What makes a crash test good?

A number of readers have asked what I would do differently from Center for Pet Safety's crash test. That is a fair question to ask given my critical evaluation of their methods.

First and foremost I would begin with an evaluation of the environment in which a travel crate will be used. I really doubt there are statistics but my gut says that most crates will be used in an SUV/cross over vehicle. Pickup trucks would be next. Regular two and four door sedans probably see the least use as they tend to have very limited room even with a seat down.

Right away three problems are apparent. The strength and placement of tie down anchors is highly variable as is the area in which to place the crate.

The next issue to address is how will pet parents use the crate. Where will they locate it in the vehicle? Will they tie it down? Will they tie it down properly? Does that even matter?

To that I would say, most people will place the crate behind a seat back if there is room to do so, especially if they are on a long trip and space is at a premium. Anecdotal evidence from observing many thousands of cars on the highways suggests very few people tie down anything in the rear of their cars, though truck owners tend to. Even those that do tie cargo down may not be putting the correct tension on the straps. And of course, the anchors remain the primary point of failure.

Given those important points and also making some consideration for the cost of testing, I can suggest the following as a better way to test:

1. Frontal test with crates positioned one foot behind a seatback and tied down with the minimum tension necessary to keep crate in place during acceleration of sled. That tension should be the same for all tested crates. The seatback should have an instrumented human test dummy on the other side of the seatback and the seatback should be from a production vehicle.

This to me is a worst case scenario for a frontal crash. The tie downs will *always* break and the crate will launch into the seat back. From this, testers can evaluate the structural integrity of the crate, if the door(s) remain functional, whether the test dog (or weight) is contained and finally, what force is transferred to the human occupant.

2 A rear crash test, similar setup to #1 above but with the crate instead positioned directly behind the rear most seatback. Tie downs removed unless necessary to keep crate in place on sled prior to "crash."

This is a very real world test. Many crashes are rear end events and most owners are likely to position the crate this way. The crate will again be evaluated for structural integrity, its effect on the test "dog" and what forces are transferred to the human test dummy through the seat.

3. A front crash test with identical set up as in #2 above.

4. A drop test to simulate a roll-over event.

What is the difference between the above scenarios and that used by CPS? I have removed the anchors from the equation as they are not to be relied upon to keep a crate in place during a car crash and normal driving speeds. Further, because they are removed, no generalization needs to be made to define a nebulous "typical" load rating for the test anchors.

The effect of doing this is to actually test the structural integrity of the entire crate and not just a single point of failure (where the tie down strap attaches to the crate) as was done by CPS at the MGA Research test facility.

And while I think it is more likely that a crate is placed directly behind, perhaps touching, a rear seatback, scenario #1 is the most stressful frontal crash situation for the crate and seatback.

The rear test is also very stressful and I strongly believe that both a front a rear test must be performed before any statement can be made about the expected safety of a crate. It is not hard to imagine scenarios where the frontal test may be passed but the rear failed. Tests of real cars in rear-end crashes show significant intrusion into the lead vehicle. Will the crate protect the dog? Surviving a front test alone is not good enough.

If in the limited funding available it was possible, I would swap the more expensive test scenario #2 with #1.

Also note the use of a human test dummy on the other side of the seatback. If you recall, one of the primary reasons CPS used to justify their methodology was potential injury to an occupant from the crate impacting the seatback. Yet they did not actually measure the force on a test dummy.

As we noted in our white paper, it is quite likely that different crates will transfer different amounts of force through the seatback and that information is important for testers to evaluate and present to pet parents in a meaningful way. Positioning some crates behind an ***occupied*** seatback may be acceptable. For others, it may not. It is also important to have a baseline for the force transferred to rear seat occupants in the various crash scenarios *without* a crate present.

Finally, I think a drop test is a luxury that should be done last. Testing dollars only go so far and the front and rear tests are more important. If funds do permit, results from a drop test could differentiate two crates that perform equally in the other tests.

So for now, I think that wraps up the travel crate discussion. I'll certainly keep an eye on what CPS is doing and hope to see some significant changes in their testing approach. I also hope to see more companies (like Good Ideas?) perform crash testing on their crates and make those results public