

THE TRACK DAY CHECKLIST – Edition 2

The original Track Day Checklist has been updated to this Edition 2. It now includes additions and modifications suggested by various members of BMW Club Queensland, Australia, the author's own car club. Thankyou to Richard, Simon, David, Chris and Andrew.

The Track Day Checklist is intended to provide a reasonably comprehensive list of things that should be addressed before and during a track day. A "track day" here means a day when you drive your car, mostly a road registered car, on some sort of race track other than at an organised meeting of race cars. Track days are commonly organised by car clubs or individuals for fun, competition, car testing & tuning, driver training and the like.

Rod Dawney has been involved in Club-type motorsport in Australia on both two wheels and four, including numerous track days, since 1972. He is a reasonably accomplished amateur mechanic, and is a keen student of racecraft.

He has personally seen others, or himself, experience issues with over 80% of items on the checklist. Some issues have even lead to accidents and catastrophic parts failure. Once you know your car, or your car is very new, some of these items may not have to be checked every track day. Even so, it is good practice to consider them often, a bit like the pilot's checklist that must be completed every time they fly, no matter what.

The checklist is set out in three sections:

- Before You Leave
- What to Take
- At the Track

Beside the checklist items are brief explanations and/or further descriptions.

Feedback is welcome. Notification of any errors or omissions, and suggestions for additions or modifications, will lead to a further enhanced Edition 3.

It is hoped that you find the Track Day Checklist useful.

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Disclaimer

The Track Day Checklist is a set of guidelines to be used at your own risk. The author accepts no responsibility whatsoever for anything arising out of use of the material in this document.

BEFORE YOU LEAVE:

FLUIDS

CHECKLIST	COMMENTS
<input type="checkbox"/> No fluid leaks	<ul style="list-style-type: none"> • Oil leaks put oil on the track, which lessens traction. If small leaks become large leaks from the strain of track driving, the loss of traction can become dangerous. • Low oil levels in various vehicle components can lead to accelerated wear, damage or catastrophic failure. Coolant leaks can lead to loss of traction and engine overheating.
<input type="checkbox"/> Engine oil & filter are well within their service life	<ul style="list-style-type: none"> • Oil in good condition enables the engine to better handle the extra strain of track driving.
<input type="checkbox"/> Brake fluid is fresh and of high quality (DOT4 equivalent or better)	<ul style="list-style-type: none"> • The boiling temperature of brake fluid commonly decreases with age, and combined with the extra high heat generated by braking on the track, this can lead to brake fade. Brake fluid should preferably be changed just before any track day.
<input type="checkbox"/> Check fluid levels: <ul style="list-style-type: none"> <input type="checkbox"/> engine oil <input type="checkbox"/> power steering <input type="checkbox"/> clutch <input type="checkbox"/> brakes <input type="checkbox"/> gearbox <input type="checkbox"/> differential <input type="checkbox"/> coolant <input type="checkbox"/> battery <input type="checkbox"/> windscreen washer bottle 	<ul style="list-style-type: none"> • These items would appear obvious, but it is surprising how often these levels are not correct.

BEFORE YOU LEAVE (cont.)

FUEL

<input type="checkbox"/> Fuel filter is within its service life	• Fuel starvation at high revs can occur if the filter is partly clogged. You won't notice this during everyday driving.
<input type="checkbox"/> Fresh petrol is obtained on the day	• As petrol ages, it loses some of its volatile components, and hence its power.
<input type="checkbox"/> No leaks or smell of petrol	• It is obviously dangerous to have petrol or petrol vapour around.
<input type="checkbox"/> Spare fuel	• Consider a container of spare fuel if it is possible that the car will run low on a track day.
<input type="checkbox"/> Siphon hose or funnel for spare fuel	• Commonly difficult to pour fuel from a can into the car without these.

