



Ministero delle Infrastrutture e dei Trasporti

**1ST JOINT WORKSHOP ON PTWS INTEGRATED SAFETY
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*INTERNATIONAL HARMONIZATION AND ITS EFFECTS ON
ROAD SAFETY*

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TWO RULEMAKING FORA FOR ROAD VEHICLES:

EUROPEAN UNION AND

UNITED NATIONS ECONOMIC
COMMISSION FOR EUROPE
(UNECE)

EUROPEAN UNION

The Commission has the power of initiative
Council and EP are the co-decisors:

Directive 2002/24/EC is the framework Directive
on type approval of mopeds and motorcycles (also
includes tricycles and quadricycles)

Conformity is required to 13 separate Directives +
1 multi Directive (12 chapters) dealing with safety
and environmental protection

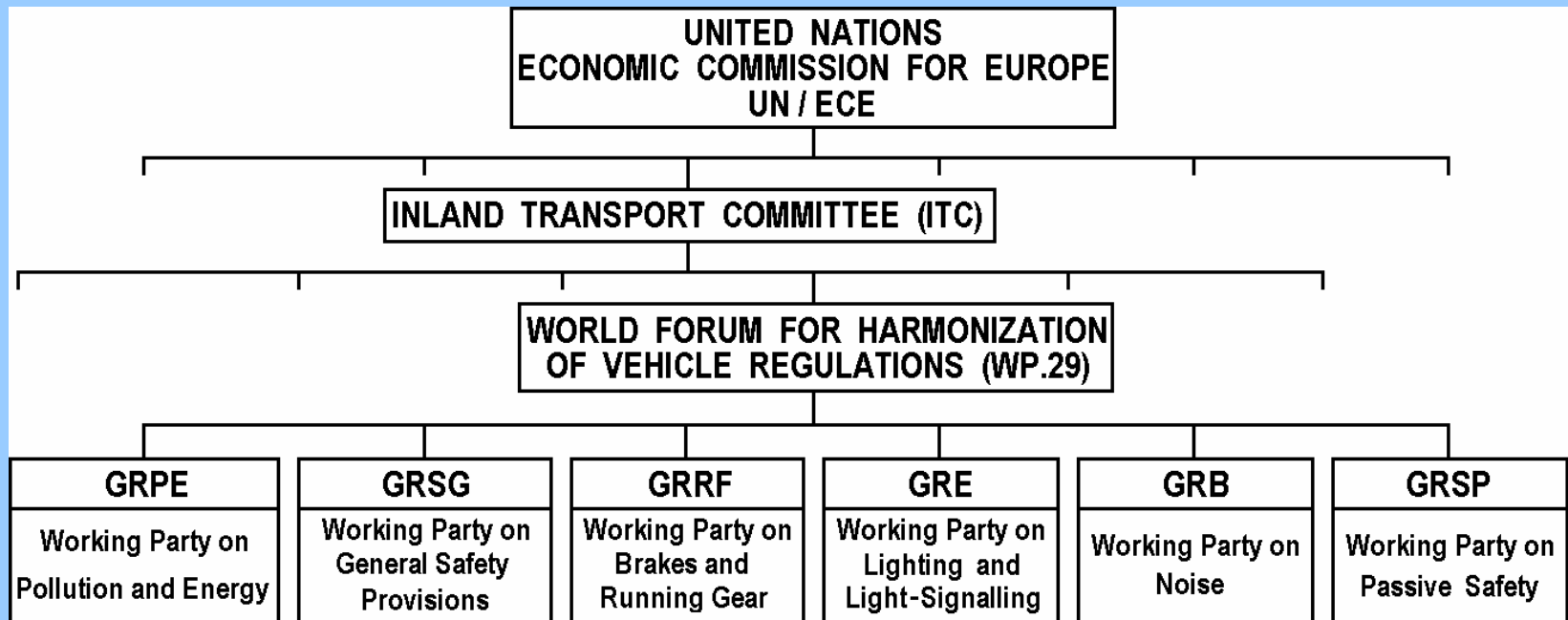
EUROPEAN UNION

- Examples:
- Directive 93/14/EC on braking
- Directive 97/24/EC chapt.1 on tyres
- Eu type approval recognised in EU 27:
- Type approval certificate + certificate of conformity
- Conformity of production to be checked by authority granting type approval

