

WAVCA Legislation Update

11th May 2021



Wheelchair Accessible Vehicle Converters Association

Background

- The EU Commission intends to amend the “General Safety Regulation 2” (2019/2144).
- The purpose, is to supplement the requirements for ECWVTA with some new regulations for type approval.
- The new “GSR2” will contain a variety of new regulations of concern to WAV manufacturers, phased in from 2022 onwards **for existing types of vehicle** (i.e. you will not be able to register any vehicle that doesn't comply).
- The key new requirements for WAVs are as follows:



New GSR 2 Regulations

Subject	Applies to new types of M1 vehicle from	Registration no longer possible	WAV NOTES
Seat Belt Reminders for all seats (ECE R. 16)	N/A	6/7/21	WAVs already exempt
Rear crash test for fuel tanks (R. 34) (& later Reg 135)	N/A	7/7/24	Exemption sought
Electric Powertrain Safety (R. 100)	N/A	6/7/22	Exemption sought
Full Frontal crash test (R. 137)	6/7/22	6/7/24	Exemption sought
Pole Side Impact (R. 135)	6/7/22	6/7/22	Exemption granted
Advanced Emergency Braking for other vehicles	7/7/22	7/7/24	No serious concerns
Advanced Emergency Braking - pedestrian & cyclist	7/7/24	7/7/26	No serious concerns
Reversing detection	6/7/22	7/7/24	Moderate concern
Emergency Lane Keep Assist	6/7/22*	7/7/24	No serious concerns
*For hydraulic Power Assisted Steering systems	7/7/24	7/7/26	No serious concerns
Protection of Vehicle Against Cyber Attacks	6/7/22	7/7/24	Moderate concern
Intelligent Speed Assist	6/7/22	7/7/24	No serious concerns
Alcolock interface	6/7/22	7/7/24	No serious concerns
Driver Drowsiness Detection System	6/7/22	7/7/24	No serious concerns
Advanced Driver Distraction Warning	7/7/24	7/7/26	No serious concerns
Event Data Recorder	??/??/2022	??/??/2024	Moderate concern



Current Commission (crash) Proposals

Regulation	Subject	Current	Proposed
Reg 94	Offset frontal	Exempt	Same as base vehicle
Reg 95	Car-to-car side impact	Exempt	Same as base vehicle
Reg 12	Old barrier test	Applies	Applies but irrelevant.
Reg 34	Fuel tanks	Applies but no rear crash test.	Will still apply but rear crash test is removed to new Reg 153.
Reg 137	Full width frontal	N/A	Same as base vehicle
Reg 135	Pole side impact	N/A	Exempt
Reg 153	Rear impact	N/A	Exempt
Reg 100	Electric vehicle safety	Applies	Will still apply. (Requires Reg 94 and 95 tests to be carried out)



Reg 94



56 km/h and 40% overlap and “kerb weight”.



Reg 95



50 km/h, 950kg trolley. Test vehicle at “kerb weight” + 100kg



The crucial question

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What testing does *your* industry currently do to verify structural integrity after conversion?

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Possible options – torsion test



Torsion test (ctd)

- A bare shell is set up so that a torsional load is applied to the suspension mounts at one end of the shell, and reacted at the other end. Dial gauges are attached to the sills at regular intervals.
- A torque is applied to the shell and the dial gauge readings noted.
- Several sets of readings are taken.
- The test is repeated with the converted shell and the readings plotted.
- This gives a torsional stiffness value in Nm / degree by which the converted car can be compared with the unconverted car.
- It is a relatively cheap test, involving only one bodyshell and usually non-destructive. However, it does not give any real indication of crashworthiness.



Reduced Regs 94 and 95 tests

- Some of the cost and complexity of these tests could be removed by not using instrumented dummies. Pass/fail criteria could be limited to structural damage. (e.g. at least 1 door per row of seats still capable of being opened & no fuel leaks).
- One vehicle might be used for both tests and repaired in between (if the approval authority decides that an offset frontal is necessary).
- Need to consider what happens if we fail a test.
- How do we source two more complete base vehicles for test?
- What happens when the Stage 1 manufacturer does a new test?
- This option might also provide a solution to the Reg 100 requirements and be used as a “bargaining chip” to exempt us from Reg. 137 (full frontal).



Alternative proposals

- Perhaps we could tell the Commission that we believe greater safety benefits could be achieved by carrying out other tests instead of Regs 94 and 95?
- For example, we could test with a surrogate wheelchair heavier than 85kg.
- Or we could offer to fit (and devise a suitable test for) a head-and-back support.
- This options might well prove more beneficial in “real life”, but it fails to address the problems of ECE Reg 100 for electric vehicles.



Computer modelling

- Could we use computer simulation to model crashworthiness?
- Is this likely to be a realistic option with the resources available to a typical WAV converter?
- If so, how would the model be validated?
- Could we rely on the Stage 1 manufacturers to help us?



Shared testing

- Could we pool our resources and jointly finance some Reg 94 and 95 tests on a few “typical” low-floor rear-entry WAVs, in order to provide evidence to the Commission, that typical WAV conversions do not compromise crashworthiness?
- If we could convince the Commission via this route, we might be able to seek a complete exemption from Regs 94 and 95.
- We might be able to work with an EU approval authority to select “worst case” vehicles on which to do such tests.
- It might not solve the Reg 100 problem.



“Fight it out”

- Armoured vehicles are exempt from Regs 94 and 95 yet their resources are similar (perhaps better) than those of the WAV industry. We could argue that our case is not less valid than theirs.
- We might be able to create a difficult situation for the Commission with help from MEPs and disabled groups.
- We can point out that making ECWVTA more onerous will force some WAV manufacturers to convert using national individual vehicle approvals schemes or even post-registration methods.
- This strategy is likely to lose the Commission’s goodwill and still doesn’t solve the problem of Reg 100.