ENGINE

<input type="checkbox"/> In good condition	• Obvious.
<input type="checkbox"/> In tune	• Especially not running lean at high revs.
<input type="checkbox"/> Hoses in good condition and securely fastened.	• The extra strain of track driving is the ideal time for any weakness to lead to failure.
<input type="checkbox"/> Belts in good condition and properly tensioned.	• Obvious.
<input type="checkbox"/> No oil leaks	• Obvious.
<input type="checkbox"/> Air filter in good condition	• Promotes optimum performance.
<input type="checkbox"/> Plugs in good condition	• Promotes optimum performance.
<input type="checkbox"/> Battery well secured	• And don't forget to check that its breather is in place and correctly located.
<input type="checkbox"/> Engine and transmission mounts	• These take a lot of strain on track days and are prone to fail as a vehicle ages.
<input type="checkbox"/> Exhaust system in good condition	• No leaks or rattles, and well secured. Performance is particularly decreased if internal parts are faulty.
<input type="checkbox"/> Throttle returns readily when accelerator pedal is let up	• A sticking throttle is not a good thing to have on the track! A supplemental throttle return spring is a good idea, and a requirement for some events.

BEFORE YOU LEAVE (cont.)

COOLING SYSTEM

<input type="checkbox"/> No leaks	<ul style="list-style-type: none"> • Cooling efficiency needs to be at an optimum level.
<input type="checkbox"/> Temperature gauge is operative	<ul style="list-style-type: none"> • Rising temperature is commonly the first sign that something is not right with the engine. DON'T ignore it.
<input type="checkbox"/> Hoses in good condition and well fastened	<ul style="list-style-type: none"> • The extra strain of track driving is the ideal time for any weakness to lead to failure.
<input type="checkbox"/> Radiator in good condition	<ul style="list-style-type: none"> • Same as above.

TYRES

<input type="checkbox"/> Check wheel studs/nuts	<ul style="list-style-type: none"> • Very important to check. A surprising number of people have found loose wheel nuts.
<input type="checkbox"/> Suitable tyres with sufficient tread for the day (or extra tyres)	<ul style="list-style-type: none"> • Don't forget that sufficient tread should be left for the safe and legal drive home from the track.

BRAKES

<input type="checkbox"/> Brake hoses	<ul style="list-style-type: none"> • Check for leaks, rub marks, and other signs of deterioration, such as bulges under pressure (check with engine running and foot on the brake pedal). • Perhaps consider braided lines.
<input type="checkbox"/> Performance-type pads	<ul style="list-style-type: none"> • Pads must be suitable for the higher operating temperatures of track driving, otherwise brake fade can occur.
<input type="checkbox"/> Brake lights working brightly	<ul style="list-style-type: none"> • So others on the track clearly know when brakes are applied.
<input type="checkbox"/> Ducting to cool front brakes (if not already fitted)	<ul style="list-style-type: none"> • Worth considering.

BEFORE YOU LEAVE (cont.)

TRANSMISSION / DRIVETRAIN

<input type="checkbox"/> In good condition	• Obvious.
<input type="checkbox"/> No noises or vibration	• Noise and vibration normally indicate worn parts.
<input type="checkbox"/> No leaks.	• Obvious.
<input type="checkbox"/> Rubber boots intact	• Split or torn boots allow in dirt and water, reducing the life of those parts.
<input type="checkbox"/> Gear change linkages in good condition	• Worn gear linkages reduce the precision of gear changes, and combined with the faster changes and extra g-forces of track driving, can lead to missed gears and breakages.

SUSPENSION AND STEERING

<input type="checkbox"/> Check for worn components: <input type="checkbox"/> wheel bearings <input type="checkbox"/> shock absorber (damper) mounts <input type="checkbox"/> shock absorber or suspension bump stops <input type="checkbox"/> tie-rod ends <input type="checkbox"/> ball joints <input type="checkbox"/> suspension bushes <input type="checkbox"/> steering rack	<ul style="list-style-type: none"> • For safety and better handling. • Bump stops in good condition reduce the chance of damage if the suspension bottoms out.
<input type="checkbox"/> Wheel alignment	• For better handling and optimum tyre wear.
<input type="checkbox"/> Quality shock absorbers	• For safety and better handling.

