Submitted by the experts
from RMA, JATMA and ETRTO

Working Paper N°: TyreGTR-12-07e
(Tyre GTR Meeting, 16-17 February 2012
Agenda item 6)

Counter Proposal and Rationale Regarding

OICA Font for Tyre Identification Proposal (TYREGTR-12-03)

Relative to 3.2.1.9.1:

To our knowledge, there has been no optical reader testing of any tyres marked with OCR-B, or any font, and there is no assurance that any font would meet the requirement of being easily legible by optical character readers, as reading black type on a black background is challenging.

It is also not clear whether the existing fonts based on futura bold, modified condensed or gothic font would be considered 'easily legible', and might not be accepted, if 3.2.1.9.1 is retained.

Below is a picture of a currently produced Tyre.

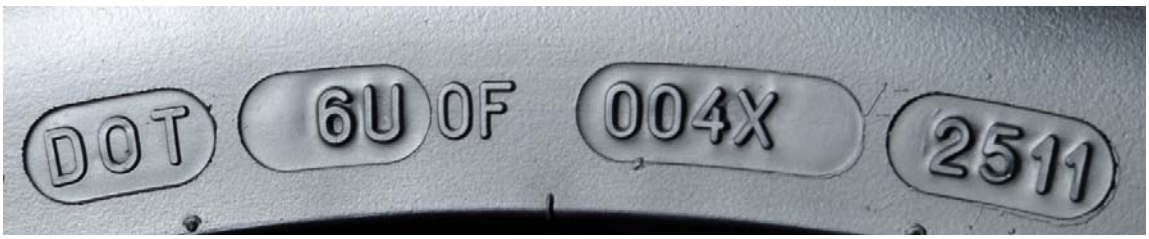
Other features of current tyre markings (such as the outline of the mold insert) may or may not be tolerated by optical readers. If OICA wishes to pursue this application to tyres, a full study should be undertaken. Some of the questions which should be explored include:

Question: Does the 'optical character recognition' require a specific letter or number spacing? Does it comply with current FMVSS letter spacing requirements?

Question: As you can see in the example below, both engraving and stamping are being used. Are these acceptable for OCR reader?

Question: We also use plaquettes for most of the marking, which induces a line above and between the letter/number information. Would these lines confuse an OCR reader?

Question: Will a prefix and suffix "symbol" confuse an OCR reader? For example, it is possible to place "DOT" in front of the TIN, and as a suffix, the Canadian Maple Leaf.



Relative to 3.2.1.9.3:

The term 'depth' is proposed to be changed to 'positive or negative relief', as that is a more general description of current permitted tire molding.

Relative to 3.2.1.10.1:

The phrase ‘a version of’ has been inserted, and the phrase ‘or an equally legible equivalent’ to more completely reflect the range of fonts currently approved and in use. Without these additions, significant numbers of molds will have to be remanufactured.

*Tyre Industry proposed changes (*red and ~~strike-through~~*) (14 February 2012)*

Working Paper N° : TYREgtr-12-03
(OICA) Font for Tyre Identification Number in draft gtr

Font for Tyre Identification Number

1. PROPOSAL

OICA proposal for amendment to the draft text of the gtr (only the bold text is changed):

"3.2.1.5. The Tyre Identification Number shall be located on the intended outboard sidewall of the tyre, and positioned between the bead and 50% of the distance from the bead to the tread. On the other sidewall of the tyre either a tyre identification number or a partial tyre identification number is required. The partial tyre identification number is comprised of all characters except the date code.

3.2.1.6. The content of the manufacturer's code is optional, but the data field is not.

3.2.1.7. The symbols to be used in the tyre identification number format are A, B, C, D, E, F, H, J, K, L, M, N P, R, T, U, V, W, X, Y, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

3.2.1.8. The symbols that shall not be used are G, I, O, Q, S, and Z.

3.2.1.9. The Tyre Identification Number shall be

~~**3.2.1.9.1. easily legible by automated optical character recognition systems, and**~~

3.2.1.9.2. of a character size not less than [6.35 mm (0.25 inch)] high, and

3.2.1.9.3. permanently moulded with a ~~depth~~ positive or negative relief between [0.508 mm (0.020 inch) and 1.016 mm (0.040 inch)].

3.2.1.10 The font of the of Tyre Identification Number shall be:

3.2.1.10.1. a version of Futura Bold, Modified Condensed or Gothic font, or an equally legible equivalent, or

3.2.1.10.2. the font OCR-B as defined in ISO 1073-2:1976."

JUSTIFICATION

The Tyre Identification Number font and size need to be accurately defined to ensure readability.
Some vehicle manufacturers use this marking, based on the NHTSA rule 49 CFR Part 574.10, to ensure that the right tyres are mounted on the right vehicles and to keep track of the tyres mounted on each vehicle, while labelling systems are proven unreliable and expensive.

Automated optical character recognition of the complete Tyre Identification Number is an efficient way to minimize misreadings and to simplify the recording of Tyre Identification Numbers.

Paragraph 3.2.1.8. of the Tyre GTR already partially addresses the problem of automated optical character recognition by prohibiting some characters which do not sufficiently differentiate from each other. However, to allow the automated optical character recognition to work on a black rubber surface in an industrial environment there need to be more limitations to the shape of the characters allowed.

The proposed font, OCR-B, is developed to ensure reliable readings by automated optical character recognition as well as by the human eye. The use of this font is widely spread in many other implementations.

This OICA proposal evolved compared to the previous document TYREgtr-09-05 in that it refers now to the current text of the draft gtr, as updated per document TYREgtr-12-01, and clearly defines the minimum character sizes and mandates some particular fonts.

The proposed sizes are indicated between [ ] as OICA has no position on the sizes nor on their accuracy.