NFSMW Car VLT Values Documentation

This document is based on the MWPS templates by FOX (a.k.a Lexal), with some changes and additions. It might not be 100% accurate as well.

**Node: frontend/vehicles/<region>/<brand>/<model>**

Cost: car's in-game cost in Career Mode

IsCustomizable: determines whether the car can be added to Career garage/My Cars; if set to false, it will appear in Bonus category only.

manufacturer: sets the manufacturer logo, check list of manufacturers in NFSMW Unlimiter's UnlimiterData\\_CarManufacturers ini file.

region: car's region values: 0=north\_america; 1=japan; 2=europe

UnlockedAt: determines at what BL position of player in career mode the car gets unlocked.

**Node: pvehicle/default/<class>/<section>/<name>**

To change the amount of stuff like TurboSND, brake\_updates, etc., right click on the pvehicle node of the car, select Edit Fields and change the array size of the element you want.

TurboSND: sound used for the turbo/supercharger

VerbalType: copspeech related: code determines what cops will call your car

MASS: self-explanatory: mass of car expressed in kilograms

MODEL: sets up the collision (Collision64/Collision) from GLOBALB and the model (Visual)

engineaudio: sound used for the engine

TENSOR\_SCALE: seems to be overall handling speed scale balancing the bigger 2nd value is the slower the car will respond to steering input countered by increasing of 1st and 3rd value

HandlingRating: used to set min and max handling bars length: doesn't take effect from base or end grip values but its increase is dependent on chassis and tires values values range from 37-98 for 1st set and 90-100 for 2nd set

brakes: sets up brake nodes to use

chassis: sets up chassis nodes to use

engine: sets up engine nodes to use

tires: sets up tires nodes to use

transmission: sets up transmission nodes to use

induction: sets up induction nodes to use

brakes\_upgrades: amount of brake upgrades the car has.

induction\_upgrades: amount of turbo/supercharger upgrades the car has.

tires\_upgrades: amount of tires upgrades the car has.

engine\_upgrades: amount of tire upgrades the car has.

transmission\_upgrades: amount of transmission upgrades the car has.

nos\_upgrades: amount of nitrous upgrades the car has.

chassis\_upgrades: amount of chassis upgrades the car has.

**Node: ecar/default/<class>/<name>**

BodyDive: maximum vector-based movement of front of car body 1st value - Degrees/G 2nd value - Max G 3rd value - Degrees/sec

RideHeight: (in-race only) visible body height

TireOffsets in format x, y, z, w x axis: car front = +, car rear = - y axis: left side = +, right = - z axis: up = +, down = - note: will move WHEELS [up or down] regarding CAR BODY, during race body will be on normal level unlike wheels that might be BELOW ground w - wheel diameter scaling: measured in (overall wheel size in mm/2)/1000; you can measure overall tire size in <https://tiresize.com/calculator/> or you can calculate the game wheel diameter directly using this formula: (((tire width in mm\*sidewall number divided by 100)\*2+rim size in mm)/1000)/2 NOTE: CAR BODY height will be changed to match wheel size all axles have point 0 in center of line between front left and rear right wheel or between front right and rear left

BodySquat: maximum vector-based movement of rear of car body 1st value - Degrees/G 2nd value - Max G 3rd value - Degrees/sec

CamberRear: angle between the vertical axis of the wheel and the vertical axis of the vehicle positive values for bottom of wheel being further out than top, negative for opposite effect common value is 0.18

CamberFront: angle between the vertical axis of the wheel and the vertical axis of the vehicle positive values for bottom of wheel being further out than top, negative for opposite effect common value is 0.22

FECompressions: used to adjust height of car body regarding wheels in frontend menus common value range is 2x0.10-2x0.20

TireSkidWidth: aka tire width values are 2x0.(tire width in mm)

TireSkidWidthKitScale: tire width per kit default values are 2x1; values are a multiplier of TireSkidWidth

WheelSpokeCount: number of spokes in rims common value range N/A since it differs per car