BEFORE YOU LEAVE (cont.)

SAFETY

<input type="checkbox"/> Fire extinguisher		• Properly secured and within reach of the driver (use a metal mounting bracket).
<input type="checkbox"/> Supplementary bonnet restraint		• Reduces the chance of the bonnet un-latching and flying up to block the drivers view. A requirement for many events.
<input type="checkbox"/> Seat belts in good condition		• Obvious.
<input type="checkbox"/> Race harness		• Not strictly necessary for most track days, but worth serious consideration for extra safety and particularly for good driving technique (holds the driver in place when cornering, promoting greater control of the car).
<input type="checkbox"/> Battery terminals taped up if they do not have insulating covers		• Reduces the chance of shorting out and sparking. A requirement under certain scrutineering regimes.
<input type="checkbox"/> Battery location marker (on external body)		• If the battery needs to be found in a hurry, it is good to know exactly where it is. Also, it is a CAMS ¹ requirement for most speed events.

BODY

<input type="checkbox"/> Panels well secured	• Particularly body kit components such as spoilers, skirts, etc.
<input type="checkbox"/> Mirrors adjusted	• Using mirrors is an essential part of safe track driving.

INSURANCE

<input type="checkbox"/> Race Extension Third Party Insurance	• CTP insurers offer this at little or no cost.
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WHAT TO TAKE:

APPAREL

<input type="checkbox"/> Driving suit or long sleeve shirt/long pants	<ul style="list-style-type: none"> • Fire retardant material or natural fibre cloth, to cover to neck, wrists and ankles.
<input type="checkbox"/> Helmet - of the appropriate Australian Standard	<ul style="list-style-type: none"> • Obvious.
<input type="checkbox"/> Driving shoes	<ul style="list-style-type: none"> • Enclosed shoes or proper driving shoes.
<input type="checkbox"/> Gloves	<ul style="list-style-type: none"> • The right gloves enhance steering wheel grip (especially when sweating), and they keep hands protected in case of fire.
<input type="checkbox"/> Overalls	<ul style="list-style-type: none"> • Protects clothes or driving suit if you have to get under the car. • They are also useful as neck/wrist/ankle attire for passenger rides if the prospective passengers are not prepared.

GENERAL

<input type="checkbox"/> Appropriate tools	<ul style="list-style-type: none"> • Up to the individual.
<input type="checkbox"/> Spares as appropriate	<ul style="list-style-type: none"> • Up to the individual.
<input type="checkbox"/> Tyre pressure gauge	<ul style="list-style-type: none"> • Tyre pressures are important for safety, and critical for performance.
<input type="checkbox"/> Tyre pump	<ul style="list-style-type: none"> • To adjust tyre pressures.
<input type="checkbox"/> Electrical multimeter	<ul style="list-style-type: none"> • To help track down electrical problems.
<input type="checkbox"/> 12v electrical wire/cutter/ends/etc	<ul style="list-style-type: none"> • For running repairs.
<input type="checkbox"/> Duct tape/race tape	<ul style="list-style-type: none"> • For running repairs.
<input type="checkbox"/> Electricians ties - various sizes	<ul style="list-style-type: none"> • For running repairs.
<input type="checkbox"/> Stopwatch with lap timer	<ul style="list-style-type: none"> • An important tool for improving lap times.
<input type="checkbox"/> Engine oil	<ul style="list-style-type: none"> • For top up if necessary.

