

Finally, the Alliance stated that a 125 ms fixed time duration is too long to exclude secondary impacts. To the extent we believe the majority of secondary impacts are not representative of what happens in real world crashes, the test duration should be sufficiently short to limit significantly the potential for secondary impacts while being of sufficient duration to capture the full air bag deployment. We believe a 100 ms time duration will capture the full air bag deployment and induce manufacturers to reduce the dummy rebound velocities into the seat back and cap the rebound velocity to some degree. There is no evidence that suggests that a 125 ms data collection would reduce the likelihood of injuries more than a 100 ms collection.

We agree with manufacturers that high injury measurements due to secondary impacts can be an artifact of the low risk deployment test. The 100 ms time frame adopted today will minimize the likelihood that a vehicle occupant will be thrown into the seat back or other vehicle component prior to 100 ms, as vehicle manufacturers will need to ensure that their air bags are sufficiently benign to avoid such contacts during that time frame. This is because any failure of the injury criteria, regardless of whether it is the result of direct air bag interaction or a secondary interaction with another vehicle component, will be considered a noncompliance. It is for this reason that we are denying DaimlerChrysler's petition for an explicit exclusion of air bag stages that are not required to provide occupant protection and for performing the test with the seat back fully reclined or removed. However, as noted above, we will continue to monitor the test results, and initiate rulemaking if we determine that injury measures beyond 100 ms are due to overly aggressive air bags.

Vehicle manufacturers have not demonstrated that secondary impacts are a compliance problem on the driver side of the vehicle or with a rear-facing child restraint on the passenger side. Additionally, unlike the 3-year-old and 6-year-old dynamic tests relied on by the Alliance to support its position that secondary impacts are a test anomaly, there will not be a significant amount of forward momentum relative to the vehicle in a dynamic test with an infant dummy in a rear-facing child restraint. The infant dummy is restrained in a rear-facing child restraint that is coupled to the vehicle chassis via the vehicle seat belt system. Thus, the static test condition is more representative of the real world crash event. Accordingly,

we are retaining the specification that data be collected for compliance purposes in S19.3 (12-month-old) and S25.3 (driver-side) for 125 ms after initiation of the final stage of deployment for crashes up to 64 km/h (40 mph) and 26 km/h (16 mph), respectively.

We are rejecting the other suggestions offered by petitioners because we believe they are insufficiently objective. Honda's suggestion that data collection for compliance purposes end 10 ms after head interaction with the air bag ceases suffers from the same lack of objectivity as the Alliance petition that we denied in the December 2001 final rule. It is simply not possible to determine with any assurance exactly when that interaction ceases. The suggestion of a film analysis is likewise impractical. Autoliv's suggestion that NHTSA make a case-by-case determination as to when the secondary impact is air bag-related would likely result in significant debate and pose legitimate concerns about objectivity, repeatability, and enforceability.

We have changed S4.11(b) of the regulatory text to specify injury criteria will be considered for "100 milliseconds after the initial deployment of the air bag" rather than "100 milliseconds after the air bag is signaled to deploy." The reason for this change is to be more precise about when the 100 ms time-frame begins. Manufacturers may, for very valid reasons, build time delay circuitry into their air bag systems. If the test duration began at the signaling of air bag deployment, the data acquisition period would be shortened by the period of the delay. Changing the regulatory text to "initial deployment of the air bag" is intended to capture that moment in time when the chemical or other process begins to inflate the air bag. If there is no designed delay built into the electrical circuitry, then the signal for air bag deployment and the initiation of deployment will effectively be coincident.

V. Test Procedure for the Driver Air Bag Systems

As part of the December 2001 final rule, the agency made several changes to the regulatory text governing dummy positioning procedures. In many instances, these changes were intended to be substantive in nature. For example, we changed the location for positioning the dummy chin on the steering wheel in the driver chin-on-rim test (position 2) because we believed the change would lead to a more repeatable test procedure and would minimize the risk that the dummy chin would become

lodged over the steering wheel, potentially distorting the dummy kinematics.

However, many of the changes were made purely to improve the logic of how the test was to be performed and to create greater consistency among the various tests. For example, changes were made in the sequencing of the test procedure so that one could follow the procedure step-by-step. Likewise, terminology was made more uniform among the various tests. The agency did not intend these changes to have a substantive effect. Accordingly, the preamble to the December 2001 final rule did not discuss the changes.

Mitsubishi, Volkswagen, and Autoliv stated in their petitions that one of the changes to the driver chin-on-module test (position 1) (S26.2.6) made a substantive change to the test procedure that was not justified, or even discussed in the preamble. Follow-up letters by the Alliance, Ford and GM reiterated this concern. The position aligns the chin with the center of the area where the air bag deploys. The original position aligned the chin with the top of the air bag module. Petitioners have argued that the new specification lowers the dummy head position and could make the test more stringent and unrealistic. Additionally, Autoliv and Ford asked if the seat height could be adjusted to achieve the desired dummy height.

Petitioners are correct that the change was not discussed. It was intended to create consistency between this test and other tests in which a portion of the dummy was to be positioned in alignment with the place in the vehicle where the air bag initially deploys. It was not intended to have a substantive effect. We do not know at this time whether lowering the dummy head a couple of inches will have a significant effect on recorded injury measurements. However, we recognize it could. Since no substantive change was intended, we have reverted back to the positioning language that was in the May 2000 final rule. This language places the chin on the top of the air bag module. It also states that the dummy height can be adjusted using either the seat height adjustments or spacer blocks. All other changes to the chin-on-module positioning procedure adopted by the December 2001 final rule are retained, at least at this time. However, other changes may be made in our second response to the petitions for reconsideration.