

High Speed Test Harmonisation

Progress Report Following
Meeting With Certain Contracting
Parties in Brussels, July 2007

Generalities

- At the request of the ad hoc gtr for tyres working group chairman, a meeting was organised by the tyre industry to discuss preliminary results of high speed test harmonisation
- The meeting was hosted by ETRTO in Brussels on July 11, 2007
- Attendance by Tyre Industry and following CPs:
 - Belgium
 - European Commission
 - France
 - Japan
 - Netherlands
 - United Kingdom
 - United States of America

Subjects Discussed

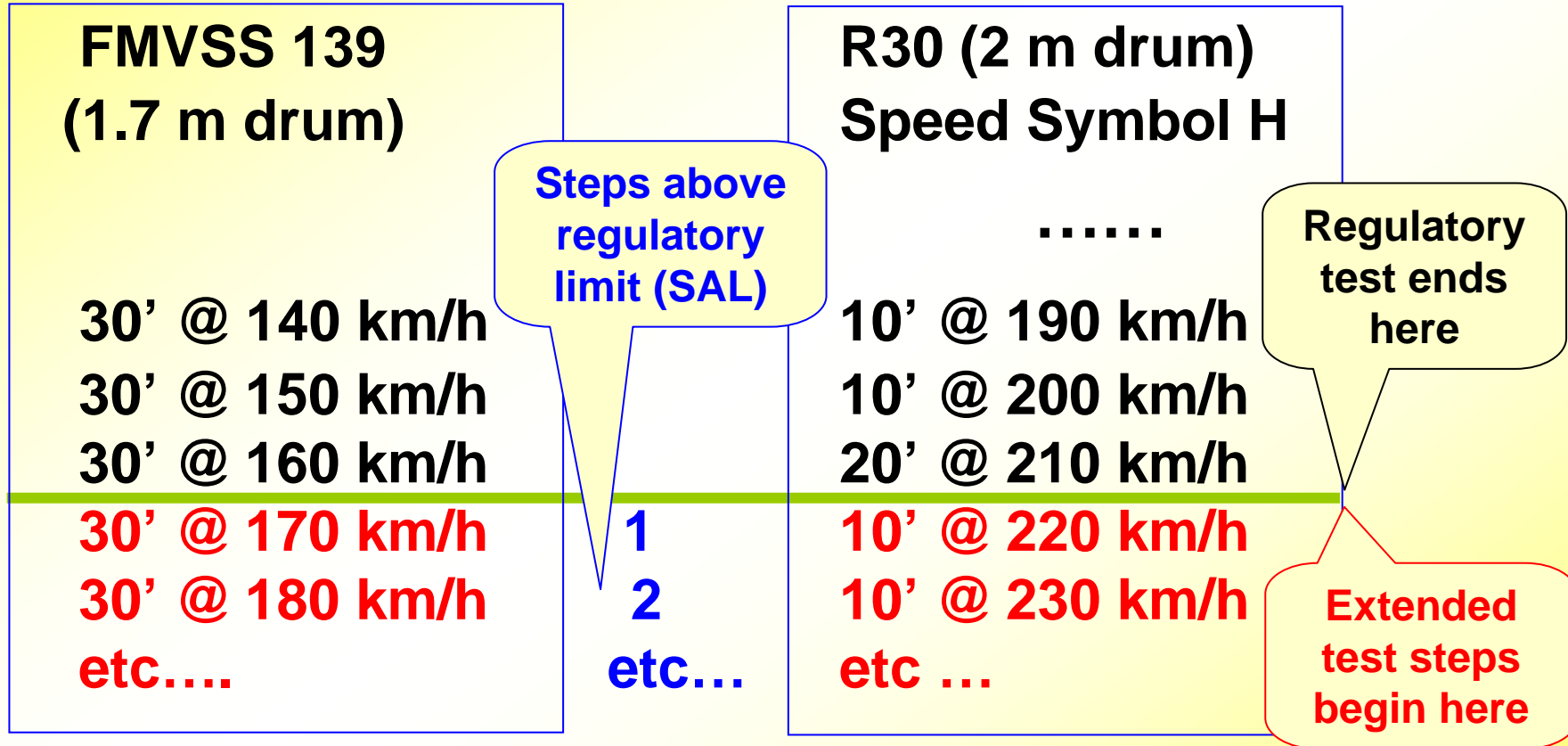
- Method for determining which HS test is more severe
- Preliminary analysis of tyre industry data
- Discussion of method and results
- Suggestions for proceeding