WHAT TO TAKE (cont.) - GENERAL

<input type="checkbox"/> Self-sealing tape	• For running repairs.
<input type="checkbox"/> Epoxy putty	• For running repairs.
<input type="checkbox"/> Rags	• For running repairs.
<input type="checkbox"/> Torch/trouble light	• For running repairs.
<input type="checkbox"/> Tie-wire	• For running repairs. Should be suitable for exhaust repair.
<input type="checkbox"/> Jumper cables	• For starting when battery is flat.
<input type="checkbox"/> Jack & jack stands	• For safety for under-car running repairs.
<input type="checkbox"/> Licences - Normal driver's and CAMS¹/AASA²	• Check expiry date.
<input type="checkbox"/> Drinking water (plenty) and food	• Dehydration is to be avoided. It significantly reduces your track driving ability. Food is for comfort.
<input type="checkbox"/> Snatch-em strap/shackle	• Perhaps not everyone needs one, however there should be one in the group ready to retrieve vehicles if towing is needed. They are a lot less likely to damage a vehicle than a wire cable or chain.
<input type="checkbox"/> Hat/sunscreen	• You can spend a lot of time in the sun on a track day.
<input type="checkbox"/> Rain jacket/umbrella	• It does rain at race tracks.
<input type="checkbox"/> Broom for sweeping your pit bay	• To minimise the amount of dust, sand and grit around your car.
<input type="checkbox"/> Glass cleaner and cloth	• For keeping the windscreen clean. Also useful for getting the last remnants of 'numbers' that may have been painted on glass. Can be used as a hand cleaner if you don't want to go to a tap.
<input type="checkbox"/> Hand cleaner	• To clean up hands after messy repairs, even if it is someone else's car.
<input type="checkbox"/> Cotton gloves	• To keep hands clean.
<input type="checkbox"/> Folding chair	• To 'relax' between sessions on the track.
<input type="checkbox"/> Spare coolant	• In case a top up is required.

AT THE TRACK:

ENGINE

<input type="checkbox"/> Keep an eye on engine temperature	<ul style="list-style-type: none"> Rising engine temperature is commonly the first sign that there is something wrong with the engine, or that it is not suited to track driving.
<input type="checkbox"/> Check engine oil level throughout the day	<ul style="list-style-type: none"> Obvious.
<input type="checkbox"/> Check for fluid leaks throughout the day	<ul style="list-style-type: none"> Leaks are a common early-warning sign that something is not right. Plus, it is dangerous for everyone on the track to have fluid leaking onto the surface.

TYRES

<input type="checkbox"/> Fit track tyres if applicable	<ul style="list-style-type: none"> Track tyres are made for track conditions. Grip levels are much higher than road tyres and they remain more stable.
<input type="checkbox"/> Set tyre pressures appropriate for track	<ul style="list-style-type: none"> Correct tyre pressures are critical for fast and safe track driving.
<input type="checkbox"/> Check pressures when tyres are hot throughout the day	<ul style="list-style-type: none"> Hot pressures are the ones to get correct.
<input type="checkbox"/> Check for wear throughout the day	<ul style="list-style-type: none"> Some tyres wear very fast with track driving, and you don't want to have a tyre deflate on the track because it has worn through..
<input type="checkbox"/> Check that wheel studs/nuts are tight	<ul style="list-style-type: none"> A point that is overlooked more often than you think.
<input type="checkbox"/> Drive appropriately with road tyres	<ul style="list-style-type: none"> Remember that the grip level of road tyres can decrease quite rapidly under hard driving conditions. It's best to drive in short stints and avoid overheating road tyres.

BRAKES

<input type="checkbox"/> Check for pad wear throughout the day	<ul style="list-style-type: none"> Some pads wear very fast under track driving conditions.
<input type="checkbox"/> Avoid brake rotor warping	<ul style="list-style-type: none"> If you come into the pits after a session with very hot brakes, roll the car back and forth to let heat dissipate more evenly from the rotors to avoid warping. Only seems to apply to some cars with certain drivers.

