

ref.: R.48 Draft
Amendments on AFS

Submitted by the Expert from GTB-AFS

The present proposals have been prepared by the Expert from GTB-AFS after further review of the Draft Amendments to Regulation No.48 on AFS in its form resulting from the second session of the Informal Group on AFS, 28-30 January 2003 (working paper 5-02).

PROPOSAL (text displayed in **bold** is new)

Paragraph 2.7.26.6., amend to read:

" 2.7.26.6. "Neutral state" means the state of the AFS when **a defined mode of the class C (~~basic~~) passing beam or of the main beam, if any, is produced, being specified for initial adjustment of the AFS or parts of;** "

Rationale: to be consistent with the text in WD 5-05.

Paragraph 3.2.6.4., amend to read:

" **3.2.6.4. instruction for the inspection of the light sources and the visual observation of the beam;** "

Rationale: This may be needed for periodical check on lighting units not being lit in the system's neutral state.

(Note: The sentence is starting: 3.2.6. Where an AFS is fitted on the vehicle, the applicant shall submit a detailed description providing the following information: ..)

Paragraph 6.20.4.1., amend to read:

" 6.20.4.1. In width and height:
... according to the applicant's description.

All dimensions refer to the nearest edge(s) of the apparent surface(s) of the lighting unit(s) [when measured] in the direction of the reference axis. "

Rationale: this definition should be made for all provisions regarding width and height; accordingly, in paragraph 6.20.4.1.4. the words "when measured in direction of the reference axis" can be deleted.

Paragraph 6.20.4.1.4., amend to read (identical with the respective text part in paragraph 6.2.4.1. of the Regulation):

"...; and,
the inner edges of the apparent surfaces in the direction of the reference axes shall be not less than 600 mm apart. This does not apply, however, for M₁ and N₁ category vehicles; for all other categories of motor vehicles this distance may be reduced to 400 mm where the overall width of the vehicle is less than 1300 mm."

Rationale: this requirement must be the same as for normal passing beam lamps; editorial improvement, if any, is not a direct AFS issue.

Paragraph 6.20.5., amend to read:

" 6.20.5. Geometric visibility
On each side of the vehicle, for each lighting function and mode provided:

*the angles of geometric visibility prescribed for the respective lighting functions according to paragraphs 6.1.5. and 6.2.5. of this Regulation, shall be met by **at least one of the lighting** units that are simultaneously energized to perform said function and mode(s), according to the description of the applicant. **Individual lighting units may be used to comply with the requirements for different angles.***

Rationale: editorially for clarification.

Delete paragraphs 6.20.7.1.(d), 6.20.7.2.(d) and 6.20.7.2.(e) and insert instead a new paragraph 6.20.7.6. to read:

" 6.20.7.6. It shall be possible for the driver to set the AFS to the neutral state and to return it to its automatic operation. "

Rationale: It is deemed useful that means are left to the driver's decision to exclude the automatic AFS operation (passing and main beam, if it applies). The proposed text is open to different technical solutions to satisfy this requirement; it applies also to the setting to "neutral state" for aiming purposes. So the paragraphs 6.20.7.1.(d), 6.20.7.2.(d) and 6.20.7.2.(e), all being related to this aspect, can be deleted.

Paragraph 6.20.7.4. amend to read:

" 6.20.7.4. Automatic operation of the AFS lighting functions and modes

*The changes within and between the provided modes of the AFS lighting functions as specified below, shall be performed automatically **and** such that no discomfort, neither for the driver nor for other road users, is caused.*

***No means shall be foreseen for the driver for the activation of a passing beam class or a bending mode, if the relevant signal is not provided,** with exception of the provisions set out in paragraphs ~~6.20.7.2.(d)~~ **6.20.7.6.** and 6.20.7.5. of this Regulation.*

The following conditions apply for the activation of the modes of the passing beam and, where applicable, of the main-beam."

Rationale: Generally, all AFS decisions shall be performed automatically for improved safety and comfort. No new tasks for the driver must be introduced. A manual selection of the passing beam class should -except for class C- be even excluded.

A pre-selection concerning preferences within the classes or concerning e.g. the softness of transition should not be forbidden. It should also be allowed that the driver's (usual) decisions concerning the activation of a lighting or another vehicle device may be evaluated by the vehicle's 'brain' for the according optimization of the adaptive front lighting.

Paragraphs 6.20.7.4.1. through 6.20.7.4.5. amend to read:

6.20.7.4.1. The class C (~~basic~~) mode(s) of the passing beam shall be activated **if no mode of another passing beam class [according to the provisions of the paragraphs 6.20.7.4.2. through 6.20.7.4.4.] is activated.**

6.20.7.4.2. The class V mode(s) of the passing beam may be activated **only [under conditions, where a reduced headlamp intensity is of advantage ("negative contrast") or is not detrimental. This shall be deemed to be the case]** if one or more of the following conditions is/are automatically detected (V-signal applies):

- (a) roads in built-up areas, and, the vehicle's speed does not exceed 60 km/h;
- (b) roads equipped with a fixed road illumination, and, the vehicle's speed does not exceed 60 km/h;
- (c) 1 cd/m² road surface luminance and/or 10 lx road illumination, being exceeded continuously;

(d) vehicle's speed does not exceed 50 km/h.

- 6.20.7.4.3. The class E mode(s) of the passing beam may be activated only (E-signal **applies**)
- (a) when the vehicle's speed is not less than 80 km/h, and,
 - (b) the road characteristics correspond to motorway conditions 8;

where said condition according to (b) above shall be deemed to be satisfied if a continuous evaluation of one or more sets of information data is provided that can indicate motorway conditions, (e.g. the vehicle's speed being essentially steady together with steering parameters, or, the width and the course of the road lanes as indicated by means of optical detection).

8/ Such conditions can be found in Chapter I, Article 1 of the Convention on Road Traffic (Vienna Agreement, 1968)

- 6.20.7.4.4. The class W-mode(s) of the passing beam may be activated only (W-signal **applies**)
- (a) when the front fog lamps, if any, are switched OFF, and
 - (b) **[the road surface is wet and/or rain or snow fall is present; where said condition according to (b) above shall be deemed to be satisfied]** if:
 - (i) **the** wetness of the road has been detected automatically, **and /or**
 - (ii) the windshield wiper is switched ON and its continuous or automatically controlled operation has occurred for a period of at least 2 minutes.

- 6.20.7.4.5. **Any mode of a class C, V, E, or W passing beam may be modified to become a bending mode of said class (T-signal applies in combination with the signal of said passing-beam class according to paragraphs 6.20.7.4.1. through 6.20.7.4.4. above) if being based on the evaluation of at least one of the following possibilities:**
- (a) **the road curvature,**
 - (b) **the angle of lock of the steering,**
 - (c) **the trajectory of the centre of gravity of the vehicle,**
 - (d) **other information which provides equivalent indication.**

In addition the following provisions apply: ... "

(Rest unchanged as shown in WD 5-02)

Rationale /explanatory notes:

- Class C activation (6.20.7.4.1.) has been editorially changed for clearer reading
- Class V activation (6.20.7.4.2.) has been amended with detailed criteria
- class W activation (6.20.7.4.4.): both possibilities should be allowed independently
- Class T activation (6.20.7.4.5.) has been amended with detailed criteria and editorially changed for clearer reading
- editorially in general: criteria listed for clear reading
- In paragraphs 6.20.7.4.2. through 6.20.7.4.4. the text parts in brackets indicate the intentions behind the proposed switching criteria; they may serve for the rule-making discussion and can then be removed.