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## **Southeast European Cooperative Initiative (SECI)**

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### **REGIONAL ROAD TRANSPORT COMMITTEE (RRTC)**

Third session

(Heraklion (Greece), 4-6 October 2000,

agenda item 5 (b))

### **Preparation of an international goods road vehicle weight certificate**

(in accordance with Article 7 of the MoU)

#### **Prepared by the UN/ECE Ad Hoc Group of Technical Experts and the UN/ECE secretariat**

1. In accordance with the decisions taken by the Regional Road Transport Committee, at its second session, the UN/ECE secretariat is reproducing below a revised draft Protocol to the Memorandum of Understanding (MoU) on the Facilitation of International Road Transport of Goods in the SECI region as well as a revised draft International Vehicle Weight Certificate (IVWC) for consideration and adoption by the Committee.
2. While the text of the draft Protocol to the MoU has been prepared by the UN/ECE secretariat taking account of the considerations of the Committee at its second session, the draft of the International Vehicle Weight Certificate has been reviewed and agreed upon in principle by an UN/ECE group of technical experts.
3. The technical expert group has been convened by the UN/ECE secretariat and met on 1 August 2000 in Geneva. It consisted of the following experts: Mr. P. De Langhe, Ministry of Transport and Infrastructure (Belgium); Mr. F. Chouaref, Ministry of Transport (France); Mrs. G. Schwan, Federal Ministry of Transport, Office for Goods Transport (BAG)(Germany); Mr. A. Dessis, Ministry of Development, Metrology Department (Greece); Mr. M. Urgan, Ministry of Transport, National Administration of Roads (Romania); Mr. S. Rasmussen, Technical Affairs Department, International Road Transport Union (IRU); Mrs. A. Luchie and Mr. A. McKenzie, Liaison Committee of Coachwork and Trailer Builders (CLCCR); Mr. F. Scheuter, Division Manager Wheel Load Scales, HAENNI Instrumentation Systems.
4. In addition to the International Vehicle Weight Certificate given below, the group of experts considered the following substantive issues:

### Total versus axle weight

5. The group of experts was of the view that while the gross vehicle weight of goods road vehicles was an important indicator determining road traffic safety, one of the major factors responsible for wear and tear of the road surface was the axle weight of goods road vehicles in combination with the type of axle (driven or non-driven) and their placement (single, tandem, triple axle(s), incl. distance between axles).

6. For the purposes of the International Vehicle Weight Certificate having the objective to facilitate border crossing procedures, an indication of the gross weight of goods road vehicles only would not be sufficient and should be complemented by weight measurements of the individual axles (Reference is made in this context to European Community Directives 96/53/EC (25.07.1996) and 97/27/EC (22 July 1997)).

### Static versus dynamic weight measurements

7. In the past, weight measurements using fixed and later-on portable static wheel-load scales were considered as the only valid means for determining the weight of goods road vehicles, both for gross vehicle weight and individual axle weight measurements. Today, increasingly, dynamic weighing procedures (weigh-in-motion (WIM) measurements) are used, often for pre-selection purposes, allowing to determine the weight of goods road vehicles without interfering with their movements. In cases where serious over-weights are measured, the vehicles are stopped and further examined and re-weighed on static scales. While static weight measurements are used in most countries for law enforcement purposes due to their relatively high reliability and accuracy, some countries use today also dynamic (weigh-in-motion) weight measurements for such purposes.

8. Dynamic weight measurements present additional sources of possible measurement errors compared to static measurements which result from acceleration processes of the vehicle due to road surfaces not being perfectly smooth and level and depending on the quality of the vehicle suspension system. The results obtained must therefore be taken with care and sufficient allowances have to be made for such external errors.

9. In theory, the results of dynamic and static weight measurements should be the same. However, as defined in the relevant OIML recommendations, the error of dynamic weight measurements is always greater than the error of static weight measurements. Good results require in the case of dynamic measurements, the best possible road quality as well as vehicles with good suspension systems. Thus, while both measurement systems are able to provide accurate results, the requirements for achieving such results are more demanding in the case of dynamic measurements.