The World Forum for Harmonization of Vehicle Regulations:

A unique Forum within the UNECE

World Forum for Harmonization of Vehicle Regulations (WP.29)



The work of the 6 subsidiary bodies of WP.29 is aimed at:

- the improvement of vehicles' active and passive safety
- the reduction of vehicles' noise level, emissions of pollutants and fuel consumption

Activities of the World Forum

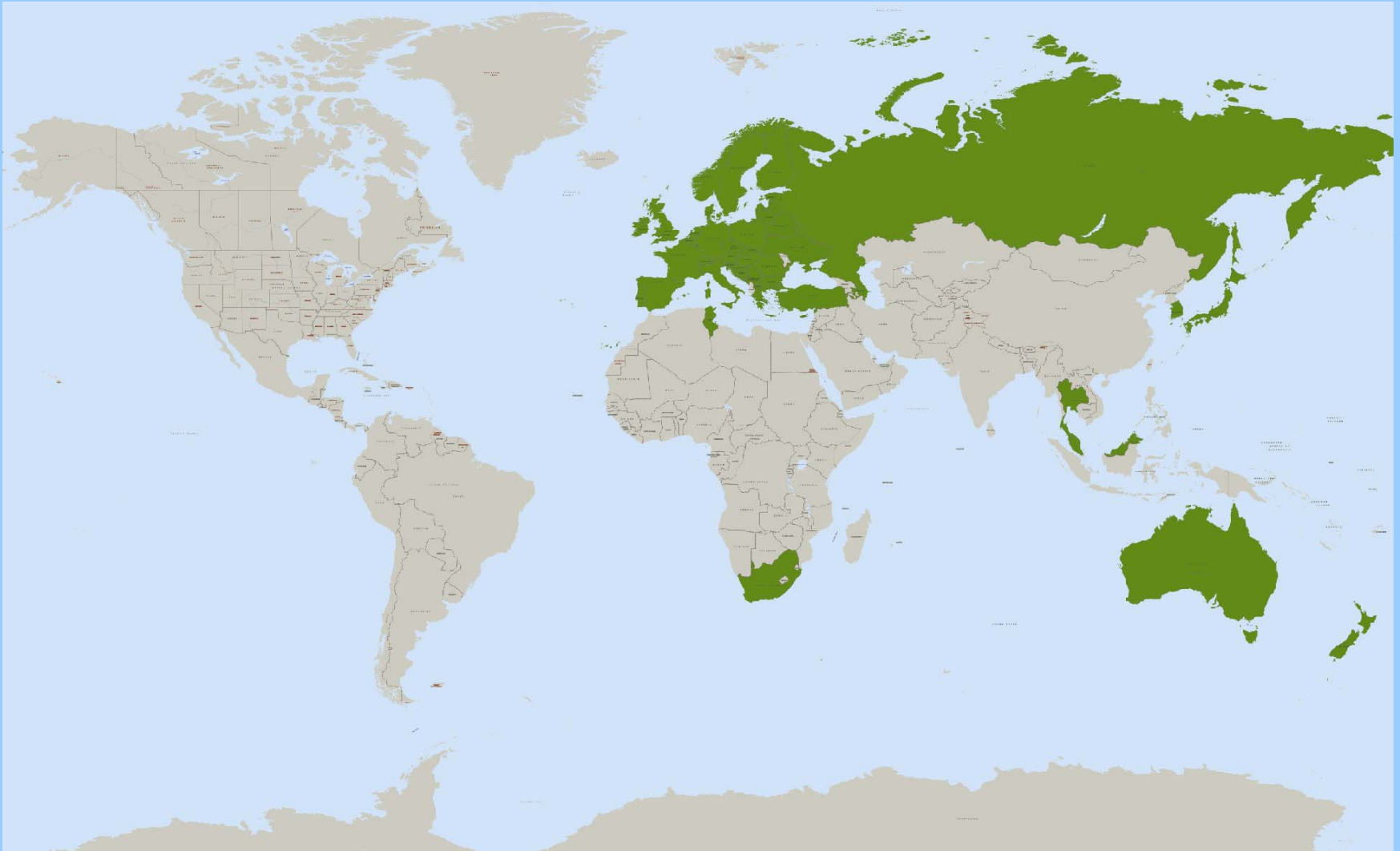
The World Forum is administering 3 Agreements:

