



Contour Marking – GRE Ad 'hoc meeting – 25/11/2004

The Truck industry is very sensitive to improve safety

Commercial Vehicles manufacturers are strongly committed to improving road safety through continual advances in active and passive safety of their vehicles and by cooperating with the other stakeholders on common programmes.

Every single Commercial Vehicle manufacturer makes its own investigation, accidentology data analysis ... to identify what has to be done in order to improve safety as well as the trucks image.



The Truck industry is very sensitive to improve safety

Commercial Vehicles manufacturers are willing to examine new accidentology data to identify what needs to be improved on Commercial vehicles

- Lateral visibility ?
 - when the vehicle is moving ?
 - When the vehicle is stationary ?

- Rear visibility ?
 - when the vehicle is moving ?
 - When the vehicle is stationary?



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The Truck industry is very sensitive to improve safety

When this investigation is done, Commercial Vehicles manufacturers are ready to examine the best cost/effective solutions to solve the identified problems.

The answer might not be exclusively "contour markings".

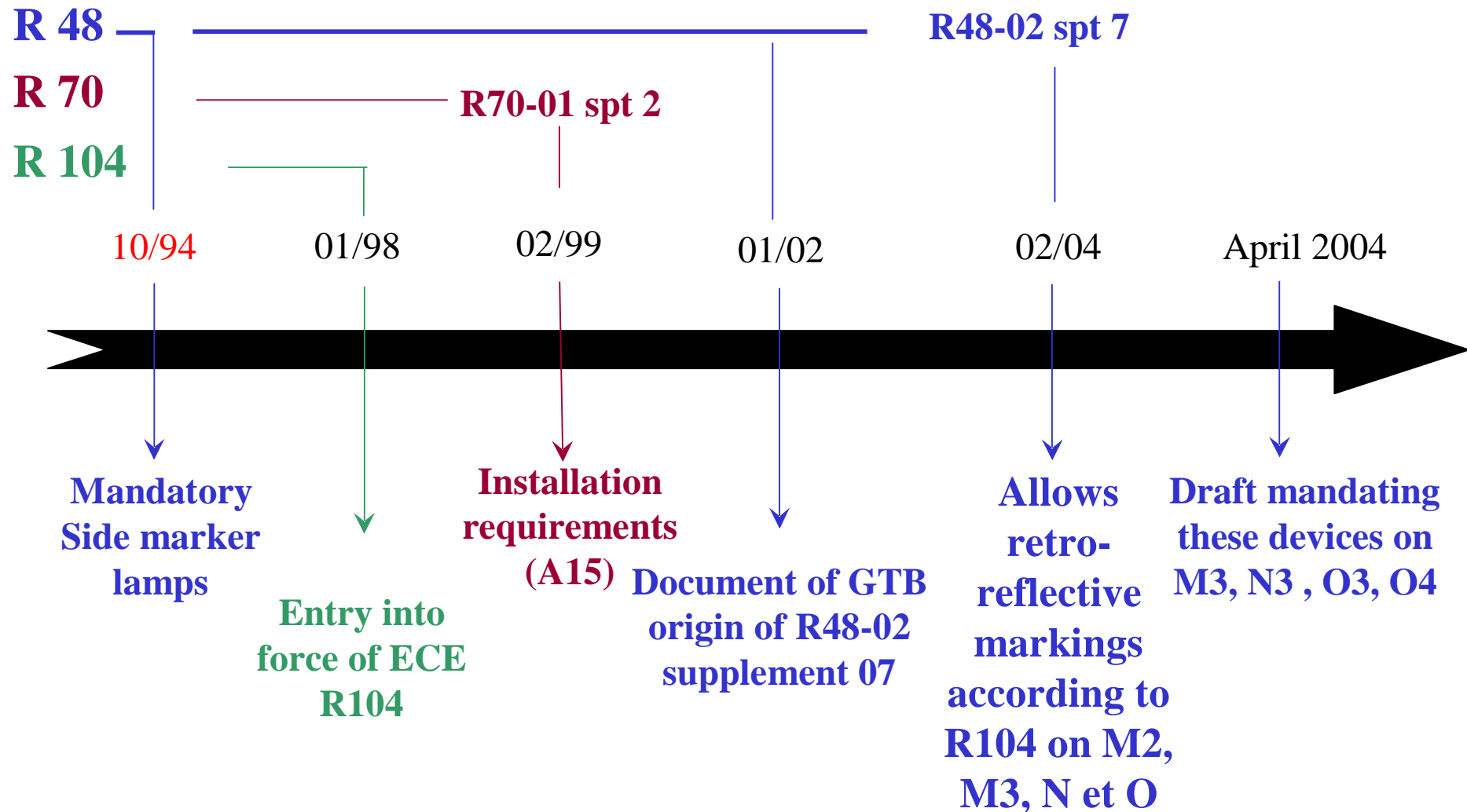


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Reminder of existing regulations



Lighting regulation : lateral and rear visibility





Mandatory side marker lamps:

As from 10/1994

→ presence mandatory on all vehicles with a length above 6m, except for chassis-cabs

