

“Speed Bump”

Structures that reduce the speed of vehicles by placing several convex obstacles on the road, each 10 to 20 cm high and approximately 1 m long in the direction of travel, are called “speed bumps,” “deceleration zones,” or “humps.” They are sometimes seen in large parking lots, supermarket parking lots, and on roads in residential areas. In the past, the asphalt itself was raised up like a two-humped camel, but recently it seems that many are made of rubber. It seems that it is quite popular on city roads in Europe, but in Japan there are pros and cons, and it seems that the cons still prevail. However, speed bumps (hereinafter abbreviated as SB) have been pointed out to have several flaws and disadvantages, and are said to be ineffective because they require re-acceleration to catch up after passing a speed bump.

The city road in the residential area that runs north next to my house (A in the diagram on p. of cars are driving at least 10 to 25 km over the 30 km speed limit. Since there are quite a few school children who cross this road, the local traffic crime prevention committee is considering installing an SB near my house by the end of this year. Without explaining or listening to the opinions of the residents who live facing the road, including my own home, who will be affected by noise, etc., and perhaps without conducting any thorough research or consideration, we just casually think that it is a good thing. The conversation seems to be progressing, and I feel very uneasy. Therefore, the following request was approved and submitted to the Traffic Crime Prevention Committee through the neighborhood association.

About five years ago, two rubber SBs were installed as a test case on the city road (B in the diagram below) that runs between the regulating pond at the entrance to the residential area from the main road (Kagayaki Street) and the Shiga Bank premises. . This location was chosen as a suitable location for testing because it is a road leading from the main road to a residential area and is a little far from the residences. This time, since the test period has long passed, it seems that they are planning to fully install the system on city roads that are crossed by school routes inside residential areas. However, the first question is how this test was evaluated. Most likely, there were no serious problems, no accidents, there was a slowing effect, and there were no complaints from residents.

However, the first question is how this test was evaluated. Most likely, there were no serious problems, no accidents, there was a slowing effect, and there were no complaints from residents. Did it really have a deceleration effect? We would like to see data on the deceleration effect, noise, and reduction in traffic volume due to the installation of SBs. Of course, deceleration near SB can be imagined even without data, but the problem is controlling the subsequent speed increase and maintaining speed compliance. Immediately after passing the SB, there is a T-junction, the Kushikushi parking lot of the Wakakusa Clinic Building, and the parking lot of Plus Pharmacy, so it is difficult to speed up immediately after passing the SB, so it is difficult to evaluate. In any case, the test was just a test in name, and the Traffic Crime Prevention Committee did not carry out any thorough investigation or evaluation, and was pushed by the voices of school guards and others to protect the safety of children commuting to school, and decided to "ensure the safety of routes to school" as a rationale. It appears that they are proceeding with the installation of SBs on city roads inside residential areas.

On the other hand, the drawbacks are (1) poor deceleration effect. It is true that there is deceleration near the SB, but there is a problem in that the engine is revved to make up for the delay in deceleration after passing the SB. In order to significantly increase the effect, for example, multiple SBs should be installed every 50 to 100 meters, but there are probably many people who oppose this. (2) Exhaust gas increases and a blowing sound is generated due to the engine blowing. (3) There are noises and vibrations before and after passing the SB (sounds from tires, vehicle body, loading platform, last-minute brake noise, vibrations, engine revving noise, gear switching noise). It is said that the impact noise and loading platform noise are especially loud when approaching at a speed of 30 km or more or when a truck is involved, and can even damage the cargo. In addition, the noise during quiet bedtime in the middle of the night or early morning is more bothersome, and the sound of passing cars when they are running at a uniform speed is not that bothersome, but the irregular sounds before and after the SB are quite noticeable. I'm sure you'll be interested. Furthermore, residential streets are U-shaped, surrounded on both sides by houses, so noise will be trapped and reverberated. In particular, there is a commercial facility in front of my house with a large concrete floor and walls, so the sound of the SB passing by should be quite reverberating. As for vibrations, the roads are relatively solid, so there shouldn't be any problems. (4) Even if you take a short detour to avoid the SB, you will have to take another road (in my town, from the

Plus Pharmacy to the tennis court area D in the diagram), which will increase the risk of accidents.

