6th Informal meeting: GTR motorcycle braking – 06/06/06-07

Participants:
Canada : Mr Brault
USA : Mr Wondimneh, Soodoo
Japan, JASIC : Messrs Hoshi, Hayashi, Hibara, Kiuchi, Sahashi
IMMA : Messrs Cart, Dutrieux, Honda, Rogers, Stocker, Twining
India : Badusha, Ramiah
UK : Thatcher

1. Minutes

1.1 Minutes of 5/GTRBR

Agreed : The minutes of 5/MCGTR (27-GTRBR-05 of 05/11/26)

1.2 Documents issued since the last agenda

The documents 19-GTRBR-06 to 26-GTRBR-06

2. Discussion of the results of the ABS test plan

Documents : 11-GTRBR-06, plan for action
: 18-GTRBR-06, project progress
: 10-GTRBR-06-rev1, revised test plan

Noted : The remaining issues (as discussed during the pilots tests) were related to the ABS testing:

- Surface measurement of friction methods/comparison between K-method – ASTM
- Performance requirements: low μ and high μ, low-high μ jump;
- ABS cycling with a certain input brake force;

: The presentation of the testing results from the NHTSA contractor

: The main conclusions from the ABS testing were:

- The K-method and the ASTM method had showed comparable results.
- Performance requirements for low μ and high μ could be met easily. (However the low μ surface was slightly above 0,45)
- The low-high μ jump test had showed that it was difficult to determine a specific time to identify the low to high μ transition.

: USA's suggestion to only look at the point of rise of deceleration value.

- During tests, some motorcycles had experienced a rear wheel lift : did this event mean a failure of meeting the performance requirements ?

: The test results from UK:

- low μ test done on a surface slightly less than 0.3; high μ test done at (approx) 0,75
- low to high μ jump test done for brake controls actuated simultaneously and separately.

: The test results from NL:

- Test done on asphalt and basalt; low μ test done on a surface slightly less than 0,3
- It was not clear if only 6 stops had been made.
- It was not clear where the response transition time of the low to high μ stop came from.
- Need to check in "MEETBLAD nr 1" if the test results of the Wet, High Friction Surface were actually not the test results of the Dry High Friction Surface.

: The test results from Harley-Davidson:

- The test had been done one bike with one rider.
- Tests done with both brake controls applied simultaneously.

- Test track of asphalt (0,98) and basalt (less or equal to 0,3).
- A test bike weight of 760 pounds (including test equipment and rider).

: The following paragraphs of the GTR text had been agreed without change:

- Paragraph **4.9.1** `General Information`
- Paragraph **4.9.3.2** `Performance Requirements/high friction surface`

: For Paragraph **4.9.3.1** `Test conditions and procedure`, IMMA proposed to use a maximum brake actuation value.
: Harley-Davidson did not see the need for a value as the only issue to consider was to confirm the ABS cycling.
: Harley-Davidson proposed a wider range/tolerance.
: Two possibilities/options for the "brake actuation force" section of Paragraph 4.9.3:

1) the force applied shall be that which is necessary to ensure that the ABS is cycling fully from the test speed to 10 km/h (thus no forces specified)
2) to have a max. brake actuation force of 250 N for hand control and 400 N for foot control (from § 4.4) and link it to a note which states that the ABS must be cycling throughout the stop)

: USA preferred option 2 but IMMA and Japan wanted to have option 1.
: TransportCanada preferred possibility 2, but as it was not a requirement in any existing regulation, could accept option 1.
: IMMA reasoning was that there was no justification based on long time testing.
: IMMA though that the basic (foundation) brake test already covered the general braking capability of the motorcycle.
: USA needed for compliance reason to include an upper limit and therefore could not accept option 1.
: For Paragraph **4.9.7.2** `Performance Requirements/low to high friction surface transition`:
: UK was not completely satisfied as they would like to have the same text as in R78.
: IMMA noted that not enough data was yet available in order to include specific values.
: A proper justification, if any, should be prepared for GRRF when possible.
: A presentation from US with counter proposal which would require meeting a specified deceleration over a length of track which includes the transition point (low to high) in the middle.
: IMMA commented that this would need time to be verified and would also require the test conditions to be specified.
: USA stated that the low-high mu jump test was not necessary, and then could accept only a stability test instead.
: Harley-Davidson using a procedure based on a % of the average deceleration of the high μ test, which must be attained within a certain response time after the low to high transition point.
: Japan stated that the USA counter proposal would require additional testing.
: The Harley-Davidson procedure could be checked with the current available test data but more detailed investigation would be necessary.
: UK stated that there was not enough time but was in favour of the premise behind the Harley-Davidson procedure.
: IMMA would consider the various options.
: No specific text had been included as it was agreed that not enough data was available and that IMMA's concerns had been addressed by allowing lower control forces.

Agreed: The main issue was to confirm the ABS functioning;
: No final decision was achieved for Paragraph 4.9.3.1.
: It was decided to keep both possibilities in the draft GTR text with arguments for both in the Preamble.
: The GTRBR Group would have to reach an agreement before the extra GRRF session of June.

: For Paragraph **4.9.4.2** `Test conditions and procedure/low friction surface`, it was agreed to use

0.7 times (70%) of the actual test surface coefficient with a maximum of 0.45 PBC, which would mean that manufacturers could do their test on lower then 0.45 PBC but (for US) would have to verify also a test on 0.45 PBC as this would be the compliance value to be checked by NHTSA

: The following text:

(a) the stopping distance (S) shall be $\leq 0.0056V^2/P$ (where V is the specified test speed in km/h, P is the peak braking coefficient and S is the required stopping distance in meters) or the MFDD shall be $\geq 6.87P$ m/s^2

: The following text for Paragraph **4.9.7.2** `Performance Requirements/low to high friction surface transition` had been confirmed

After passing over the transition point between the low and high friction surfaces, the vehicle deceleration shall increase.

3. Discussion of the Indian questions

Documents: 15-GTRBR-06, the Indian comments

Noted : The Indian presentation (***Annex1.ppt***)

: India made a presentation which contains a counter proposal to §4.4.3, that was less stringent, because of certain types of small motorcycles which had difficulty meeting the proposed requirements.

: There were no such issues for other Members of the GTRBR Group.

: Some mechanisms in the 1998 Global Agreement would allow the Indian issue to be solved at the national level, and this would be the best solution at this time.

Agreed : The points listed as replies to the comments (***Annex2.doc***)

4. Next steps

Agreed : The following timetable

1. by 9th of June, the pro's/con's on the outstanding item (ABS brake actuation force) would be circulated by the Chairman to the GTRBR Members
2. By the 14th of June, GTRBR Members would indicate their preference to the Chairman
3. The Chairman would revise the Preamble text and the GTR text as agreed during the meeting and circulate them by 12th of June
4. Comments would be forwarded by GTRBR Members to the Chairman by 14th June
5. The final revised draft GTR text would be forwarded to the UN Secretariat as an informal document to GRRF

5. Future meetings

Agreed : A date for 7/MCGTR would be defined if necessary