



## MAZDA ACTIVE ADAPTIVE SHIFT (AAS)

### NO HIGHER RANGE UPSHIFT AT HEAVY THROTTLE

**COMPLAINT:** Some Mazda 6 models from 2005 to present equipped with the AW6A-EL (TF81SC) may have a complaint of no up-shift to fourth, fifth or sixth gears under heavy throttle conditions. Under normal throttle conditions the transmission shifts through all gears.

**CAUSE:** The way the car may be driven is the cause of this complaint. If the driver accelerates rapidly, or accelerates and decelerates rapidly by operating the throttle and brake pedal for a certain time period with the shift lever in the “D” position, Active Adaptive Shift control will be initiated by the TCM. When this occurs, ASS Mode will maintain the transmission in the optimum gear which creates the no shift condition. This means that the TCM will keep the transmission from up-shifting to prevent shift busyness and to ensure that upon re-acceleration there will not be engine lugging and that a smooth transition into the next gear will take place.

**CORRECTION:** This information can be read in the owners manual of the vehicle.

**SUMMARY:** There are a number of strategies associated with ASS operations such as:

***Sport Mode:***

When SPORT Mode is selected, the AAS selects a lower gear compared to when normal mode is selected, this maintains that gear for a longer time period.

***Throttle is closed suddenly and returned to heavy acceleration:***

When the throttle pedal is fully closed suddenly and returned to a certain speed, up-shifts are inhibited for a specified time by the TCM to improve speed control and re-acceleration performance.

***Brake pedal is suddenly strongly depressed:***

When decelerating at a certain speed, a lower gear is selected so that re-acceleration is performed smoothly.

***When cornering:***

While cornering in a turn with a radius less than a specified value, up-shifts are suppressed to improve vehicle speed performance (figure 1).

***During high degree of vehicle ascent/descent:***

During a certain level of downhill or uphill conditions, gears are selected according to driving conditions.

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**SUMMARY:** While ascending a slope of a certain grade or more, Slope Mode control prevents unnecessary up-shift by maintaining the appropriate gear.

While descending a slope of a certain grade or more and depressing the brake pedal, the gears are appropriately shifted down according to the degree of slope for effective engine braking.

### *Higher speed merging:*

Under a condition of temporarily decelerating while merging onto a high speed expressway, up-shift is suppressed directly afterwards to improve re-acceleration performance (figure 2).