→ distance between two adjacent side-marker lamps not exceeding 3m (4m if the vehicle structure makes impossible to comply with the requirements)

➤ the foremost one not further than 3m from the front

➤ the rearmost one not further than 1m from the rear

Today a rough estimation allows us to say that something like 30% of the current fleet does not fulfil this requirement



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Mandatory side marker lamps:

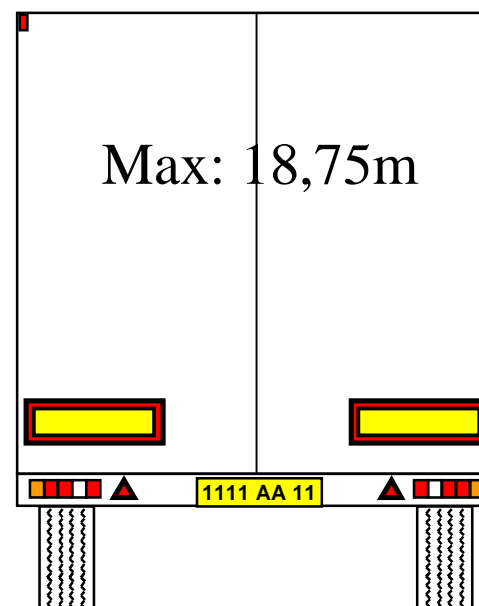
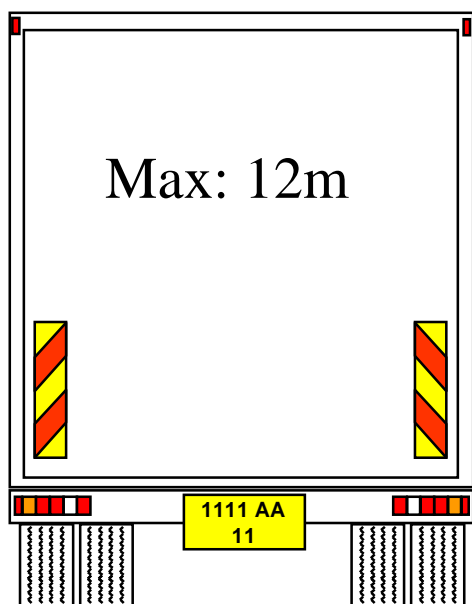




Identification plate for long and heavy trucks (R70)

The aim of this regulation is to type approve **rectangular retro-reflective or retro fluo plates** in order to identify the rear of long and heavy trucks

This is not a vehicle type approval regulation (no link with ECE R48)



The mandatory fitment of such devices is given at national level



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Identification plate for long and heavy trucks

In France : Mandatory for registration as from 01/04/2005
 Mandatory for vehicle in use as from 01/04/2006
 (National requirements mandatory for vehicle above 6t)

In Germany : possible

In Sweden: Mandatory

In Italy: Mandatory

In UK: Mandatory

In Netherlands: Mandatory

In Belgium: Mandatory

...



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Additional, national regulations

In addition to European or Geneva regulations, additional national regulations can be required.

In Germany, for example, markings for **special vehicles or types of transport** are mandatory.

Additional red-white warning markings are required (§ 51 StVZO)

- Municipal vehicles require additional red-white warning markings
- Parking warning display (§ 17 StVO)
- Identification markings of refuse collector vehicles (§ 52 StVZO)

Some of these markings (red and white) are allowed in France on emergency vehicle



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Additional, national regulations

Mandatory in Germany
for every municipal vehicle





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Additional, national regulations

Parking plate: mandatory in Germany for trucks





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Retro-reflective markings (R104)

The aim of this regulation is to type approve **retro-reflective markings** in order to identify the side and the rear of vehicles

This regulation also gives recommendation of installation of such devices.

Retro-reflective markings (R48)

The aim of this step is to include **retro-reflective markings** in the type approval of a vehicle concerning lighting devices

➤ **Commercial Vehicles Manufacturers have problems to apply**



Retro-reflective markings (R48)

retro-reflective markings, type approved according to ECE R104:

- are prohibited on M1, and **optional** on M2, M3, N et O (*mandatory on N3, M3, O3, O4 as proposed*)
- **Are made up of one or several elements**
- **Are as close as possible to horizontally or vertically**
- **Identify at least 80% of the length or of the width**
- Have a space between two adjacent elements as small as possible and in any case not exceeding 50% of the shortest element length
- Are at a minimum height of 250 mm above the ground



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What offers a motor vehicle manufacturer ?



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What offers a motor vehicle manufacturer ?

Motor Vehicle manufacturers provide:

- ✓ tractors for semi-trailers
- ✓ chassis-cabs to be completed (rigid truck)
- ✓ vans
- ✓ coaches / buses



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Vehicle for combined transport (sea and road)





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What offers a motor vehicle manufacturer ?