AT THE TRACK (cont.) - BRAKES

<input type="checkbox"/> Monitor brake fluid level as pads wear	<ul style="list-style-type: none"> • Generally only a concern if brake pads wear down fast.
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SUSPENSION AND STEERING

<input type="checkbox"/> Camber plates to track setting	<ul style="list-style-type: none"> • If applicable.
<input type="checkbox"/> Adjustable shocks to track setting	<ul style="list-style-type: none"> • If applicable.

INTERIOR

<input type="checkbox"/> Remove loose articles from the cabin and boot	<ul style="list-style-type: none"> • To avoid them becoming missiles or obstructions while driving and in the event of an accident.
<input type="checkbox"/> Set up your seating position correctly	<ul style="list-style-type: none"> • Enhances driving technique. Don't forget to include mirror adjustment.
<input type="checkbox"/> Pull seat belt/harness tight	<ul style="list-style-type: none"> • Even for standard lap/sash belts, pull these up towards the retractor quite firmly to tighten. Being held firmly in the seat and not sliding around in corners gives more precise and safer car control.

EXTERIOR

<input type="checkbox"/> Fit towing eye before going onto track (and marker)		<ul style="list-style-type: none"> • This will save time if towing is required, and importantly, minimise damage that commonly occurs when towing a car without it.
<input type="checkbox"/> If no towing eye, sort out in advance where the best towing positions are, front and rear		<ul style="list-style-type: none"> • To minimise damage when towed.

OTHER SAFETY

<input type="checkbox"/> Cover front-facing glass with tape or film	<ul style="list-style-type: none"> • To reduce the amount of glass on the track and flying in the air in the event of a crash.
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AT THE TRACK (cont.) – OTHER SAFETY

<input type="checkbox"/> Fire extinguisher	<ul style="list-style-type: none"> • Check that the extinguisher is fully charged and in date. • For powder type extinguishers, the powder can settle down hard over time, potentially reducing the extinguishers effectiveness when used. Turn and shake the powder around to loosen it on a regular basis.
<input type="checkbox"/> Remove wheel caps	<ul style="list-style-type: none"> • These can come off on the track and become dangerous missiles.

BODY

<input type="checkbox"/> Drivers window down far enough to give clear hand signals for passing	<ul style="list-style-type: none"> • Clear external hand signals are needed for safety.
<input type="checkbox"/> Clean windscreen	<ul style="list-style-type: none"> • Especially important for late in the day runs, when the sun is low in the sky.

GENERAL TIPS

<input type="checkbox"/> Take all that is possible out of the car at the track	<ul style="list-style-type: none"> • Less weight means more acceleration and faster cornering.
<input type="checkbox"/> Organise gear into large carry bags and crates, or similar	<ul style="list-style-type: none"> • Keeps pit bay clutter to a minimum.
<input type="checkbox"/> Drink plenty of water	<ul style="list-style-type: none"> • It can be quite hot at the track, and even slight dehydration impairs your driving ability, and it sneaks up on you!!
<input type="checkbox"/> Drive at a pace you are comfortable with	<ul style="list-style-type: none"> • Don't be pressured to go faster than that.
<input type="checkbox"/> Take it easy in the first session	<ul style="list-style-type: none"> • This is when brain fade tends to happen. It generally takes a while to settle into fast track driving - perhaps unless you were out on a track the previous weekend.
<input type="checkbox"/> Don't drive once you are fatigued	<ul style="list-style-type: none"> • Fatigue significantly increases the chance of an accident. Fatigue can set in before a track day is over and it is best not to continue.
<input type="checkbox"/> 'Warm up' and 'cool down' laps	<ul style="list-style-type: none"> • It is recommended to do at least one warm up lap when you start a session on the track. This is to bring engine, tyres and brakes up to optimal operating temperature, and hopefully the driver's head up to optimal temperament. • Likewise, one cool down lap is recommended, preferably with little use of the brakes. This allows some heat out of engine and brakes.

¹ CAMS Confederation of Australian Motorsport
² AASA Australian Auto-sport Alliance