KitWheelOffsetRear: used to move wheels along axis Y when bodykits are used values range from 0 to 128: applies to REAR axle

KitWheelOffsetFront: used to move wheels along axis Y when bodykits are used values range from 0 to 128: applies to FRONT axle

ReflectionOffset: distance of floor reflection from car model in frontend. values range from -0.15 to 0.05

BodyRoll: maximum vector-based movement of entire car body towards left or right simply put - car body leaning sideways 1st value - Degrees/G 2nd value - Max G 3rd value - Degrees/sec

**Node: brakes/default/<name>**

BRAKES: overall braking power per axle common value range is 300/400-650/700: mass dependent

EBRAKE: handbrake power: should be larger than BRAKES value by at least 10% and larger than overall car horsepower common value range is 400-800: mass dependent

BRAKE\_LOCK: BRAKES field values multiplier and braking force distribution ratio common value range is 1.00 for front axle and 3.20-3.60 for rear axle

**Node: chassis/default/<name>**

WHEEL\_BASE: distance between the centers of the front and rear wheels common value range N/A since it differs per car

DRAG\_COEFFICIENT: air resistance of object travelling in a non-vacuum environment such as air common value range is 0.25-0.42

SHOCK\_VALVING: shock absorber oil flow restriction common value range is 2x15-2x24

RIDE\_HEIGHT: aka ground clearance common value range is 2x6-2x9

SHOCK\_STIFFNESS: minimum pressure inside shock absorber in pounds per square inch common value range is 2x30-2x80: acceleration and mass-dependent

SHOCK\_BLOWOUT: maximum size by which a dampener can compress in inches: stock same as upgraded common value range is 5-8

SHOCK\_EXT\_STIFFNESS: maximum shock absorber rebound force common value range is 2x40-2x80: acceleration-, downforce- and mass-dependent

SWAYBAR\_STIFFNESS: self-explanatory: probably expressed in pounds per square inch common value range is 2x200-2x450: acceleration and mass dependent

ROLL\_CENTER: vertical center of gravity [probably in inches] common value range is 8-10

TRAVEL: maximum length by which a shock can be extended if car wheels don't have contact with road surface: stock commonly higher than upgraded common value range is 2x6-2x8: acceleration and mass dependent

SPRING\_STIFFNESS: overall coilover pressure in pounds square inch common value range is 2x400-2x700

AERO\_CG: overall distribution of aerodynamic force on the car body: values between 0 and 100: 0 for max in rear, 100 for max in front common value range is 47-51

SPRING\_PROGRESSION: maximum compression speed/rate for spring to achieve maximum stiffness: stock smaller than upgraded higher values will make springs stiffer faster so car won't shove ground on slopes but will also increase bouncing on curbs common value range is 2x5-2x8

TRACK\_WIDTH: axle length: distance between wheels on a single axle: measured in metres common value range N/A since it differs per car

SHOCK\_DIGRESSION: digressive shocks provide smoother ride at higher speeds and absorb body roll also improving cornering: smaller value for smoother ride common value range is 2x0.1-2x0.5

RENDER\_MOTION: dependent on ecar node settings in body roll, dive and squat: used as a multiplier of the mentioned values to calculate car body movement common value range is 0.50-1.00

AERO\_COEFFICIENT: used to define car aerodynamics factor and overall downforce: value too small will make it slow and too high will push it down to ground too hard making it difficult to drive and car will be constantly hitting road due to excessive amount of downforce common value range is 0.15-0.30

FRONT\_AXLE: front axle diameter in inches common value range is 1.2-1.5

FRONT\_WEIGHT\_BIAS: overall mass distribution: values from 0 to 100: 0 for max rear bias: 100 for max front bias common value range is 51-55

**Node: engine/default/<name>**

ENGINE\_BRAKING: multiplies maximum torque at current gear and uses it to calculate speed loss with no throttle used common value range is 0.70-0.90