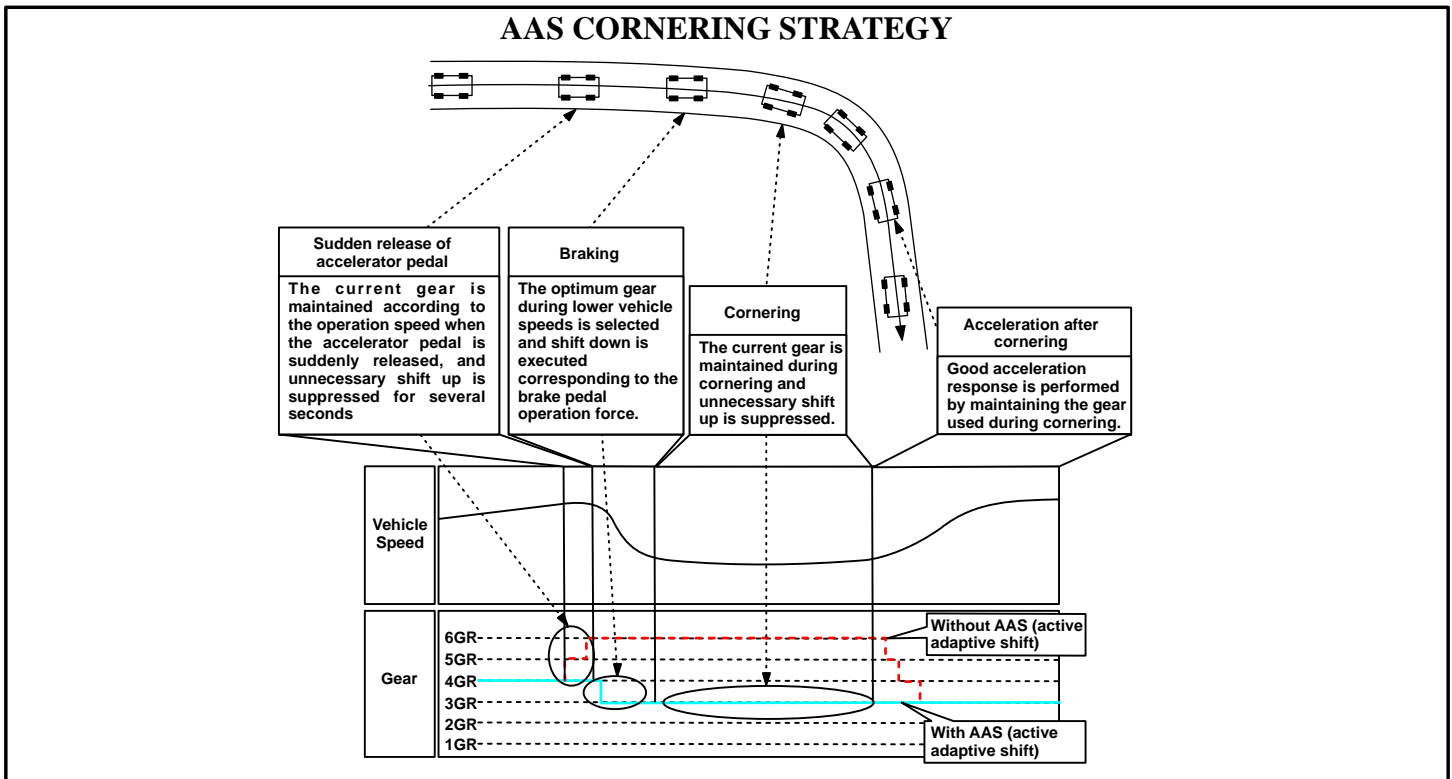


Figure 1

## MAZDA ACTIVE ADAPTIVE SHIFT (AAS) NO HIGHER RANGE UPSHIFT AT HEAVY THROTTLE

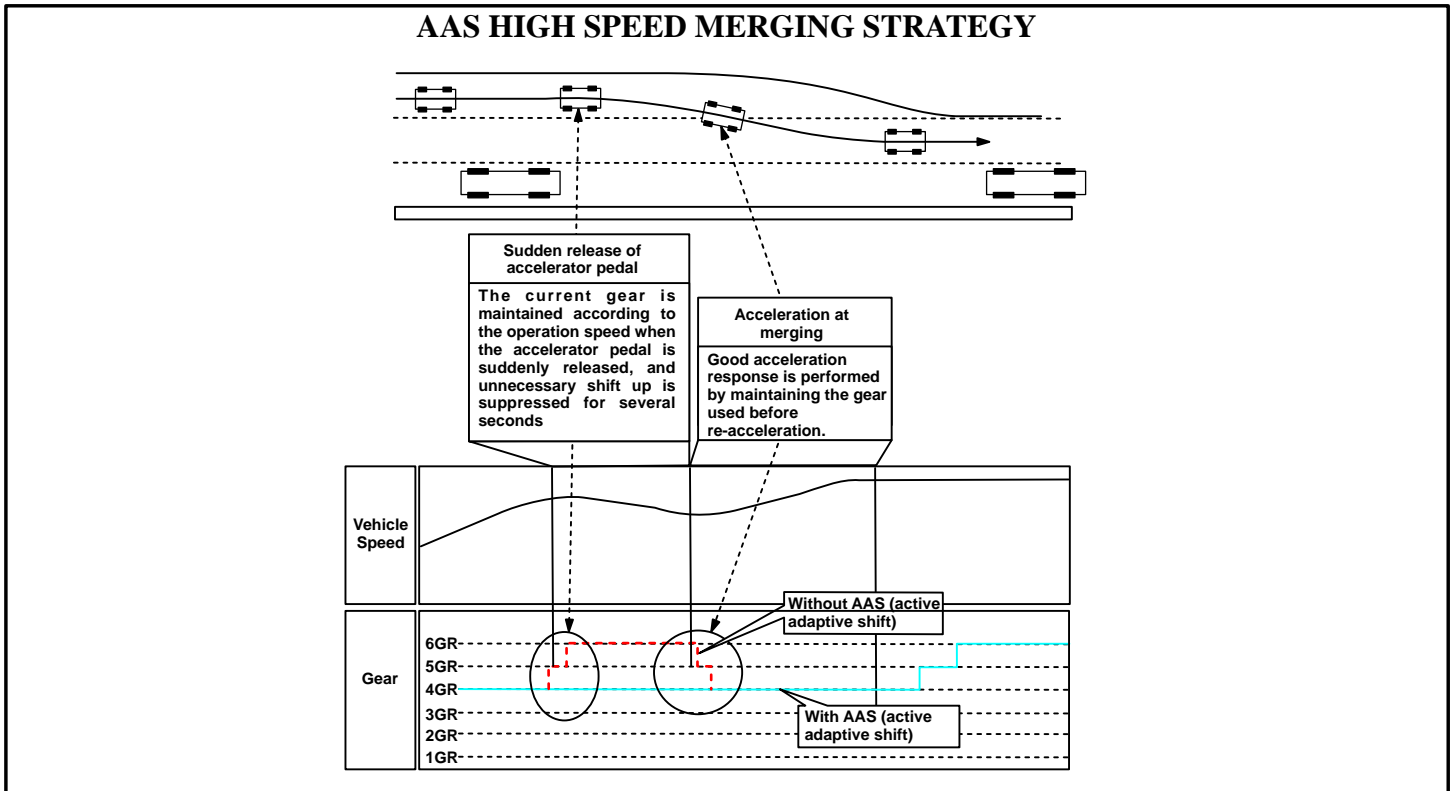


Figure 2