R/C Off-Road Preparation Checklist - Ray Munday

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PRIORITY AFTER EACH RUN:
1) Clean car and check for any damage. Charge battery.
2) Fix damage
3) Make sure car in correct condition eg shock bleed, clean CVA etc
4) Change setup if needed (dont change setup if car is not in correct condition)

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	Start of Race Day	Before each Race	After each club day	Before Each Big Race	Comment
Clean	(should be clean)	Compressed air / rag with simple green. If muddy, baby wipes and simple green.	Remove wheels /shocks / wing Compressed air and simple green If arms binding, polish hinge pins and pipe cleaner in arms	Full teardown, clean with Simple Green	A clean car looks good, but more importantly cleaning the car helps you see damaged parts more easily
Driveshafts	(should be clean)	Clean excess dirt / dust (toothbrush)	Take off, clean with brake clean, and re-grease	Take apart and clean CVA (brake clean). CVA rebuild kit, replace driveshaft if pins badly worn	Clean CVA gives more traction. Regular maintenance increases life.
Shocks	Bleed (always bleed after car has been sitting on a car stand for a few minutes to allow air to settle).	Bleed if temperature has changed (I often check mid morning / mid afternoon) Brush off dirt from seal area	Take off car, wipe / clean off dirt with toothbrush. Fresh oil every 3-4 club meets.	New Shock Seals, bushings, oils. New shock bushes if very worn. Check shock length with vernier, set to within 0.1mm.	Shock bleeding is important for outdoor racing as temps vary widely from morning to afternoon. Keep dirt from building up around seal area.
Differential	(should be set)	Gear diffs: warm up imeediately before race (hold 1 wheel, use ~20% power for ~5 sec)	Check tightness, inspect outdrives for wear. Rebuild if gritty (Flip thrust race and diff rings or use rebuild kit).	Diff rebuild. New balls every few rebuilds. New outdrives if badly worn. Gear Diff: Replace oil	After building ball diff, MUST run in correctly and set tight for first few runs. Diff will last a long time if this is done correctly.
Pinion / Spur	(mesh should be set)	Check motor screws and pinion between quali and finals. If noisy, check for dirt in teeth (clean with pick).	Check mesh, look for damage	Replace if badly worn	A worn pinion will destroy spurs. Always loctite your pinion.
Slipper Clutch	Set at start of day (2wd usual setting: front tyres just lift off ground).	Re-adjust if track condition or temp major change	Loosen clutch if car will sit for a while. Re-set at track.	Inspect slipper pads. Flip pads if badly scored.	Slipper clutch setting is critical in 2wd. Clutches can become sticky, so loosen off and re-check before raceday.
Ride Height	Check (always bleed shocks before ride height check)	Check if spring / setup change (always shock bleed before ride height check). Re-set after changing tyres.	Set after shock bleed.	Check after rebuild (always bleed shocks before ride height check). Start with shock collars equal left and right.	Always bleed shocks before ride height check. Shouldn't need adjustment unless you change setup (springs / weight / tyres).
Camber / Toe	(should be set)	Check camber if change links / ride height / after big crash.	Check camber and toe (always after shock bleed and ride height are set).	Re-check after rebuild (after ride height check). I use setup station.	Set before start of meeting. With B6/B64. 1/4 turnbuckle rotation adjustment = 0.5 deg camber.
Screw Check	Wheel nuts	Wheel nuts and shock screws.	Check all screws (especially metal to metal screws).	Check all screws. Re-loctite any metal-metal screws. Replace screws with damaged heads (otherwise will strip at worst time).	Preventative maintenance helps reduce frustrating failures.
Broken Arm / Part Check	(should be checked)	Visual check of arms / towers each race.	Visual check of car for any cracks or breakages (especially arms / towers). Much easier to see after cleaning.	Visual check of all parts after cleaning (clean car is much easier to check for damage). Check for bent chassis, driveshaft, shock shafts. Wipe dirt off all bearings and check for smooth rotation. If nylock nuts are free, replace.	Preventative maintenance helps reduce frustrating failures. Prioritise fixing breakages over setup.
Tyres	Choose tyres after doing track walk	Take wheels off. Clean if muddy (simple green and brush). Check bead is not coming unglued.	Store off vehicle. Clean with simple green and wipe. If tyre OK to keep using, seal in zip lock bag. Cut used tyres off rims if worn and re-using rims.	Make sure tyres are bagged in groups and arranged so easy to find. All tyres should be marked with a sharpie (date, compound, left/right).	Tyre maintenance improves lap time. Bulk buy large zip lock bags and store off vehicle.
Body / Wing	(should be clean)	Wipe off dust / mud (Pledge or rag with simple green). Check for wing crack (major crack in rear wing reduces downforce a lot).	Clean with Pledge (furniture polish). Check for crack / velcro OK.	Fresh wings (cut out several to save time / space).	
Batteries	(should be charged)	Balance Charge in LiPo sack after battery cools. Record mAh used.	Check voltage (I don't leave batteries less than ~7.8V). Store in cool area (I leave in my shed fridge). Charge night before race. Charge transmitter batteries if needed.	Clean battery terminals with cotton buds and brake clean.	Always look after your batteries safely. Charge in a Lipo sack, balance charge, don't store in high temperature, don't store at low voltage.
Motor	(should be maintained)		Compressed air to blow dust out. Brush dust off bearing. Check sensor wire.	Re-oil motor bearing. Check sensor wire in ESC and motor.	Brushless motors last a long time - most common problem is bearing seizing if no maintenance.
Notes	Note down starting setup	Note change made each run	Note all changes, make note what to try next time	Create starting setup	Keeping notes is important to analysing what worked / what didn't and what to try next time. Create setup sheet in advance, then make notes each run.

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