10. The group of experts therefore recommended that static and dynamic weighing procedures should be allowed for inscriptions into and the control of the weight measurements contained in the International Vehicle Weight Certificate as long as the weighing equipment and its usage were in conformity with the relevant rules and recommendations of the International Organization of Legal Metrology (OIML) (It should be noted in this context that rules and recommendations relating to dynamic weight measurements have not yet been approved by OIML).

Fixed platform scales versus portable scales

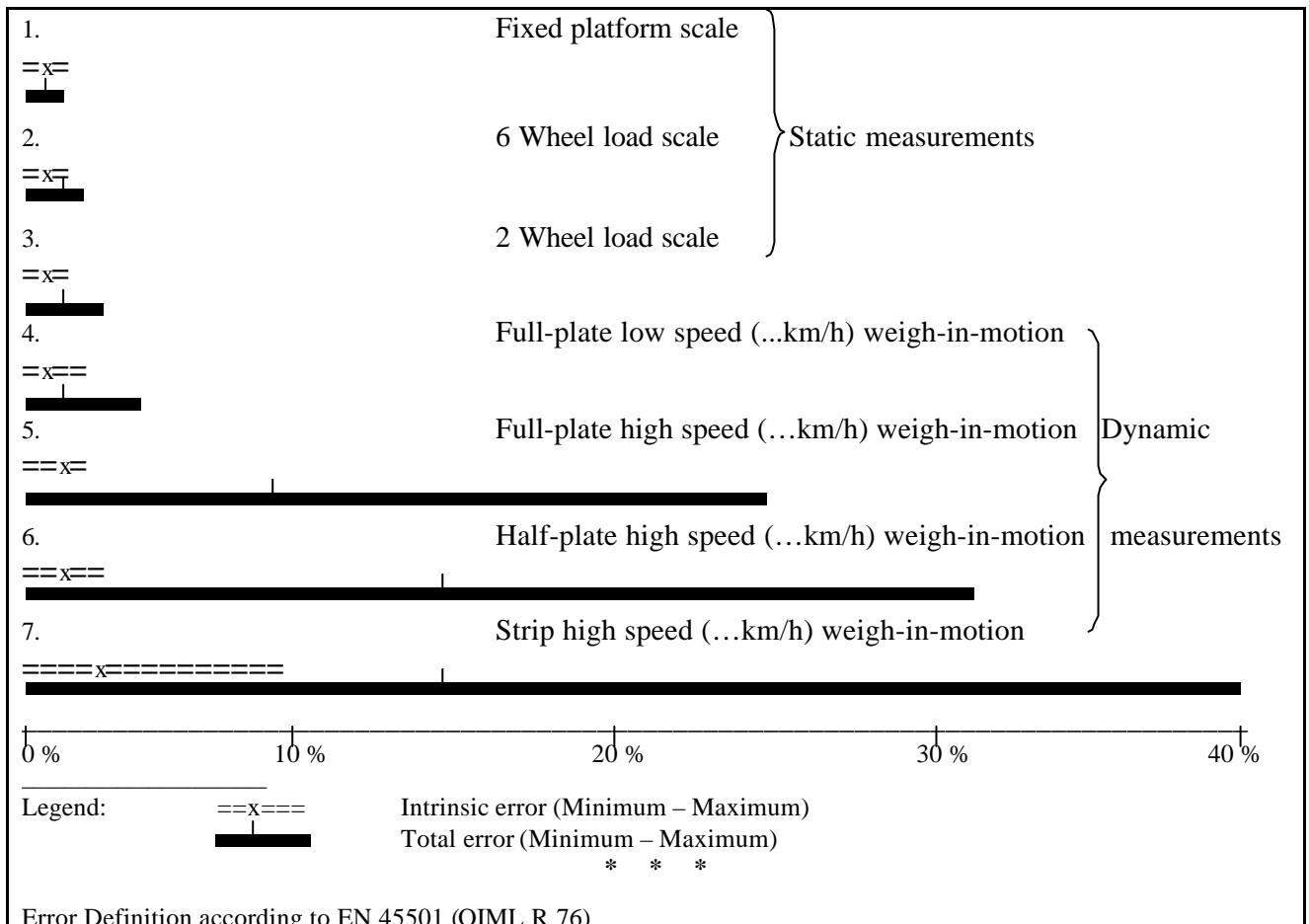
11. Until the 1960s, fixed platform scales were considered as the only reliable equipment for determining the weight of goods road vehicles. Later on, the introduction of portable static wheel-load scales has led to considerable improvements and effectiveness of weight enforcement. Initial problems related to the accuracy of such portable scales often have been falsely attributed to the weighing equipment itself. In most cases however, weighing errors were caused by faulty usage of the portable equipment, such as the omission of levelling in the sequential measurement of multiple axle systems, etc. These problems are known today and should no longer occur.

