

# STATUS REPORT

INSURANCE INSTITUTE  
FOR HIGHWAY SAFETY

Vol. 46, No. 9, Oct. 13, 2011



## TAKE YOUR PICK

A good fit is easier than ever to find when shopping for a booster seat. This year a record 31 seats have been designated *BEST BETS* by the Institute. They include an inflatable booster, a NASCAR-themed booster, boosters with cup holders and pivoting armrests, (continues on p. 3)



## FOR BOOSTERS, IT'S ALL ABOUT FIT

Boosters elevate children and position safety belts so the belts will fit them better. The lap belt should lie flat and on top of a child's upper thighs, not higher up on the abdomen.

The shoulder belt should fit across the middle of a child's shoulder. If it falls off the shoulder or rests on the neck, a child might move the belt behind their back or under an arm.



## BLOW-UP BOOSTER EARNS TOP RATING

The BubbleBum, the first inflatable seat tested by the Institute and a *BEST BET*, solves a dilemma familiar to anyone who has ever traveled with a booster-age child or has had to accommodate an extra young passenger at the last minute.

Grainne Kelly, a mother of two from Northern Ireland, created the seat in frustration. After discovering that car rental companies couldn't be relied on to provide booster seats when requested, she began lugging heavy, bulky boosters every time the family flew to England to visit her mother-in-law. Kelly ran a travel agency at the time, and when she checked with her clients, she found they were putting up with the same inconvenience.

She quickly educated herself about child passenger safety, European Union child seat

standards, and crash testing, and found a factory in China to produce her seat. Within nine months, the BubbleBum booster was for sale in the United Kingdom.

Kelly then moved her family to the United States for nearly a year so she could study the American market. After gaining approval under U.S. regulations, the BubbleBum went on sale here in June.

"I have no engineering background," says Kelly, now back in the U.K. "I am a mommy. Mommies get things done."

The BubbleBum seat has no arm rests, and guides on its sides help to keep the lap belt positioned correctly. That's a key difference from most boosters, so parents and caregivers must be sure to use the belt guides for proper fit.

Kelly says the lack of armrests helps keep the seat small enough

to easily fit three in a row in an average-size vehicle—a difficult task with most boosters.

Although the company says the BubbleBum is unlikely to deflate, EU regulations require that the seat be certified as meeting booster standards in its deflated state in case it gets punctured in a crash. Through the use of memory foam, the seat holds much of its shape even after the air is let out. However, the BubbleBum doesn't meet the Institute's *BEST BET* criteria without air in it and is designated "check fit" when it is deflated.



(continued from p. 1) and plain vanilla boosters. Prices range from under \$15 to several hundred dollars.

All of them, however, have one thing in common: They correctly position a vehicle safety belt on a typical 4 to 8 year-old in almost any car, minivan, or SUV. No matter what extras a seat may offer, the ability to provide proper fit is the essential feature that a booster must have.

In addition to the *BEST BETS*, another 5 seats are *GOOD BETS*, meaning they provide acceptable belt fit in most vehicles. Six boosters are not recommended because they don't provide proper belt fit, and consumers are advised to avoid them.

In all, the Institute evaluated 62 booster models. Twenty-one of them show up twice in the lists. These are dual-use seats, which can work as highback or backless boosters. In the ratings, each dual-use model is considered to be 2 separate boosters for a total of 83 seats evaluated, 11 more than last year.

The biggest group of boosters falls into a middle category, designated "check fit." These 41 seats may provide good fit for some children in some vehicles, but not as many as *GOOD BETS* or *BEST BETS*. Parents are advised to make sure the lap belt lies flat across a child's upper thighs and the shoulder belt crosses snugly over the middle of the shoulder. If not, a different seat is needed.

The focus of the Institute's ratings is belt fit, not crash performance, and no crash tests are conducted as part of the evaluation. To assess belt fit, engineers use a test dummy representing an average-size 6 year-old. They measure how lap and shoulder belts fit the dummy in each booster under 4 conditions representing the range of belt configurations in real-world vehicles.