IDLE: minimum operating speed of engine necessary to sustain its work but not enough to move drivetrain components common value range is 800-950

TORQUE: self-explanatory: up to 15 torque values can be used but element count needs to be declared first common value range N/A since it differs per car

MAX\_RPM: maximum operating speed of engine before its destruction [drag racing only] common value range N/A since it differs per car

FLYWHEEL\_MASS: the higher the mass, the higher the maximum inertia moment and therefore larger amounts of kinetic energy can be stored also the lower the mass, the faster the top speed can be achieved and maintained common value range is 9-15

RED\_LINE: maximum safe operating speed of engine common value range N/A since it differs per car

**Node: induction/default/<name>\_base/<name>\_top | induction/default/<name>/<name>\_top**

AIR\_PRESSURE\*: commonly 0.25

HIGH\_BOOST

LOW\_BOOST

PSI\_ARROW\_MOVE\_SPEED\*: always higher value for stock

PSI: maximum pressure of air taken into the turbine common value range is 12-15

SPOOL: turbine lag: 0 for 'supercharger': anything higher will give 'turbo' upgrade common value range is 0.00-0.20

BOOST\_VARIANCE\*: pressure drop/rise in chamber

**Node: tires/default/<name>**

SECTION\_WIDTH: self-explanatory: measured in milimetres common value range N/A since it differs per car

YAW\_CONTROL: equivalent of section-based traction and stability control system: values 1 and 2 for front: values 3 and 4 for rear effect similar to dynamic mass bias shifting: highly dependent on WEIGHT\_BIAS, AERO\_CG, TORQUE\_SPLIT and DYNAMIC/STATIC\_GRIP values common value range N/A since it differs per car: mass and acceleration dependent

DYNAMIC\_GRIP: amount of friction the tires produce when traction is broken, ie when the car is sliding or in a burnout common value range N/A since it differs per car: mass and acceleration dependent

RIM\_SIZE: self-explanatory: measured in inches common value range is 2x16-2x19

YAW\_SPEED: self-explanatory: rate at which car enters yaw state common value range is 0.30-0.70

ASPECT\_RATIO: self-explanatory: ratio of section height to section width common value range is 2x30-2x55

STATIC\_GRIP: static grip is the amount of friction the tires are able to produce when they are not spinning, though they can be rolling common value range N/A since it differs per car: mass and acceleration dependent

GRIP\_SCALE: tire grip scaling per axle common value range is 2x1.00-2x1.10

STEERING: steering ratio: value of 1.00 means that turning steering wheel by 360 degrees will turn wheels by 36 degrees common value range is 0.90-1.10

**Node: transmission/default/<name>**

To change the amount of gears, right click on the transmission node of the car, select Edit Fields and change the array size of GEAR\_RATIO (amount of forward gears+neutral+reverse; 9 gears maximum)

GEAR\_RATIO: drivetrain power transfer ratios common value range N/A since it differs per car

DIFFERENTIAL: self-explanatory: differential bias: 0.00 for rear, 0.50 for mid and 1.00 for front setting towards front will lock the front wheels more, causing the car to be prone to oversteer: inverse effect if bias set towards rear common value range is 2x0.60-2x0.80: 3x0.60-3x0.80 if car is AWD

GEAR\_EFFICIENCY: overall power multiplier on current gear and rpm used to quickly change speed at each gear without any major reconfigurations common value set is 9x1.00

TORQUE\_CONVERTER: percentage ratio of torque converter efficiency with automatic transmission usage common value range is 0.20-0.80

TORQUE\_SPLIT: torque-to-axle transfer ratio: 0 for RWD, 0.5 for AWD and 1 for FWD common value range N/A since it differs per car

CLUTCH\_SLIP: self-explanatory: manual gearbox efficiency ratio common value range is 0.70-0.90

SHIFT\_SPEED: shifting interval: stock [should be] higher than upgraded common value range is 0.10-0.25

FINAL\_GEAR: final gear ratio determining top speed common value range N/A since it differs per car