12. The accuracy of modern portable wheel-load scales is only slightly below that of fixed platform scales, provided that the equipment used is of comparable quality and has been approved in accordance with the rules and regulations of the International Organization of Legal Metrology (OIML).

13. The group of experts therefore recommended that in the context of the International Vehicle Weight Certificate the use of fixed platform scales as well as portable scales should be allowed.

14. Based on research undertaken by one of the experts, the table below provides an overview of the typical error rates of different weighing equipment.

Typical error of weighing systems (gross weight)



Source: Felix Scheuter, HAENNI Instrumentation Systems (Switzerland)

15. The Committee may wish to consider the views expressed by the expert group which have been incorporated into the text of the draft Protocol to the MoU as well as into the International Vehicle Weight Certificate itself.

DRAFT

**Protocol**  
**to the Memorandum of Understanding (MoU)**  
**on the Facilitation of International Road Transport of Goods in the SECI Region**  
**signed by Ministers responsible for Transport on 28 April 1999 at Athens**  
  
**on the introduction of an**  
**International Goods Road Vehicle Weight Certificate**

1. The Parties, in accordance with Article 7 of the Memorandum of Understanding (MoU) on the Facilitation of International Road Transport of Goods in the SECI Region, signed on 28 April 1999 at Athens, taking account of the views of the Regional Road Transport Committee, established in accordance with Article 12 of the MoU introduce herewith an International Vehicle Weight Certificate (IVWC) as annexed to this Protocol.
2. The objective of the International Vehicle Weight Certificate (IVWC) is to avoid repetitive weight measurements of goods road vehicles en route in the participating countries. Duly filled-in certificates shall be accepted as bearing valid weight measurements by the competent authorities of SECI participating States. As a general rule, competent authorities shall accept the information contained in the certificate as valid and shall refrain from requiring additional weight measurements.
3. The International Vehicle Weight Certificate (IVWC) shall be issued and used under the supervision of a designated Governmental authority in line with the procedure described in the annexed certificate.
4. The Parties shall approve authorized weighing stations to fill-in, together with the operator/driver of the goods road vehicle, the International Vehicle Weight Certificate (IVWC) in accordance with the following minimum requirements:
  - (a) Weighing stations shall be equipped with certified weighing equipment (scales). These scales may be built into fixed installations (platform scales) or may consist of portable equipment. In the latter case particular attention has to be accorded to the accuracy of the weighing results.
  - (b) The weighing equipment (scales) shall be well maintained. It shall be regularly verified and sealed by the competent national authorities responsible for weights and measures. The weighing equipment (scales), its accuracy levels and its usage shall comply with the rules and recommendations established by the International Organization for Legal Metrology (OIML).
  - (c) Weight measurements may be taken using static or dynamic (weigh-in-motion WIM)) procedures. Particular care should be taken to minimize the intrinsic error values of the weighing equipment and, in particular in case of dynamic weight measurements, the errors due to external factors (levelling, road surface, vehicle suspension system, etc.).
5. The use of the certificate by transport operators is optional.