**Improvements and innovations:** Boosters have improved a lot in recent years. In 2008, the first year the Institute published its evaluations, there were 10 *BEST BETS*. That fell to 9 in 2009 but soared to 21 last year after manufacturers began using Institute test protocols as they de-

signed and updated seats (see *Status Report*, Oct. 1, 2008, Dec. 22, 2009, and Sept. 8, 2010; on the web at [ihs.org](http://ihs.org)).

"Just 4 years into our ratings program, parents have a wide variety of top-rated seats to choose from," says Anne McCartt, the Institute's senior vice president for research. "Still, boosters that don't consistently provide good belt fit outnumber the ones that do, so consumers need to keep paying attention to this issue."

One thing consumers need to be aware of is that most dual-use boosters have different ratings for each mode. For example, 14 dual-use boosters are *BEST BETS* or *GOOD BETS* in highback mode but are designated check fit in backless mode. For one seat, the Evenflo Big Kid Sport, the opposite is true: It's a *BEST BET* in backless mode and a check fit in highback mode.

The Harmony Dreamtime remains the only dual-use booster that's a *BEST BET* in both modes, while the Combi Kobuk Air Thru is a *GOOD BET* in both modes.

A notable newcomer to the *BEST BET* list is the inflatable BubbleBum, marketed for vacations and car pools. It inflates by blowing into a valve at the seat's back (see story opposite page).

Several of the highbacks on the *BEST BET* list claim to provide enhanced protection in a side crash through the use of deeper side walls, special padding, or other technology. Safety 1st, for example, touts its "Air Protect" system on the Boost Air Protect and S1 Rumi Air seats. The system's cushions release air upon impact to minimize forces on a child's head.

Such enhancements, however, don't affect the Institute's ratings, which are based solely on belt fit. It's not known to what extent side-protection systems on boosters are effective in real-world crashes.

Among booster manufacturers, Harmony Juvenile Products continues to be a standout. All 5 of the seats the Canadian company currently makes, counting the Dreamtime in both modes, are *BEST BETS*. The company is discontinuing the dual-use Baby Armor, which was a *BEST BET* in highback mode but not recommended in backless mode.

**Small change, big difference:** Diono, which recently changed its name from Sunshine Kids, bumped an existing seat, (continues on p. 6)

## HOW BOOSTER SEATS RATE

### **BEST BETS**



Britax Frontier 85  
 Britax Frontier 85 SICT  
 Britax Parkway SGL (highback mode)  
 BubbleBum  
 Chicco KeyFit Strada (highback mode)  
 Clek Oobr (highback mode)  
 Cosco Pronto (highback mode)  
 Cybex Solution X-Fix  
 Diono/Sunshine Kids Monterey (highback mode)  
 Eddie Bauer Auto Booster (highback mode)  
 Evenflo Big Kid Amp  
 Evenflo Big Kid Sport (backless mode)  
 Evenflo Maestro  
 Evenflo Symphony 65 e3  
 Ferrari Dreamway SP (highback mode)  
 Graco Argos 70 (highback mode)  
 Graco TurboBooster – Baldwin (highback mode)  
 Graco TurboBooster Elite (highback mode)  
 Harmony Cruz Youth Booster/Harmony Carpooler  
 Harmony Dreamtime (backless mode)  
 Harmony Dreamtime (highback mode)  
 Harmony Olympian/Secure Comfort Deluxe  
 Harmony Youth Booster Seat  
 Kids Embrace Dale Earnhardt Jr.  
 Maxi-Cosi Rodi XR (highback mode)  
 Recaro ProBOOSTER  
 Recaro ProSPORT  
 Recaro Vivo  
 Safety 1st Boost Air Protect (highback mode)  
 Safety 1st S1 Rumi Air  
 The First Years B570 Pathway