Method

- Measure two identical tyres once on each test
- Run the test in "extended" fashion, with additional steps beyond the regulatory requirement
- Record the number of Steps Above Limit (SAL) for each tyre/test combination
- The test result with the lowest SAL is the most severe test for that tyre
 - Just like jumping over a bar
 - The less space between you and the bar, the harder the test
- To make the data non-confidential, calculate the ratio of SAL FMVSS 139 divided by SAL R30
- Perform this sequence of events for a large number of tyres with different speed symbols
- Analyse the results

Test Conditions

Run extended regulatory tests until unable to continue:

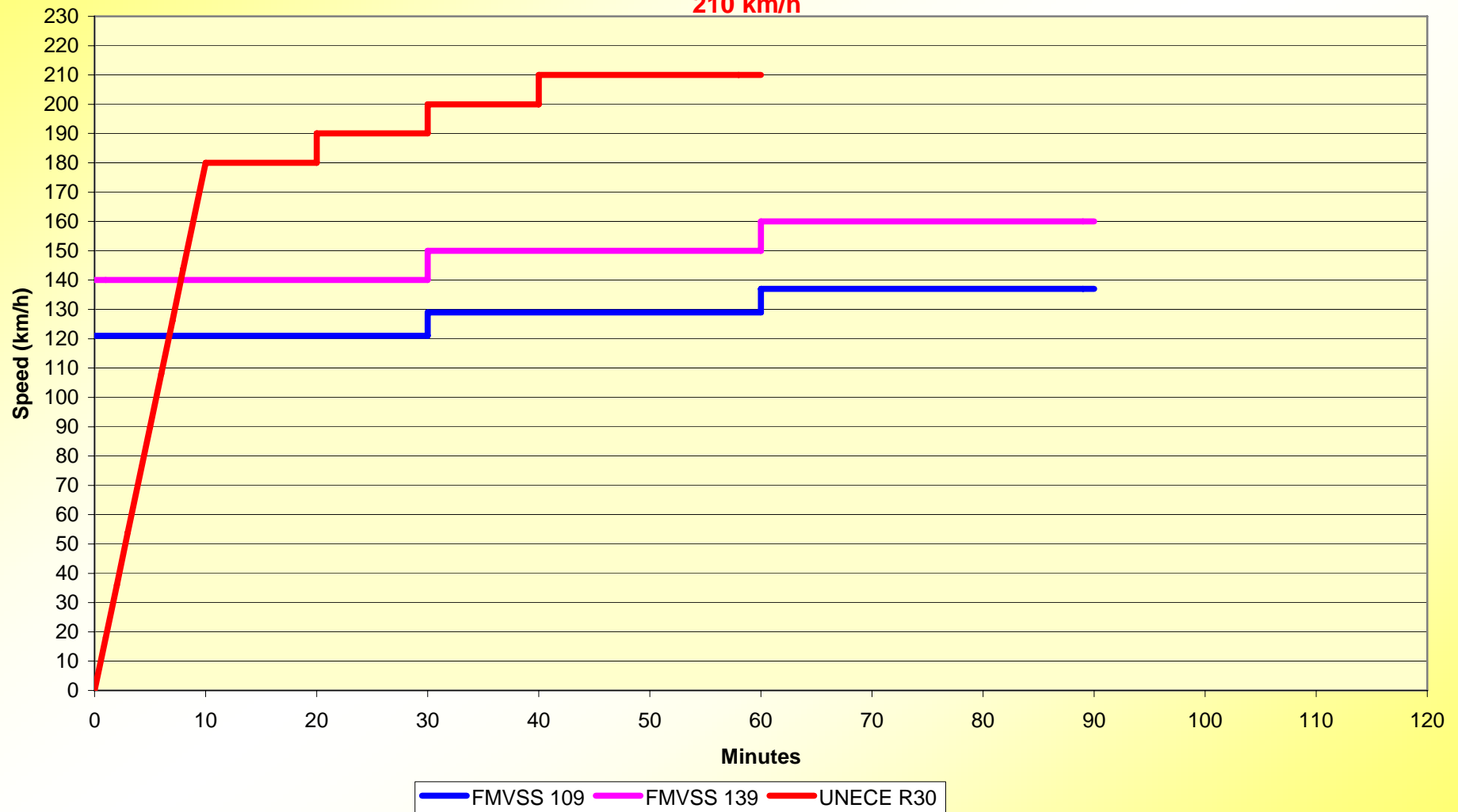


All other conditions (T°, load, pressure, etc.) are as specified in the regulations