1958 Agreement concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for *reciprocal recognition* of approvals granted on the basis of these prescriptions (48 Contracting Parties, 127 UNECE Regulations, 1 new draft Regulation)

1998 Agreement concerning the establishing of global technical regulations (gtrs) for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicle (30 Contracting Parties, 5 gtrs, 4 new draft gtrs)

1997 Agreement concerning the adoption of uniform conditions for periodical technical inspections of wheeled vehicles and the reciprocal recognition of such inspections (11 Contracting Parties, 17 pending signatories, 1 Rule, 1 draft Rule)

1958 Agreement (Contracting Parties)



Vehicle regulations and standards

	International standards (e.g. ISO)	gtrs (1998 Global Agreement)	UNECE Regulations (1958 Agreement)	National / regional legislations (e.g. EU Directives)
Test method	technical provisions	technical provisions	technical provisions	reproduce in total or refer to the provisions of UNECE Regulation, gtrs or international standards (transposition procedure)
Performance requirements	-	limit values	limit values	
Administrative procedures	-	-	certification and COP procedures + mutual recognition	
Application	optional	(optional)	(optional)	

Activities on 2-3 wheelers

UNECE Regulations:

Nos. 3, 19, 20, 37, 38, 50, 56, 57, 74, 76, 82 (lighting and light-signalling devices)

No. 75 (tyres)

No. 78 (braking)

No. 81 (rear view mirrors)

Nos. 41, 63, 9 (noise)

No. 60 (controls, tell-tales and indicators)

No. 22 (protective helmets)

GLOBAL TECHNICAL REGULATION No. 3 MOTORCYCLE BRAKE SYSTEMS

Working in a global forum provides an opportunity to consider most, if not all, international safety concerns as well as available technological developments.

This GTR provides several benefits for motorcycle users and other stakeholders:

- clear and objective test procedures and requirements that can be easily followed,
- also addresses recently developed technologies, such as combined brake systems (CBS) and anti-lock brake systems (ABS); this is significant, as most regulatory requirements of the Contracting Parties currently do not include such requirements.
- Moreover, several Contracting Parties would see additional stopping tests that they did not originally have or that are more stringent.
- Others would see improvement in test procedures such as an improved wet brake test that simulates in service conditions by spraying water onto the disc rather than immersing the disc in water; a specified burnishing procedure that is more objective; and a specified test sequence that would improve test repeatability.

BACKGROUND

In the year 2002, AC.3 adopted its program of work and Canada offered to sponsor the GTR. From 2002 to 2006, 8 informal meetings were held, with the participation of representatives/experts from Canada , USA, Italy, UK, Japan, India, IMMA (International Motorcycle Manufacturers Association), FEMA (Federation of European Motorcyclists' Associations), AMA (American Motorcyclist Association) and JAMA (Japan Automobile Manufacturers Association).

In an effort to select the most stringent performance requirements, an analysis of the relative stringency of three national motorcycle brake system regulations(UN/ECE R78, USA FMVSS No.122 and Japan JSS 12-61) was conducted.

BACKGROUND

USA and Canada conducted a further performance evaluation study on anti-lock brake systems (ABS) for which an international research project was undertaken in order to validate the proposed performance requirements. This test experience also served to verify the specified test conditions and procedures, and to make the necessary adjustments to ensure a more realistic approach to evaluating motorcycle braking performance.