### **GOOD BETS**



Britax Parkway SG (highback mode)  
 Combi Kobuk Air Thru (backless mode)  
 Combi Kobuk Air Thru (highback mode)  
 Evenflo Symphony 65  
 Maxi-Cosi Rodi (highback mode)

### **NOT RECOMMENDED**

Evenflo Chase  
 Evenflo Express  
 Evenflo Generations 65  
 Evenflo Sightseer  
 Safety 1st All-in-One  
 Safety 1st Alpha Omega Elite

## **KIDS IN CRASHES FARE BETTER IF STATES HAVE TOUGH RESTRAINT LAWS**

Expanding child restraint laws to cover children through ages 7 or 8 reduces crash injuries among booster-age kids, increases the use of age-appropriate restraints, and lifts the number of children seated in back, where it's safest for them to ride. These are the main findings of a new Institute analysis of the effectiveness of booster seat laws.

Using a booster is important for kids who have outgrown internal-harness child restraints and aren't big enough for safety belts. Children ages 4-8 in boosters are 45 percent less likely to sustain injuries in crashes than kids restrained by belts alone (see *Status Report*, Aug. 18, 2011, and Dec. 22, 2009; on the web at [iihs.org](http://iihs.org)).

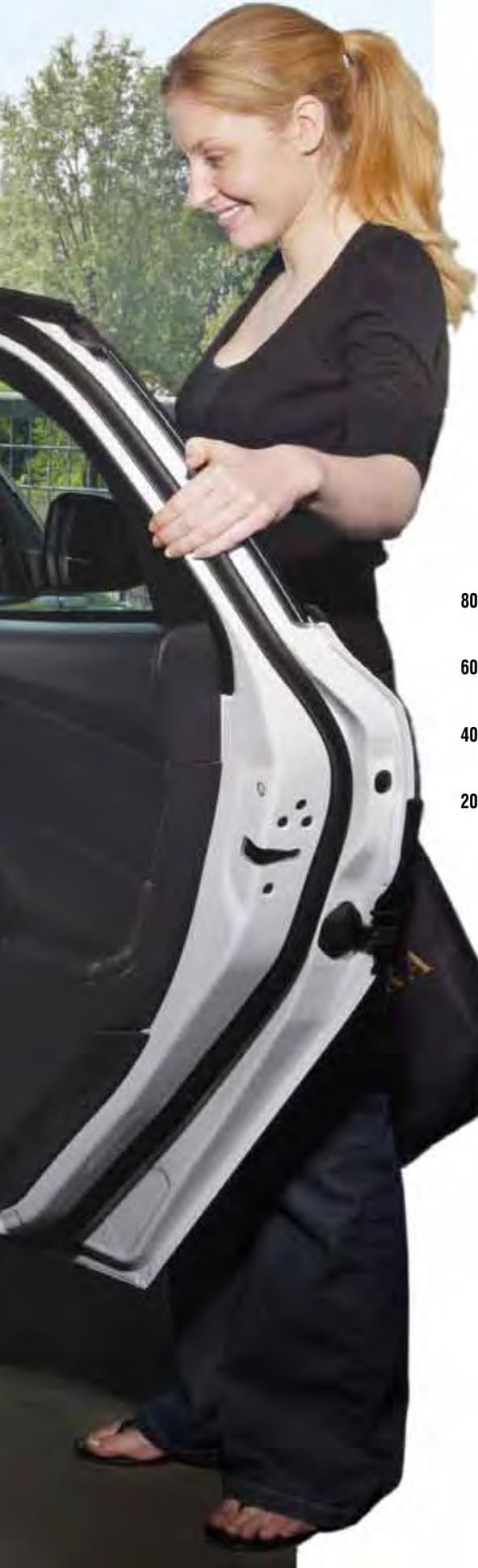
The problem is that many children, especially older ones, graduate too soon to safety belts even though they would benefit from a booster. That's partly because many states don't require boosters for older grade schoolers. In 29 states and Washington, D.C., the laws apply to children 7 and younger, with exceptions for size (go to [iihs.org/laws](http://iihs.org/laws)). Wyoming and Tennessee cover kids 8 and younger.

