

APPENDIX 13  
Information from Japan



31,10,02

- Title: Effectiveness of Road Markings in Curve Section
- Author: A.Kozaki, T.Fukui ; Gifu Regional Construction Office, Ministry of Construction
- Publication: 19th Japan Road Congress, 10.1991
- Type of speed reduction marking : Arrow marking type  
Three patterns were settled in curves.
  - Pattern 1 : Delineators
  - Pattern 2 : Delineators and arrow markings
  - Pattern 3 : Delineators, arrow markings and chevron signs
- Result:  
Speed reduction
  - Pattern 1 : Speeds of vehicles at curve starting point are high and vehicles slow down between curve starting point and middle of curve section.
  - Pattern 2,3 : Vehicles slow down before entrance of the curve.Sections where effectiveness of arrow markings does not appear.
  - Slope sections where cars go up and slope is more than 2%.
  - Curve sections where radius is larger than 150m
  
- Title: Road Safety Countermeasures Using Road Markings
- Author: N.Takada ; Shiga Regional Construction Office, MOC
- Publication: 22th Japan Road Congress, 10.1997
- Type of speed reduction marking : Comb marking type  
Speed reduction markings were settled in curves and slopes
- Results:  
Average speed of vehicles were reduced between 1.6km/h and 5.7km/h.  
Scattering of vehicle speeds was decreased  
Speed reduction was clear at the slope (going down direction) at night.  
The number of lane-change times were decreased.

- Title: Effectiveness of Speed Reduction Markings for Traffic Accident
- Author: U.Kurosaki et al. ; Japan Highway Public Corporation
- Publication: 7th Annual Meeting of Japan Society of Traffic Engineers, 11,1997
- Type of speed reduction marking : Comb marking type

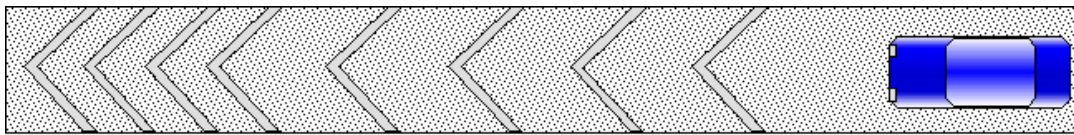
Speed reduction markings were settled at traffic accident occurring section of National Expressway

- Results:

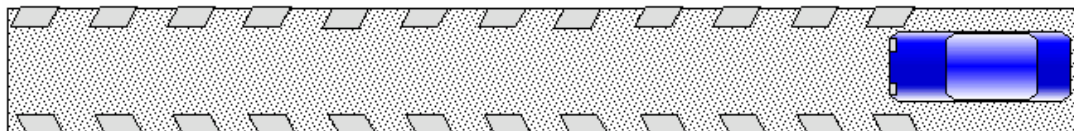
Speed reduction effectiveness is not clear.

The number of lane-change times were decreased.

Drivers felt that the lane is narrow (29%), lane change is not easy (22%) and running speed is high (10%). (Answering rate of questioners).



arrow marking



comb marking

Chevron Sign Marking (anti-skid type)





Typical anti-skid pavement install section.

This is not a good case.

Pavements have to be installed before the curve section.