

Paragraph	Details of issue	IMMA'S comment and proposed solution	TC Comments / NHTSA Comments
Throughout gtr	Japan propose that the terms "actuation", "activation", and "application" are harmonised.	IMMA partially agrees and proposes to carry out a review of the text and use the most appropriate term. For example, dictionary states that "actuate" means "to move to mechanical action".	TC agrees. The wording must be consistent throughout the text. NHTSA Comments: Agree with IMMA and TC
2. Definition	Transport Canada proposes a new definition – <i>Wheel slip</i> - and suggests "the difference between the vehicle speed and the respective wheel speed".	IMMA agrees that this definition may be necessary but would like to see the appropriate definition from ISO used. To be provided.	TC agrees. NHTSA Comments: Agree with IMMA and TC
2.5 CBS Definition	Japan requires the definition to apply to the "wheels" and not "axles". Eg. ...where the brakes on all wheels are activated by the operation of a single control.	"Wheel" is used in R78 and IMMA proposes that the text is modified to read "wheels" throughout the definition.	TC agrees. NHTSA Comments: Agree
2.11 Lightly loaded Definition	The definition currently states that the mass of the outriggers are included in 15 kg specified for test equipment. JAMA state that this is insufficient and require an extra allowance to cover the mass of the outriggers	IMMA agrees and thus proposes the following revised definition: <i>Lightly loaded</i> means mass in running order plus an allowance of 15 kg for test equipment. In the case of ABS tests on a low friction surface (paragraphs 4.9.4 - 4.9.7), the mass for the test equipment may be increased to 30 kg, including outriggers.	TC agrees. Suggest clarification of definition to read: <i>Lightly loaded</i> means mass in running order plus an allowance of 15 kg for test equipment. In the case of ABS tests on a low friction surface (paragraphs 4.9.4 - 4.9.7), the mass for the test equipment may be is increased to 30 kg, including to account for outriggers. NHTSA Comments: Agree with TC
2.18 SSBS Definition	Japan are concerned that the definition does not specify the number of wheels or axles being braked.	IMMA agrees and thus proposes the following revised definition: <i>2.18 Split service braking system (SSBS)</i> means a brake system, which activates the brakes on all wheels , consisting of two or more subsystems.....	TC agrees. NHTSA Comments: Agree with TC
3.1.10 Reservoirs	UK require the text to specify that the reservoir is "sealed" and "covered".	IMMA agrees and proposes that the following text be inserted into the GTR:shall: a. have a sealed, covered , separate reservoir for each brake system.	OK NHTSA Comments: Agree
4.2.4 Brake temp. measurement	NHTSA wish removal of the sentence "Contracting parties may specify"	IMMA disagrees as the sentence makes it clear that either method of measurement may be used.	TC does not agree with IMMA's interpretation. TC does not accept measuring brake temperature with the rubbing thermocouple. Both methods are included and it is at the discretion of the Contracting Party to select which method is acceptable. This is an OPTION to the Contracting Party. This option is accomplished with wording borrowed from gtr 1 concerning door locks: "Based on a determination by each Contracting Party or regional economic integration organization, the brake temperature may be measure by: (a) a rubbing thermocouple that is in contact with the surface of the disc or drum or; (b) a thermocouple that is embedded in the friction material." NHTSA Comments: Agree with TC
4.2.5 Burnishing procedure	NHTSA wish to remove the sentence "unless the manufacture supplies the vehicle for testing with the brakes already burnished."	IMMA disagrees because a note is required for ECE and so proposes this alternative text: "If the vehicle certification is based on type approval, the manufacture may supply the vehicle for testing with the brakes already burnished".	NHTSA to comment. TC suggest new text: "The vehicle brakes must be burnished prior to evaluating performance. This procedure may be completed by the manufacturer." NHTSA Comments: The GTR reg. text should be silent on this so as to be certification-type neutral. The text can be inserted later by countries that apply type approval when adopting the GTR. Further consideration / discussion required.
4.6.1 Wet brake test	Text currently states "Test is not applicable to parking brakes" TC require that if the secondary brake is the parking brake, it must meet the wet brake requirement.	IMMA agrees and proposes that the following text be inserted : "The test is not applicable to parking brakes, unless it is the secondary brake "	TC agrees. NHTSA Comments: Agree

4.7.3.2 Heat fade test	Japan requests that the following sentence is removed “Note that if the vehicle is unable to achieve the specified deceleration rate, these stops are carried out at the maximum achievable value”	IMMA disagrees. This note is included because some rear brakes could have a performance that does not meet the level required for the Heating procedure. The note is included in R78. However, the sentence should be moved up 2 lines in the text to follow “.....of the specified speed.” for clarity.	TC suggests text be revised to read: “Note that if the vehicle is unable to achieve the specified deceleration rate, these stops are carried out at the maximum achievable value to meet the deceleration requirements in the table in paragraph 4.3.3.” NHTSA Comments: Agree
4.9.3.1 4.9.5.1 4.9.6.1 4.9.7.1 ABS Stops on various surfaces	NHTSA want to remove the sentence “These forces may be increased in order to ensure that the ABS is fully cycling during the stop” because it is too subjective.	IMMA disagrees. The note is required because on some vehicles, the ABS may not fully cycle even at maximum force levels. In this case, the ABS would not be tested.	TC is flexible on this point... NHTSA to comment. NHTSA Comments: We think it is unreasonable to allow any level of force to be used to actuate brakes. There should be some upper limit. We had discussed using a tolerance as high as 20 percent. This is our proposal. Further consideration / discussion required. For example, Reg 13-H, annex 6 allows control force to be doubled in order to cause ABS to cycle.
4.9.3.2+4.9.4.2 ABS Stops on high friction and low friction.	At present, the gtr does not include a test to assess the ABS for stopping performance. A test is required but a suitable procedure that complies with US/TC self certification and also meets the European wish for a measure of adhesion utilisation has not been agreed.	IMMA agrees that a test is required and can accept most options. Internal discussions revealed 8 options and 2 of these have been forwarded to Transport Canada for consideration and further discussion.	Propose performance criteria based on IMMA proposal (1 st option), further developed by NHTSA. NHTSA Comments: Agree with IMMA option 1.
4.9.3.2 ABS Stops on high friction	Japan and TC are not satisfied with the sentence “Periods of wheel locking or of extreme wheel slip such as occur at the moment of initial brake application shall be allowed provided that the stability of the vehicle is not adversely affected. Japan require the words in bold to be removed. TC state that the words “periods” and “extreme” are too subjective.	IMMA generally agrees and proposes the following: “Wheel-lock, such as occurs at the moment of brake application, shall be allowed provided that the stability of the vehicle is not adversely affected.” Because this note is applicable to all ABS tests, it should be moved to 4.9.1	TC agrees in principle, but suggests more objective wording: “Wheel-lock, such as occurs at the moment of brake application, shall be allowed provided that the stability of the vehicle is not affected to the extent that it requires the operator to release the control or causes a vehicle wheel to pass outside the applicable test lane. ” (see 4.1.6) NHTSA Comments: We also agree with both IMMA and TC that this should be better defined to be objective. Our legal department is working out a proposed text.
4.9.7.2 Wheel lock check – low to high friction	Regarding the sentence “After passing over the transition point between the low and high friction surfaces, the vehicle deceleration shall increase”. NHTSA require values for deceleration and time to be added.	IMMA is unable to provide proven values and so proposes that the text is not changed.	TC is flexible on this point... NHTSA to comment. NHTSA Comments: We will propose values for deceleration and timing based on test data that we will develop between GRRF and the next session of WP.29. Further consideration / discussion required.