"With this study we wanted to see if extending booster requirements to older kids would make a difference in terms of restraint use and rates of injuries in crashes," explains Anne McCartt, the Institute's senior vice president for research. "What we found was that 5 states with stricter laws are seeing measurable benefits."

Researchers analyzed state crash data to compare population-based injury rates, restraint use, and seating position among 4-8 year-olds before and after 5 states expanded laws to require child restraints or boosters at least until age 7. Researchers focused on kids affected by the changes, so if 4 year-olds were already covered, for example, they were excluded. Missouri, North Carolina, Pennsylvania, and Wisconsin expanded laws to require child restraints or boosters through age 7, and Wyoming extended coverage through age 8. Researchers adjusted effectiveness estimates using a comparison group of 9-12 year-olds who weren't required to use boosters.

Previous studies have found that booster seat laws increase booster use and reduce injury risk among children. These studies have primarily included states with laws that cover younger children, usually 5-6 year-olds.

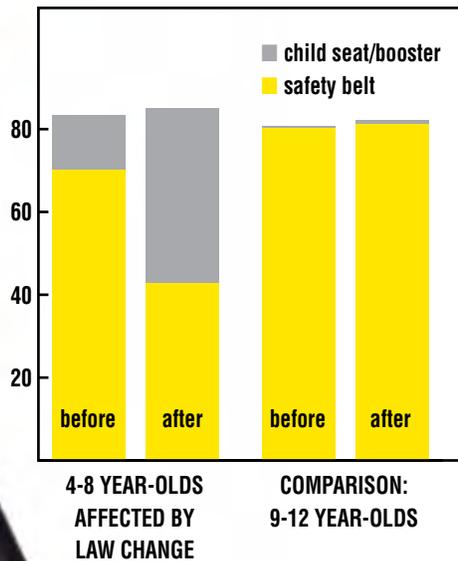




“What’s new about the Institute’s analysis is that it is the first study to look at law changes affecting older booster-age kids, using data for all crashes involving injuries,” McCartt says.

Expanded child restraint laws were associated with a 5 percent reduction in the rate of children with injuries of any severity in crashes and a 17 percent reduction in the rate of kids with fatal and incapacitating in-

**PERCENT RESTRAINT USE AMONG INJURED CHILDREN 2 YEARS BEFORE AND 2 YEARS AFTER 5 STATES (MO, NC, PA, WI, WY) EXPANDED CHILD RESTRAINT LAWS**



juries. Plus, children covered by the laws were nearly 3 times more likely to be in age-appropriate restraints (boosters or child restraints) after the states amended their laws.

Another positive benefit is that parents are more likely to put children in the back seat, even if the laws don’t prohibit booster-age kids from sitting in front. Research shows that children younger than 13 involved in crashes are at greater risk of injury in the front.

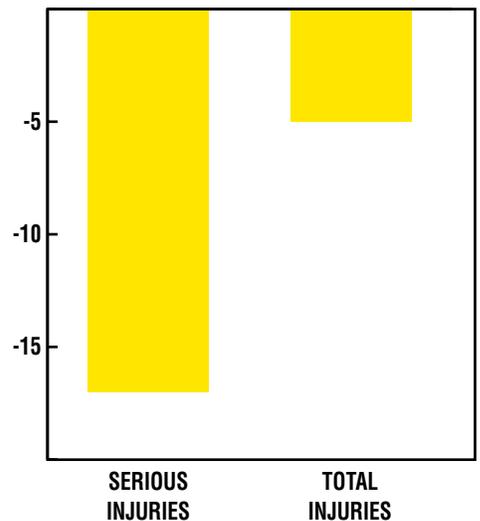
In the Institute study, 6 percent more booster-age kids were seated in the back after the restraint laws were expanded. Only

Wyoming stipulates that kids in boosters must be in an available back seat.