National type approval are made by "units "

A motor vehicle manufacturer provides:

- ✓ complete vehicles : tractors with fifth wheel, van or buses
- ✓ incomplete vehicle : trucks to be fitted with a bodywork or buses

The motor vehicle manufacturer must get ECE lighting type approvals for a complete or incomplete vehicle

The body builder gets:

- ✓ a body certificate

The customer

- ✓ gets the registration of his complete vehicle (tractor with support trailer or van) without initial technical inspection
- ✓ gets the registration of his trailer or semi-trailer
- ✓ has an initial technical inspection with his body built vehicle



Application of R48 contour markings

How can a Truck Manufacturer guarantee the identification of 80% of the combined vehicle length ?

- The chassis-cabs and bodyworks are approved separately. The vehicle final length is unknown at the time of the chassis approval .
- The trucks manufacturer don't know how many % can be part of the body, so how many % have to be fitted on the cab?

How can an authority check these type approval requirements on a combined vehicle ?

There are specific cases, where, neither the vehicle manufacturer, nor the bodybuilder could apply these type approval requirements



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On a tractor

How can a Truck Manufacturer guarantee the identification of 80% of the complete vehicle length ?

What is the need to identify the rear of the vehicle ?





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On a chassis-cab

How can a Truck Manufacturer guarantee the identification of 80% of the complete vehicle length ?

What is the need to identify the rear of the vehicle ?





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There are specific cases, where, neither the vehicle manufacturer, nor the bodybuilder could apply these type approval requirements

There are specific cases where neither the vehicle manufacturer, nor the body builder meet identifying 80% of vehicle length or width

What must the manufacturer do for these vehicles?



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Concrete mixer



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Firefighting body



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Car transporters



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Timber transport



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Timber transport



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Ampli roll applications. Hook lift.



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Container carrier



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Skip carrier.



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Municipal vehicle



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Municipal vehicle



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Tank articulated vehicle



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Construction equipment transporter



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Bitumen transporter



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Height > 2 m



Off-road construction vehicle



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Height > 2 m



Tank transporter



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Agricultural vehicle



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Agricultural vehicle



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Questions about the regulation project



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The Truck industry is very sensitive to its customer constraints

The truck operators are under high pressure

- this sector faces very important difficulties
- Fuel prices evolutions are giving more pressure

The truck operators will have to pay for these devices

Truck manufacturers would like to find the best cost/effective solutions to improve lateral and rear visibility



Criteria to be improved in R104

- Durability requirements

If contour markings are put on a body or on a chassis, can we be sure these markings won't have to be changed every 3 years?

→ The regulation should guarantee a life time via the durability criteria

- What is the definition of " a durable in time and stable fixing" (§6.3) ?
- What is the bending resistance of retro-reflective devices ?

Some would have to be fitted on tarpaulin, same questions



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Miscellaneous questions (1/4)

- There is a need to clarify in which conditions lateral and rear visibility on commercial vehicles have to be improved (vehicle stationary, vehicle in motion ?)
- All motor vehicles should continue to be required to have clear signal images **that can be clearly recognized by all drivers and pedestrians.**
- As a first step, **shouldn't the work begin on developing a system of standardized signal images** for the vehicles in question.
- If possible, **different types of lighting equipment should be permitted as alternatives** (e.g. elimination of the side lights facing the rear in the event that a side contour marking has been mounted).



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Miscellaneous questions (2/4)

- Side marker lamps and side retro-reflectors have the same goal than **lateral markings**.

→ **Could the lateral marking be an alternative to side retro-reflectors?**

- R 70 and **rear contour marking** have the same objectives

→ **Could R70 be an alternative to rear marking?**

- The same questions can be asked with national requirements or national alternatives

→ **Could vehicles that are fitted with retro reflective markings according to a national regulation be exempted from contour markings?**

As a conclusion, is it necessary to multiple retro-reflective devices on a truck, on its side, on the rear ?



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Miscellaneous questions (3/4)

Should contour marking be part of the lighting installation type approval regulation ECE R48 ?

If so the regulation **can not apply to a combined vehicle** because there is no way today for the authorities to check the conformity with a lighting type approval:

So, if the aim is to have installation lighting type approval for contour markings, provisions should be given in R 48 for

- Tractors
- Chassis-cab
- trailers or semi-trailers
- M3 vehicles



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Miscellaneous questions (4/4)

- How can contour markings be in phase with ECE R48-02 (colour requirements) ?

→ Colour requirements should be defined in the regulation

- Isn't there a risk to impair or interfere with other mandatory lights?

- On cabs with big (door) windows, to fulfil position requirements, should the device be affixed on windows thereby decreasing driver visibility ?

- What is the efficiency of such devices when dirty ? Shouldn't the regulation give use requirements ?

-What is the efficiency of retro-reflective devices in function of the installation height and angle? Are there limits ?

- What is the justification of 80% length or width?



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Conclusions

The truck industry is committed to improving safety and favours the best cost/effective solutions to update the regulation

We would recommend to **work on a standardized signal images, so that road users** have all the same understanding of any signal they can get.

Should the regulation be a type approval or a use regulation?

If it is a type approval regulation what should be applicable to tractor and chassis-cab ?

The regulation R104 should give requirements in terms of durability, bending