6. To prevent abuses, the competent authorities may, in exceptional cases and particularly when irregularities are suspected, carry out an examination of the vehicle weight in accordance with national regulations.
7. The model of the attached certificate may be reproduced in any of the languages of the participating countries provided that the layout of the certificate and the placing of the items therein are not modified.
8. The Parties shall publish a list of all authorized weighing stations. These lists as well as any modification thereto shall be transmitted to the other Parties and to the UN/ECE secretariat for distribution to interested organizations and users.
9. Transitional provisions: Since only very few weighing stations in the SECI participating States are equipped at present with scales able to provide individual axle weight measurements, the Parties agree that, during a transitional period, expiring ..... following the entry into force of this Protocol, gross vehicle weight measurements as provided for under item 7.3 in the International Vehicle Weight Certificate (IVWC) shall be sufficient and shall be accepted by the competent national authorities.
10. This Protocol will enter into force subject to its adoption by the Regional Road Transport Committee following a period of three months following its signature by the SECI participating States.

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Annex



NATIONS UNIES

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UNITED NATIONS

COMMISSION ÉCONOMIQUE  
POUR L'EUROPE

ŸĒĪĪĪĒ×ĀŅĒĀB ĒĪĒŅŅĒB  
ĀĒB ĀĀĎĪŪ

ECONOMIC COMMISSION  
FOR EUROPE

**INTERNATIONAL VEHICLE WEIGHT CERTIFICATE  
(IVWC)**

**Valid for international road transport of goods**

**To be filled-in by the operator/driver of the goods road vehicle before weighing the vehicle**

1. NAME AND ADDRESS (incl. country) of transport operator/company:

.....  
.....

Tel. No.: ..... Fax. No.: ..... E-mail: .....

2. TRANSPORT CONTRACT No. (i.e. CMR Consignment Note No.): .....

or TIR CARNET No.: .....

3. DETAILS OF GOODS ROAD VEHICLE

(a) Registration number of road tractor / lorry: .....  
semi-trailer/ trailer: .....

(b) Suspension system of road tractor/lorry: Air ' Mechanical ' Other '  
semi-trailer/trailer: Air ' Mechanical ' Other '

Remarks

**To be filled-in by the operator of the authorized weighing station**

4. NAME AND ADDRESS OF AUTHORIZED WEIGHING STATION:

.....  
..... Country: .....

5. VEHICLE WEIGHT MEASUREMENT No.:\*

6. DATE OF ISSUANCE:

7. WEIGHT MEASUREMENTS OF GOODS ROAD VEHICLES

(Original and official record of the weighing station shall be affixed to this certificate)

7.1. Type of goods road vehicle (in accordance with EU Directive 96/53/EC 1996)

Vehicle type: ..... (insert vehicle type number as contained in the attached sketches, part of the certificate. For example: A<sub>2</sub> or A<sub>2</sub>S<sub>2</sub>)

7.2. Axle weight measurements

|                   |                 |   |             |   |          |
|-------------------|-----------------|---|-------------|---|----------|
| (1) First axle    | Driven axle     | ' | Single axle | ' |          |
|                   | Non-driven axle | ' | Tandem axle | ' | ..... kg |
|                   |                 |   | Triple axle | ' |          |
| (2) Second axle   | Driven axle     | ' | Single axle | ' |          |
|                   | Non-driven axle | ' | Tandem axle | ' | ..... kg |
|                   |                 |   | Triple axle | ' |          |
| (3) Third axle    | Driven axle     | ' | Single axle | ' |          |
|                   | Non-driven axle | ' | Tandem axle | ' | ..... kg |
|                   |                 |   | Triple axle | ' |          |
| (4) Fourth axle   | Driven axle     | ' | Single axle | ' |          |
|                   | Non-driven axle | ' | Tandem axle | ' | ..... kg |
|                   |                 |   | Triple axle | ' |          |
| (5) Fifth axle    | Driven axle     | ' | Single axle | ' |          |
|                   | Non-driven axle | ' | Tandem axle | ' | ..... kg |
|                   |                 |   | Triple axle | ' |          |
| (6) Sixth axle ** | Driven axle     | ' | Single axle | ' |          |
|                   | Non-driven axle | ' | Tandem axle | ' | ..... kg |
|                   |                 |   | Triple axle | ' |          |

\*\* If more than six axles, indicate in box "Remarks" on page 4.