Graphical Representation of Regulatory Tests

Example for Speed Symbol H

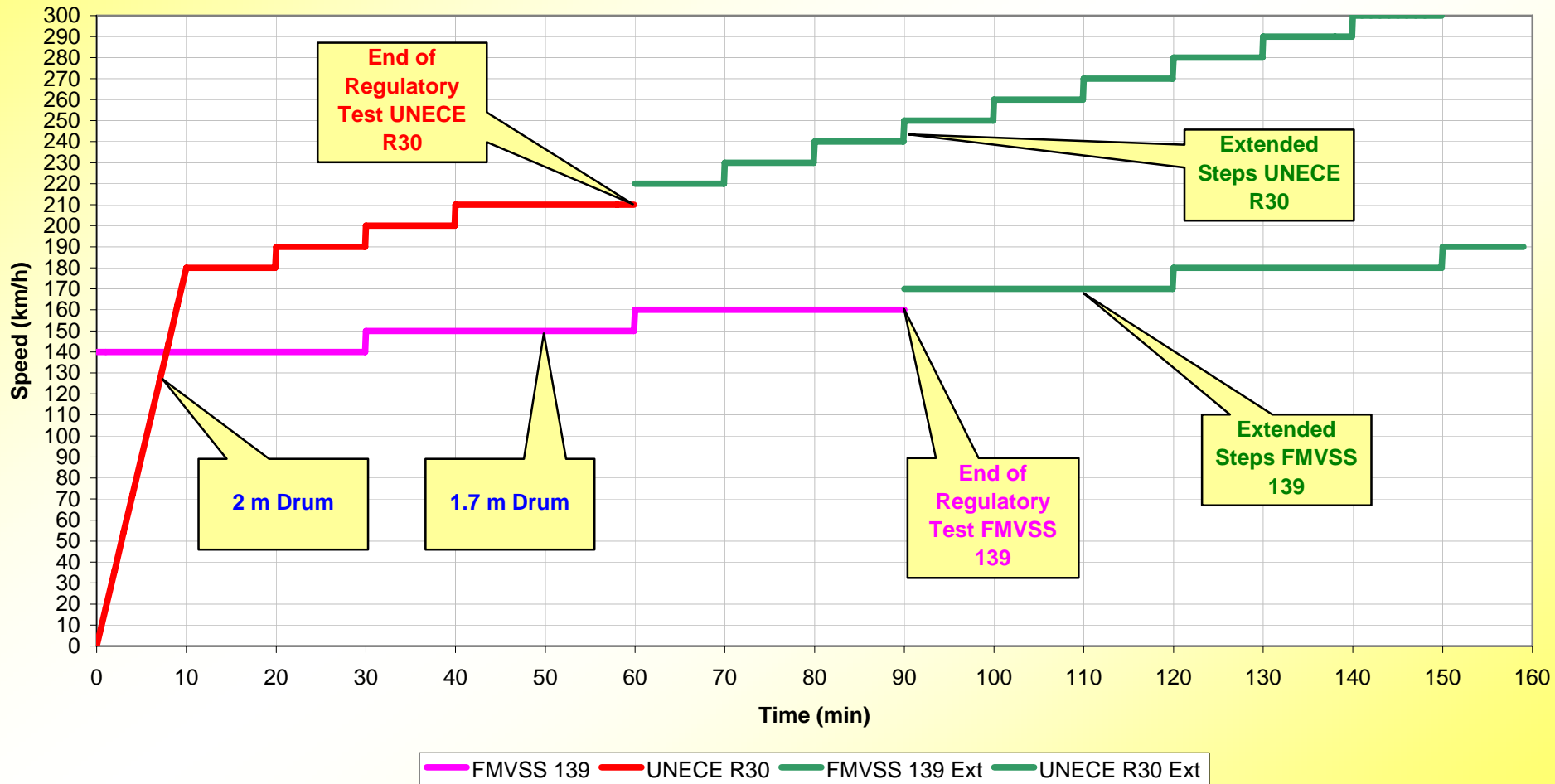
210 km/h



Graphical Representation of Extended Regulatory Tests

Example for Speed Symbol H

210 km/h



Example (fictional data)

- 205/55 R 16 H (210 km/h)
- FMVSS 139 Extended
 - Steps Above Limit = 5.5 (i.e. the tyre failed after 15 minutes at 220 km/h)
- R 30 Extended
 - Steps Above Limit = 2.3 (i.e. the tyre failed after 3 minutes at 240 km/h)
- The ratio is $5.5/2.3 = 2.39$
- For this tyre, R30 is the more severe test

Example of Results

Real data, extract of full data set

Tyre Designation	Speed Symbol	Rated Speed	SAL139 / SAL30
175/80R14Q	Q	160	0,568
205/55R16 91Q	Q	160	0,580
175/80R14Q	Q	160	0,611
205/55R16 91Q	Q	160	0,626
215/65R 16 98S	S	180	0,800
215/65R 16 98S	S	180	0,919
215/70 R 16 99S	S	180	0,927
215/70 R 16 99S	S	180	1,043
215/65R 16 98T	T	190	1,048
145/70 R 13 71T	T	190	1,058
215/65R 16 98T	T	190	1,086
215/65R 16 98T	T	190	1,089
145/70 R 13 71T	T	190	1,129
195/60R 15 88H	H	210	1,220
195/60R 15 88H	H	210	1,282
185/60 R 14 82H	H	210	1,486
215/55R 16 93H	H	210	1,520
215/60R16 95V	V	240	1,742
215/60R16 95V	V	240	1,779
245/40R18 93Y	Y	300	2,711
245/40R18 97 XL	Y	300	2,872
235/35 R19 91 Y ExtraLoad	Y	300	3,656

Preliminary Data

- 6 manufacturers supplied data
- 704 tyre types tested twice each
- Number of Steps Above Limit (SAL) for each test calculated
- Ratio of SAL FMVSS 139 / SAL R30 calculated and reported to ETRTO

Note 1: All 704 tyres passed both regulatory tests

Note 2: Data from another 79 tyre types (12 V rated, 54 W rated and 13 Y rated tyres) were excluded from the analysis because the tyres continued to perform beyond a reasonable test duration on the FMVSS 139 extended test

Conclusions (from meeting report)

"Attendees agreed to say that:

- There is a consensus on the methodology that was used.
- According to this methodology we concluded that:
 - S rated tyres and below should be tested with FMVSS 139
 - H rated tyres and above should be tested with R30
 - Additional work needs to be done on speed symbol T"

Additional Work Plans

- Only T speed rated tyres need additional work
- The delegate from the USA expressed interest to obtain tyre temperature data to evaluate severity
- The tyre industry will assist them in their efforts

**Thank you for your
attention!**