The GTR was approved by WP29 in November 2006, under the reference ECE/TRANS/180/Add.3

<http://www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29registry/gtr3.html>

REGULATIONS AND STANDARDS CONSIDERED

EUROPE

- UNECE Regulation No. 78 – Uniform provisions concerning the approval of vehicles of category L vehicles with regard to braking.
- EU Directive 93/14/EEC, braking for category L vehicles (in effect, the same as ECE Regulation No. 78)

USA: U.S. Code of Federal Regulations (CFR) Title 49: Transportation; Part 571.122: Motorcycle brake systems.

CANADA: Canadian Motor Vehicle Safety Regulation No. 122 – Motorcycle brake systems.

JAPAN: Japanese Safety Standard JS12-61

AUSTRALIA: Australian Design Rule 33/00 – Brake systems for motorcycles and mopeds.

INTERNATIONAL VOLUNTARY STANDARDS

- ISO 8710:1995, Motorcycles – Brakes and braking devices
- ISO 12364:2001, Two-wheeled motorcycles - Antilock braking systems (ABS)
- ISO 8709:1995, Mopeds – Brakes and braking devices
- ISO 12366:2001, Two-wheeled mopeds - Antilock braking systems (ABS)
- SAE J109 MAR87 Service Brake System Performance Requirements - Motorcycles and Motor-driven Cycles.

TECHNICAL RATIONALE

The GTR contains several fundamental tests, amongst the most stringent and relevant test procedures and performance requirements from current standards and regulations, as follows:

- (a) dry stop test with each service brake control actuated separately (UN/ECE Regulation No.78/JSS 12-61)
- (b) dry stop test with all service brake systems applied simultaneously (FMVSS 122)
- (c) high speed test (JSS 12-61)
- (d) wet brake test (UN/ECE Regulation No. 78 / JSS 12-61)
- (e) heat fade test (UN/ECE Regulation No. 78 / JSS 12-61)
- (f) parking brake test (UN/ECE Regulation No.78 / JSS 12-61)
- (g) ABS tests (UN/ECE Regulation No. 78 / JSS 12-61)
- (h) partial failure test – split service brake systems (FMVSS 122)
- (i) servo failure test.

TECHNICAL RATIONALE

Other test conditions that were derived from the national legislations and harmonised in the GTR are:

- Test parameters (Definitions, Environmental conditions, etc)
- Measurement of deceleration and stopping distances
- Vehicle test speed and corrected stopping distance
- Test surface and Peak braking coefficient
- Test sequence
- Controls
- Brake temperature measurement
- Burnishing

TECHNICAL RATIONALE

The GTR combines the better and more stringent procedures from current USA, UNECE, and Japan regulations. This will result in benefits to all motorcycle users in terms of brake performance, brake durability, and potential safety. Examples are:

Countries that apply FMVSS/CMVSS 122 will benefit from the following:

- (i) a wet brake test that simulates in service conditions by spraying water onto the disc;
- (ii) a more stringent dry brake test;
- (iii) a more stringent heat fade test;
- (iv) a more stringent high speed test;
- (v) an additional test to evaluate ABS performance.

TECHNICAL RATIONALE

Countries that apply UNECE Regulation No. 78 will benefit from the following:

- (i) a specified burnishing procedure for government conformity testing;**
- (ii) an additional test from 100 km/h with both brakes applied;**
- (iii) a more stringent high speed test;**
- (iv) additional general requirements e.g. warning lamp specification, brake system inspection;**
- (v) a specified test sequence.**

Countries that apply JSS 12-61 will benefit from the following:

- (i) a specified burnishing procedure for government conformity testing;
- (ii) an additional test from 100 km/h with both brakes applied;
- (iii) additional general requirements e.g. warning lamp specification, brake system inspection;
- (iv) a specified test sequence.

Conclusion

WP.29 is the unique World Forum for the world-wide harmonization of regulations related to the construction of vehicles.

Future European Union legislation will be based on UNECE Regulations.

All regulations, calendar of meetings, agenda, working documents and reports are available at the WP.29 website: www.unece.org/trans/main/welcwp29.htm including the Terms of Reference and the Rules of Procedures of all informal groups related to WP.29's activities