7.3. Gross vehicle weight measurements

|                                |          |
|--------------------------------|----------|
| (7) Road tractor / lorry       | ..... kg |
| (8) Semi-trailer / trailer     | ..... kg |
| (9) Total gross vehicle weight | ..... kg |

\* For Notes see page 4.

To be filled-in by the operator of the authorized weighing station (continued)

8. SPECIAL WEIGHT CHARACTERISTICS

- (1) Fuel in tanks connected to the engine: filled to ¼ ' ½ ' 1/1 '
- (2) Fuel in additional tanks: filled to ¼ ' ½ ' 1/1 '  
(incl. fuel in tanks for cooling devices)
- (3) No. of spare tyres: .....
- (4) Driver(s) on board while weighing? Yes ' No '

**I declare that the above weight measurements taken have been accurately performed by the undersigned by an authorized weighing station.**

Name of operator of weighing station .....

Stamp: ..... Signature: .....

**I declare that**

- (a) **the above weight measurements have been performed by the above mentioned weighing station,**
- (b) **that the information (1) to (8) has been duly filled-in and**
- (c) **that no load has been added to the goods road vehicle following its weighing at the above mentioned weighing station.**

Date: .....

Name of driver(s) (of goods road vehicle): .....

Signature(s): .....

Remarks

**International Vehicle Weight Certificate (IVWC)**

**Legal basis**

The International Vehicle Weight Certificate (IVWC) has been drawn up in accordance with the provisions of the Protocol on the Introduction of an International SECI Goods Road Vehicle Weight Certificate (IVWC) to the Memorandum of Understanding (MoU) on the Facilitation of International Road Transport of Goods in the SECI Region (Athens, 28 April 1999).

**Objective**

The International Vehicle Weight Certificate (IVWC) is designed to avoid repetitive weight measurements of goods road vehicles en route in international transport, particularly at border crossing. The use of the certificate is optional by transport operators.

**Procedure**

Any International Vehicle Weight Certificate (IVWC) duly filled-in by (a) the operator of an approved weighing station and (b) the transport operators/goods road vehicle driver shall be accepted and recognized as bearing valid weight measurements by the competent authorities of SECI participating States. As a general rule, competent authorities shall accept the information contained in the Certificate as valid and shall refrain from requiring additional weight measurements. To prevent abuses, the competent authorities may however, in exceptional cases, and particularly when irregularities are suspected, carry out an examination of the vehicle weight in accordance with national regulations.

Weight measurements in order to establish this certificate shall be made, upon the request of a transport operator/goods road vehicle driver whose vehicle is registered in one of the SECI participating States by approved weighing stations at costs which shall be limited to the services rendered.

**Sanctions**

Transport operators/goods road vehicles drivers are liable, in accordance with national legislation, for any false declaration made in the International Vehicle Weight Certificate (IVWC)

In determining the legal value of the weight measurement(s), an estimation of the possible weighing error must be made for each weighing system. This error value, usually in the order of 1 to 3 per cent, consisting of the intrinsic error of the weighing equipment and the error due to external factors, must be deducted from the measured weight in order to ensure that a possible overweight measurement is not caused by the inaccuracy of the weighing equipment and/or the weighing procedure used. As a consequence, fines shall not be imposed on transport operators utilising this certificate unless the weight measurement(s) inscribed in this certificate minus the maximum possible weighing error (i.e. 3 per cent or 1,200 kg in case of a 40 tonne vehicle) exceed(s) the maximum permissible weight(s) as prescribed by national legislation.