⑤ There are health problems. It has been pointed out that pregnant women (drivers and passengers) are at risk of miscarriage, and there is also a risk of spine damage from the impact of the SB. There may also be harmful effects from exhaust gas. ⑥ Vehicles without shock absorbers, such as bicycles and mopeds, are subject to large shocks and are at great risk of falling (especially on rainy days). In addition, motorcycles often avoid bumps and bumps, and in this case, the rattling noise of the gutter cover can be a problem. There are also cases of elderly pedestrians tripping over SBs and falling. ⑦ In cars with a low vehicle height, the bottom of the car may be scraped by the impact or vertical movement of the SB. It is necessary to clarify whether compensation in cases ⑥ and ⑦ will be borne by the neighborhood association or the city. ⑧ It seems that some cars equipped with automatic driving control devices have difficulty detecting SB, which is likely to become a problem in the future. According to recent information, rubber SBs seem to be on the decline for unknown reasons. By the way, what other road structures other than SB can be expected to have a deceleration effect? I would like the Traffic Crime Prevention Committee to investigate and evaluate these matters as well. ① Road traffic restrictions for non-resident vehicles during commuting, schooling, and leaving work hours. This would require the deployment of full-time volunteers and permission from the Public Safety Commission, which seems to be a bit of a hurdle. ② Hand out flyers and call out to passing drivers directly. This would be extremely ineffective. ③ Ask companies located in nearby industrial parks to notify their employees not to use residential roads to commute by car. This will probably only be a temporary relief for a few months, so it will need to be done several times a year. ④ Installation of Orbis (automatic speed cameras) and electronic speed display boards (DSDS). These seem expensive and difficult to maintain. If there were occasional ``show arrests'', the effect on speeding offenders would increase. ⑤ Installation of Kunekune driveway (community driveway). This method involves drawing lines on the roadway in a meandering manner to induce cars to travel in a meandering manner, thereby slowing them down, and according to online research, it can be expected to be quite effective. ⑥ The speed save construction method (creating sinusoidal irregularities with a wavelength of approximately 5 cm on the road in the direction of travel) is a method that creates unpleasant noises and vibrations for cars traveling at speeds of 30 km/h or more. It is said that it is quite effective when installed. It seems to be the latest trend.

⑦In a previous field survey conducted by the local community association (in which the author also participated), it was found that the majority of residents in the area did not obey the 30 km speed limit, so it is important to raise awareness within the area. ⑧Finally, there is something called the visual hump. It draws geometric patterns on roads such as local roads, and uses an effect that can be described as visual magic to encourage cars to slow down. It may have some effect the first time, but after the second time, you will get used to it and it will not be as effective. In the end, it turns out that among these methods, SB requires no effort after installation, but it is the method that causes the most inconvenience to nearby residents.

If the Traffic Crime Prevention Committee briefing session is held as per the above request, the first thing I would like to ask is:

- 1) How I came to go for the installation.
- 2) Did you evaluate the SB installed in the test using scientific data?
- 3) Have you investigated the general loss of interest, defects, and adverse effects of SB?
- 4) How much research and interviews were conducted at existing locations in other areas?
- 5) Is there any other suitable method other than SB?
- 6) If it is found that damage caused by vibration or noise is significant after installation, is it possible to remove it immediately?

It is.

The planned SB installation location (C) is a city road that runs to the east of a commercial facility owned by a real estate company in front of my house (containing a remodeling shop, a cram school, a piano school, a bakery, a beauty salon, etc.). Facing the city road, there is a row of skewered parking spaces for monthly contract customers and users of commercial facilities. As a result, there is a lot of traffic and people coming and going, and it can be noisy until late at night. It would be really annoying if SB was created on top of that.

We'll see what happens. It may be unscrupulous, but I am somewhat looking forward to the discussion with the Traffic Crime Prevention Committee.