were over fairly quickly so everyone opted to go home leaving Gary and I to take care of the removal at the end of the carnival. To fill in time Gary and I spent a couple of hours with the laptops going over the operation of Oziexplorer and the tracks I have suggested for the Australia Day trip.

All went well with removing the trailers from the beach until the last one being the mobile events trailer. This was taken down by the surf club members and placed high up on the beach near the soft stuff and of course there were people set up all around it and the only way to go was further up the beach. Needless to say I held up my tradition of getting stuck. Not all bad now I had the chance to test out my new recovery gear, see the Tested to Destruction page for a review.

Brisey









Know before you go with Main Roads Travel Map.

PLAN YOUR TRIP TO AVOID DELAYS.

Travel map contains live, up to date information on road conditions, closures and other incidents that may impact road use. Main Roads provides this information through its wide network of information sources and local reports to provide the most accurate and informative data possible.



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WESTERN AUSTRALIA

2024 SCHOOL TERM DATES

WA

Semester 1

Term 1 Wed 31 January – Thurs 28 March

Break Fri 29 March – Sun 14 April

Term 2 Mon 15 April – Fri 28 June

Break Sat 29 June – Sun 14 July

Semester 2

Term 3 Mon 15 July – Fri 20 September

Break Sat 21 September – Sun 6 October

Term 4 Mon 7 October – Thu 12 December

NT

2024

^

Term	Start	Finish
Term 1	Tuesday 30 January • for teachers, Monday 29 January	Friday 5 April
Term 2	Monday 15 April	Friday 21 June
Term 3	Tuesday 16 July • for teachers, Monday 15 July	Friday 20 September
Term 4	Monday 7 October	Friday 13 December

Gunbalanya School operate on a flexible school year and separate consultation occurs to determine school term dates.

SA

2024	29 January to 12 April	29 April to 5 July	22 July to 27 September	14 October to 13 December
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01 23-25 FEB
BATHURST 500
 MOUNT PANORAMA, NSW

02 21-24 MAR
MELBOURNE SUPERSPRINT
 FORMULA 1® ROLEX AUSTRALIAN GRAND PRIX
 ALBERT PARK, VIC

03 19-21 APR
ITM TAUPŌ SUPER400
 TAUPŌ INTERNATIONAL MOTORSPORT PARK, NZ

04 17-19 MAY
PERTH SUPERSPRINT
 CARCO.COM.AU RACEWAY, NEERABUP, WA

05 14-16 JUN
BETR DARWIN TRIPLE CROWN
 HIDDEN VALLEY RACEWAY, NT

06 5-7 JUL
NTI TOWNSVILLE 500
 RED PARK STREET CIRCUIT, QLD

07 19-21 JUL
BEAUREPAIRES SYDNEY SUPERNIGHT
 SYDNEY MOTORSPORT PARK, NSW

08 16-18 AUG
NED WHISKY TASMANIA SUPERSPRINT
 SYMMONS PLAINS RACEWAY, TAS

09 20-22 SEP
PENRITE OIL SANDOWN 500
 SANDOWN RACEWAY, VIC

10 10-13 OCT
REPCO BATHURST 1000
 MOUNT PANORAMA, NSW

11 25-27 OCT
BOOST MOBILE GOLD COAST 500
 SURFERS PARADISE STREET CIRCUIT, QLD

12 14-17 NOV
VAILO ADELAIDE 500
 ADELAIDE STREET CIRCUIT, SA

Event formats and dates are subject to change. Correct at the time of release 11/1/23.
 Go to Supercars.com for the latest version.

21



MAR 21, 2024 AT 7 AM – MAR 24, 2024 AT 3 PM UTC+08

Perth Caravan & Camping Show 2024 (Official Event)

Claremont Showground

TRIP CALENDAR

PROPOSED PEEL 4X4 CLUB TRIP CALENDAR 2023 FROM THE TRIP PLANNING MEETING

JANUARY

26 KOORDA DRIVE-IN
23-27 KALGAN RIVER

FEBRUARY

1 SCHOOL STARTS
12 OZIEXPLOER WORKSHOP
25 SOCIAL GATHERING

MARCH

03 MOVIE NIGHT
04 & 05 DRAG RACING
12 WHITEHILLS FISHING
14-19 CAMPING SANDY CAPE
19 DAY TRIP FOR DISABLED KIDS

APRIL

06 SCHOOL ENDS
29-25 NUNGARIN ANZAC DAY
24 SCHOOL STARTS
28-29 4WD ASSOC GATHERING

MAY

13 DWELLINGUP NIGHT TRIP
21 North Bannister
27 AGM

JUNE

03-04 SWAG TRIP
11 WILBINGA
30 SCHOOL ENDS

JULY

01 SOCIAL GATHERING
15-16 NANNUP CAMPING
23 BRUNSWICK HILLS
17 SCHOOL STARTS

AUGUST

6 MORNINGTON ROAD
20-29 KURARA RANGES
27 COLLIE MURAL TRAIL

SEPTEMBER

09 NORTH BANNISTER
22 SCHOOL ENDS
22-25 STATION STAY KINGS BIRTHDAY

OCTOBER







07 10 PIN BOWLING
09 SCHOOL STARTS
14-15 CAR RALLEY
22 WW2 TUNNELS

NOVEMBER

19 LAWN BOWLS
26 LANCELIN SAND DUNES

DECEMBER

10 CHRISTMAS PARTY
14 SCHOOL ENDS
30 FISHING PRESTON BEACH OVERNIGHT

Trip Name	Lancelin Sand Dunes	
Date	19 th November	
Trip Leader	Rob Baxter	
Trip Rating	Medium	
Trip Name	Christmas Party	
Date	10 th December	
Trip Leader	Committee	
Trip Rating		
Trip Name	Preston Beach overnight fishing	
Date	30 th December	
Trip Leader	Steve Power	
Trip Rating		
Trip Name	Trip Planning Meeting	
Date	7 th January 2024	
Trip Leader		
Trip Rating	Hard as	
Trip Name	Surf Carnival	
Date	14 th January	
Trip Leader		
Trip Rating	Medium	
Trip Name	AGM	
Date	27 th July 2024	
Trip Leader		
Trip Rating	Extreme	
Trip Name		
Date		
Trip Leader		
Trip Rating		
Trip Name		
Date		
Trip Leader		
Trip Rating		