S6.5. *Procedural conditions.* S6.5.1. *Brake control.* All service brake system performance requirements, including the partial system requirements of S7.7, S7.10 and S7.11, must be met solely by use of the service brake control.

S6.5.2. *Test speeds.* If a vehicle is incapable of attaining the specified normal test speed, it is tested at a speed that is a multiple of 5 km/h (3.1 mph) that is 4 to 8 km/h (2.5 to 5.0 mph) less than its maximum speed and its performance must be within a stopping distance given by the formula provided for the specific requirement.

S6.5.3. Stopping distance.

S6.5.3.1. The braking performance of a vehicle is determined by measuring the stopping distance from a given initial speed.

initial speed. S6.5.3.2. Unless otherwise specified, the vehicle is stopped in the shortest distance achievable (best effort) on all stops. Where more than one stop is required for a given set of test conditions, a vehicle is deemed to comply with the corresponding stopping distance requirements if at least one of the stops is made within the prescribed distance.

S6.5.3.3. In the stopping distance formulas given for each applicable test (such as $S=0.10V+0.0060V^2$), S is the maximum stopping distance in meters, and V is the test speed in km/h.

S6.5.4. Vehicle position and attitude. S6.5.4.3. The vehicle is aligned in the center of the lane at the start of each brake application. Steering corrections are permitted during each stop.

Sô.5.4.2. Stops are made without any part of the vehicle leaving the lane and without rotation of the vehicle about its vertical axis of more than $\pm 15^{\circ}$ from the center line of the test lane at any time during any stop.

S6.5.5. *Transmission selector control.* S6.5.5.1. For tests in neutral, a stop or

snub is made in accordance with the following procedures:

(a) Exceed the test speed by 6 to 12 km/h (3.7 to 7.5 mph);

(b) Close the throttle and coast in gear to approximately 3 km/h (1.9 mph) above the test speed;

(c) Shift to neutral; and

(d) When the test speed is reached, apply the brakes.

S6.5.5.2. For tests in gear, a stop or snub is made in accordance with the

following procedures: (a) With the transmission selector in the control position recommended by the manufacturer for driving on a level surface at the applicable test speed, exceed the test speed by 6 to 12 km/h (3.7 to 7.5 mph);

(b) Close the throttle and coast in gear; and

(c) When the test speed is reached apply the brakes.

(d) To avoid engine stall, a manual transmission may be shifted to neutral (or the clutch disengaged) when the vehicle speed is below 30 km/h (18.6 mph).

S6.5.6. *Initial brake temperature (IBT)*. If the lower limit of the specified IBT for the first stop in a test sequence (other than a parking brake grade holding test) has not been reached, the brakes are heated to the IBT by making one or more brake applications from a speed of 50 km/h (31.1 mph), at a deceleration rate not greater than 3 m/ s^2 (9.8 fps²).

S7. Road test procedures and performance requirements. Each vehicle shall meet all the applicable requirements of this section, when tested according to the conditions and procedures set forth below and in S6, in the sequence specified in Table 1.

TABLE 1.—ROAD TEST SCHEDULE

	Testing order	Section No.
Vehicle	loaded to GVWR:	
1	Burnish	S7.1
2	Wheel lock sequence	S7.2
Vehicle	loaded to LLVW:	
3	Wheel lock sequence	S7.2
4	ABS performance	S7.3
5	Torque wheel	S7.4
Vehicle	laded to GVWR:	
6	Torque wheel	S7.4
7	Cold effectiveness	S7.5
8	High speed effectiveness	S7.6
9	Stops with engine off	S7.7
Vehicle	loaded to LLVW:	
10	Cold effectiveness	S7.5
11	High speed effectiveness	S7.6
12	Failed antilock	S7.8
13	Failed proportioning	
v	alve	S7.9
14	Hydraulic circuit failure	S7.10
Vehicle	loaded to GVWR:	_
15	Hydraulic circuit failure	S7.10
16	Failed antilock	S7.8
17	Failed proportioning	0 - 0
V	alve	\$7.9
18	Power brake unit failure .	\$7.11
19	Parking brake—static	\$7.12
20	Parking brake—dynamic	\$7.13
21	Heating snubs	\$7.14
22	Hot performance	57.15
23	Brake cooling	57.16
24	Recovery performance	57.17
25	Final inspection	57.18

S7.1. Burnish.

S7.1.1. *General information*. Any pretest instrumentation checks are conducted as part of the burnish procedure, including any necessary rechecks after instrumentation repair, replacement or adjustment. Instrumentation check test conditions must be in accordance with the burnish test procedure specified in S7.1.2 and S7.1.3.

- S7.1.2. Vehicle conditions.
- (a) Vehicle load: GVWR only.
- (b) Transmission position: In gear.

S7.1.3. *Test conditions and procedures.* The road test surface

conditions specified in S6.2 do not apply to the burnish procedure.

(a) IBT: 100 °C (212 °F).

(b) Test speed: 80 km/h (49.7 mph). (c) Pedal force: Adjust as necessary to maintain specified constant deceleration rate.

(d) Deceleration rate: Maintain a constant deceleration rate of 3.0 m/s^2 (9.8 fps²).

(e) Wheel lockup: No lockup of any wheel allowed for longer than 0.1 seconds at speeds greater than 15 km/h (9.3 mph).

(f) Number of runs: 200 stops. (g) Interval between runs: The interval from the start of one service brake application to the start of the next is either the time necessary to reduce the IBT to 100 °C (212 °F) or less, or the distance of 2 km (1.24 miles), whichever occurs first.

(h) Accelerate to 80 km/h (49.7 mph) after each stop and maintain that speed until making the next stop.

(i) After burnishing, adjust the brakes as specified in S6.3.4.

S7.2 Wheel lockup sequence.

S7.2.1 *General information.*(a) The purpose of this test is to

ensure that lockup of both front wheels occurs either simultaneously with, or at a lower deceleration rate than, the lockup of both rear wheels, when tested on road surfaces affording adhesion such that wheel lockup of the first axle occurs at a braking ratio of between 0.15 and 0.80, inclusive.

(b) This test is for vehicles without antilock brake systems.

(c) This wheel lock sequence test is to be used as a screening test to evaluate a vehicle's axle lockup sequence and to determine whether the torque wheel test in S7.4 must be conducted.

(d) For this test, a simultaneous lockup of the front and rear wheels refers to the conditions when the time interval between the first occurrence of lockup of the last (second) wheel on the rear axle and the first occurrence of lockup of the last (second) wheel on the front axle is ≤ 0.1 second for vehicle speeds > 15 km/h (9.3 mph).

(e) A front or rear axle lockup is defined as the point in time when the last (second) wheel on an axle locks up.

(f) Vehicles that lock their front axle simultaneously or at lower deceleration rates than their rear axle need not be tested to the torque wheel procedure.

(g) Vehicles which lock their rear axle at deceleration rates lower than the front