**Notes**

The vehicle weight measurement number shall consist of three data elements linked by hyphens:

(1) Country code (in accordance with the UN Convention on Road Traffic, 1968):

|                        |     |                       |                                  |
|------------------------|-----|-----------------------|----------------------------------|
| Albania                | AL  | Republic of Moldova   | [MD] (not official notification) |
| Bosnia and Herzegovina | BIH | Romania               | RO                               |
| Bulgaria               | BG  | Slovenia              | SLO                              |
| Croatia                | HR  | The former Yugoslav   |                                  |
| Greece                 | GR  | Republic of Macedonia | MK                               |
| Hungary                | H   | Turkey                | TR                               |

(2) Two-digit code allowing identification of national weighing station

(3) Five-digit code (at least) allowing identification of individual weight measurement taken








Examples: GR-01-23456 or RO-14-000510

This serial number shall correspond to that applied in the books of the weighing station

**Attachment to the International Vehicle Weight Certificate (IVWC)**  
**SKETCHES**  
of types of goods road vehicles as required under item 7.1 of the  
International Vehicle Weight Certificate (IVWC)











| No. | Goods road vehicles | Vehicle Type | Distance between Axles (m) |
|-----|---------------------|--------------|----------------------------|
|-----|---------------------|--------------|----------------------------|

**I. VEHICLES**

|   |   |                |         |
|---|---|----------------|---------|
| 1 |    | A <sub>2</sub> | D < 4.0 |
| 2 |   | A <sub>2</sub> | D ≥ 4.0 |
| 3 |  | A <sub>3</sub> | ...     |
| 4 |  | A <sub>4</sub> | ...     |
| 5 |  | A <sub>3</sub> | ...     |
| 6 |  | A <sub>4</sub> | ...     |
| 7 |  | A <sub>5</sub> | ...     |









| No. | Goods road vehicles | Vehicle Type | Distance Between Axles (m) |
|-----|---------------------|--------------|----------------------------|
|-----|---------------------|--------------|----------------------------|

**II. ROAD TRAINS**

|    |   |                               |  |
|----|---|-------------------------------|--|
| 1  |    | A <sub>2</sub> R <sub>2</sub> |  |
| 2  |    | A <sub>2</sub> R <sub>3</sub> |  |
| 3  |    | A <sub>3</sub> R <sub>2</sub> |  |
| 4  |  | A <sub>3</sub> R <sub>3</sub> |  |
| 5  |  | A <sub>2</sub> R <sub>2</sub> |  |
| 6  |  | A <sub>3</sub> R <sub>3</sub> |  |
| 7  |  | A <sub>3</sub> R <sub>2</sub> |  |
| 8  |  | A <sub>3</sub> R <sub>3</sub> |  |
| 9  |  | A <sub>2</sub> R <sub>1</sub> |  |
| 10 |  | A <sub>3</sub> R <sub>1</sub> |  |

| No. | Goods road vehicles | Vehicle Type | Distance Between Axles (m) |
|-----|---------------------|--------------|----------------------------|
|-----|---------------------|--------------|----------------------------|

**III. ARTICULATED VEHICLES**

|   |  |   |                               |         |
|---|--|---|-------------------------------|---------|
| 1 | with 3 axles                               |    | A <sub>2</sub> S <sub>1</sub> |         |
| 2 | with 4 axles (single or tandem)            |    | A <sub>2</sub> S <sub>2</sub> | D ≤ 2.0 |
|   |  |   | A <sub>2</sub> S <sub>2</sub> | D > 2.0 |
|   |  |  | A <sub>3</sub> S <sub>1</sub> |         |
| 3 | with 5 or 6 axles (single, tandem, triple) |  | A <sub>2</sub> S <sub>3</sub> |         |
|   |  |  | A <sub>3</sub> S <sub>2</sub> | D ≤ 2.0 |
|   |  |  | A <sub>3</sub> S <sub>2</sub> | D > 2.0 |
|   |  |  | A <sub>3</sub> S <sub>3</sub> |         |