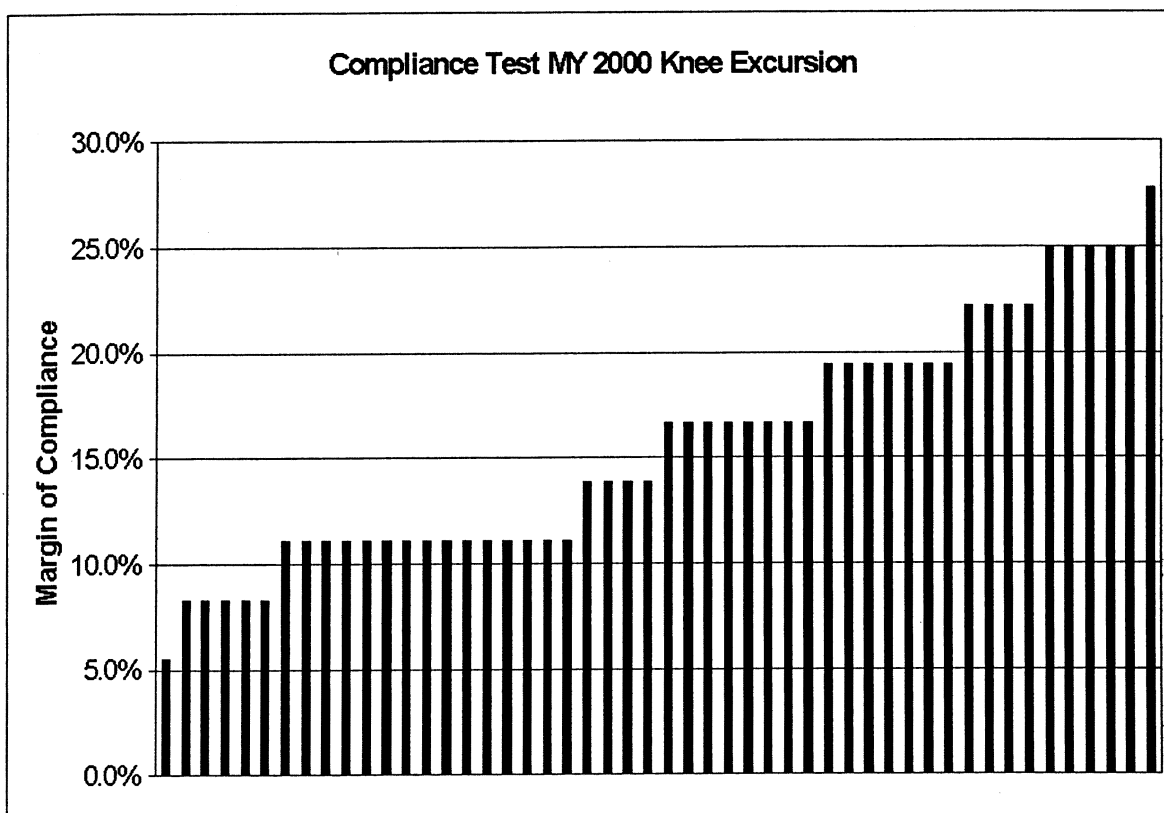


Figure 5: Knee Excursion**BILLING CODE 4910-59-C**

During the development of the child restraint ratings program, the agency also conducted dynamic testing of a number of child restraints both at 30 and 35 mph to examine what differences, if any, resulted from the increase in the velocity at which the test was conducted. To attain the higher speed, a sled pulse with a similar shape and duration length as that of the FMVSS No. 213 pulse was used, except that the change-of-velocity was elevated from 30 mph (48km/h) to 35 mph (56km/h). All of the child restraints tested produced dummy injury measurements well below the FMVSS No. 208 criteria of 570 HIC and 55g chest acceleration (Hybrid III 3-year-old dummies were used in the tests). Although the injury assessment values were slightly greater in the 35 MPH (56 km/h) sled tests than in 30 mph (48 km/h) sled tests, eight of the nine child seats tested rated within the 5 star range, and one fell just marginally below in the 4 star range. This data, in conjunction with the information provided above regarding the compliance margin achieved by existing child restraints, demonstrates that a nominal increase in the test velocity resulting from the crash pulse corridor established as part of this

final rule will not necessitate a redesign of existing child restraint designs to meet the injury criteria limits established in the standard.

The agency also does not believe that unusual or unacceptable variability will be introduced into the test results simply because more test labs will be involved in conducting child restraint tests. Any lab-to-lab variability resulting from a properly conducted test will be insignificant, in part because each laboratory must ensure that the pulse it uses in the FMVSS No. 213 sled test falls within the corridor specified in the standard. In addition, it is the responsibility of manufacturers to design and manufacture child restraints to meet the requirements of the standard, taking into account whatever variability occurs from seat-to-seat manufacturing differences and from lab-to-lab testing differences. It should also be noted that child restraint manufacturers are responsible for ensuring that their restraints meet the requirements of the standard when tested by NHTSA in its compliance test. Manufacturers testing their products to the most demanding requirements under the most demanding test conditions increase the likelihood that their products will meet the

requirements when tested by NHTSA under the same or less severe conditions. In the same manner, prudent testing by the manufacturer accounts for routine lab-to-lab variability that may occur when testing child restraints. Manufacturers must design and produce products that will pass the compliance test regardless of the laboratory conducting the test.

2. Increase Pulse Severity

ARCCA opposed the NPRM based on concerns that the proposed changes to the crash pulse would "lower, rather than raise, the bar for child restraints." The commenter believed that the Standard No. 213 pulse is actually less severe than all of the 30 mph barrier test pulses from actual vehicles, and that the standard's pulse severity should be increased. The commenter suggested that the standard specify that the dynamic test will be conducted at velocities of not less than 30 mph. "This will ensure that manufacturers do not take advantage of the wider corridor to conduct testing that is less severe than what is currently required by FMVSS 213." ARCCA also stated that the standard "should contain a minimum acceptable peak acceleration level that is more than the 19 G's or [sic] the