

ENGINE BRAKE RETARDER PROHIBITIONS

By Mark Hood, P.E., Pennoni

Have you received complaints from residents about loud truck braking in your municipality? Are requests to restrict “Jake Brakes” commonplace? How do you respond reasonably to these requests?

R14-9
BRAKE RETARDERS PROHIBITED SIGN

The Brake Retarders Prohibited Sign (R14-9) may be used to restrict the use of engine retarding brakes on trucks. This sign shall only be erected when the Department has authorized the enactment of a municipal ordinance prohibiting the use of brake retarders (as defined in Department regulations).

The word "MUNICIPAL" may be replaced with "CITY", "BOROUGH" or "TOWNSHIP" as appropriate, or the name of the municipality, or the lower portion of the sign can state whatever the actual restriction is. The size of the sign may be increased as necessary to accommodate the legend.

DIMENSIONS - IN									
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L
30" x 36"	2.3	4B	2.1	1.5	3D	5.7	9.8	10.2	11

DIMENSIONS - IN							
SIGN SIZE A x B	M	N	P	Q	MAR- GIN	BOR- DER	BLANK STD.
30" x 36"	6.3	10.4	6	0.4	0.4	0.6	B5-3630

COLOR:
LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
BACKGROUND:
 WHITE (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
 By: *De C Row* Date: 02-29-12
 Chief, Traffic Engineering and Permits Section
 Bureau of Maintenance and Operations

Engine Brake Retarders

Engine brake retarders are compression release brakes that can be installed on some diesel engines to slow a heavy commercial vehicle. These compression brakes were patented in the 1960s and were first manufactured by Jacobs Vehicle Systems. While commonly referred to as “Jake Brakes”, the generic term is engine brake retarder systems. These provide an important safety feature as they reduce brake wear and give the driver another way to slow down. However, these devices are much louder than the trucks themselves. As a result, people have sought to limit their use in populated areas.

State Laws Related to Engine Brake Retarders

Section 4103 of Title 75 (PA Vehicle Code) provides PennDOT with the sole authority to regulate vehicle equipment. The use and/or prohibition of the use of engine brake retarders falls under this authority. Therefore, any municipality that plans to prohibit the use of engine brake retarders must first obtain the permission of the department even on local roads. At the request of the municipality, PennDOT will do a study. If a restriction is approved, a local ordinance must be passed restricting the use of engine brake retarders and then signs must be placed along the specified roadway(s). Remember, this ordinance can only be enacted after PennDOT authorization has been received as per Title 67 (PA Code), Chapter 179, Section 179.10(20).

Regulations Related to Engine Brake Retarders

Section 179.10(20) of Title 67 states “(20) Brake retarder required. A motor vehicle operating along a State highway

and having a Gross Weight above 80,000 pounds shall be equipped with an engine-brake retarder or an exhaust-brake retarder or a hydraulic-brake retarder to supplement the service brakes. The brake retarder shall be in good working order and shall be used by the driver as necessitated by traffic or roadway conditions. A brake retarder is not required on a new motor vehicle while the vehicle is being tested by the vehicle manufacturer within a 15-mile radius of the place of manufacture or while the vehicle is in transit from the vehicle manufacturer to a purchaser or dealer outside this Commonwealth. The use of brake retarders may not be prohibited by a local authority unless prior written approval is obtained from the Department. If the Department denies written approval, a local authority may file an application for reconsideration under 1 Pa. Code §35.241 (relating to application for rehearing or reconsideration).”

Engine Brake Retarder Prohibition Request Procedure

PennDOT has outlined a basic procedure to request an Engine Brake Retarder Prohibition. This procedure is outlined in Section 11.8 of PennDOT's Publication 46. <https://www.dot.state.pa.us/public/PubsForms/Publications/Pub%2046.pdf>

The procedure is as follows:

1. The municipality requests authorization to enact an Engine Brake Retarder Prohibitions, in writing, to the appropriate district executive. The request must indicate if the prohibition request is for specific roadway(s), portion(s) of a municipality or the entire municipality.
2. The PennDOT District Traffic Unit reviews the request in accordance with the criteria established by the department in Section 11.8 of Publication 46. The PennDOT District Traffic Unit then prepares a proposed written response for the district executive's signature, advising the municipality of the department's decision.
3. The municipality must subsequently enact an ordinance; PennDOT will not enact any Engine Brake Retarder Prohibitions.
4. The municipality is also responsible for procuring, erecting, and maintaining the required signing, using official signs in accordance with the requirements of Publication 236. This includes the Brake Retarders Prohibited (R14-9) sign at the beginning and the End Brake Retarder Prohibition (R14-9A) sign at the end of the restricted area.
5. Enforcement of the Engine Brake Retarder Prohibitions shall be the responsibility of the police agency that provides enforcement services for the municipality.

Criteria for Engine Brake Retarder Prohibition

The criteria PennDOT will study for the engine brake retarder are as follows:

1. The roadway is not a limited access facility or a ramp exiting from a highway with a posted speed or 85th percentile speed of 55 mph or greater.
2. The average downhill grade does not exceed 4 percent within any 500-foot section of highway (i.e., the change elevation of the road is never greater than 20 feet in any 500-foot section of a downhill).
3. A reduced speed limit or reduced gear zone does not exist for trucks due to a hazardous grade determination.
4. The posted speed limit or 85th percentile speed is less than 55 mph.
5. There is no history of runaway truck crashes in the past three years.
6. There is no discernible pattern of rear-end crashes in the past three years where a truck was the striking vehicle.



Engine retarders can be restricted for a portion of road, an entire road, a series of roads, or the entire municipality. Photo: PennDOT LTAP

PennDOT will use TE-104 to document their study showing how these criteria have been met. <https://www.dot.state.pa.us/public/PubsForms/Forms/TE-104.pdf>.

Enforcing the Restrictions

Once the restriction confirmation is received from PennDOT, the municipality will need to pass an ordinance. Both the study from PennDOT and the ordinance are required before the restrictions can be enforced.

Considerations

Be aware that not all loud truck noise comes from engine brake retarders. Muffler systems may be bypassed or outright removed and made into straight pipes. Since this is an equipment violation, it is recommended you work with local or Pennsylvania State Police on enforcement for this issue.