“States with laws requiring boosters or internal-harness child restraints for younger children should consider revising them to ensure that older children receive the best crash protection, too,” McCartt says. “It sends the message to parents that their school-age sons and daughters still need safeguarding.”

Children who are using improperly fitted belts are at risk of a host of crash injuries

**PERCENT CHANGE IN PER CAPITA RATE OF BOOSTER-AGE CHILDREN INJURED 2 YEARS BEFORE AND 2 YEARS AFTER 5 STATES (MO, NC, PA, WI, WY) EXPANDED CHILD RESTRAINT LAWS**



known as “seat belt syndrome.” These include hip and abdominal contusions, pelvic fractures, cervical and lumbar spine injuries, and internal organ injuries. Boosters help by elevating a child into position and guiding the belts for better protection.

During 2009, only 55 percent of 4-7 year-olds were observed in an appropriate restraint, a National Highway Traffic Safety Administration survey found. Of these, 41 percent were in boosters and 14 percent were in child restraints. Thirty-two percent of children this age were seen using belts, and 13 percent weren’t restrained at all.

For a copy of “Effects of booster seat laws on injury risk among children in crashes” by A.H. Eichelberger et al., email publications@ihs.org.

### CHECK FIT

These boosters may provide adequate belt fit for some kids in some vehicles.

Britax Parkway SG (backless mode)  
Britax Parkway SGL (backless mode)  
Chicco KeyFit Strada (backless mode)  
Clek Olli  
Clek Oobr (backless mode)  
Clek Ozzi  
Cosco Ambassador  
Cosco Highback Booster  
Cosco Pronto (backless mode)  
Diono/Sunshine Kids Monterey (backless mode)  
Diono/Sunshine Kids Santa Fe  
Eddie Bauer Auto Booster (backless mode)  
Evenflo Big Kid LX (backless mode)  
Evenflo Big Kid LX (highback mode)  
Evenflo Big Kid No Back Booster  
Evenflo Big Kid Sport (highback mode)  
Ferrari Ola  
Ferrari Dreamway SP (backless mode)  
Graco Argos 70 (backless mode)  
Graco Backless TurboBooster – Aspen  
Graco Backless TurboBooster – Baker  
Graco Backless TurboBooster – Love Hearts  
Graco Nautilus – Matrix (backless mode)  
Graco Nautilus – Matrix (highback mode)  
Graco Nautilus Elite (backless mode)  
Graco Nautilus Elite (highback mode)  
Graco Smart Seat  
Graco TurboBooster – Baldwin (backless mode)  
Graco TurboBooster Elite (backless mode)  
Maxi-Cosi Rodi (backless mode)  
Maxi-Cosi Rodi XR (backless mode)  
Safety 1st Boost Air Protect (backless mode)  
Safety 1st Go Hybrid  
Safety 1st Summit  
Safety 1st Vantage  
Safety 1st Ventura  
The First Years Compass B505  
The First Years Compass B530  
The First Years Compass B540  
Volvo Booster (backless mode)  
Volvo Booster (highback mode)



(continued from p. 3) the Monterey, from check fit to *BEST BET* by changing the shoulder belt guide. The new ranking applies when the dual-use seat is used in highback mode. The booster remains a check fit in backless mode. Consumers should look for Montereys manufactured after July 2011 to ensure they are getting the newer version.

Meanwhile, the Evenflo Symphony 65, which has been a *GOOD BET* since 2009,

now has a sister seat, the Symphony 65 e3. It has a slightly different shoulder belt guide, and that makes enough of a difference to make it a *BEST BET*.

“Booster manufacturers often use similar names for different seats or, in the case of the redesigned Monterey, even the same names,” McCartt says. “It’s important for consumers to look at model numbers and manufacture dates when consulting our ratings.”

Telling different seats apart can be even harder with boosters made by Graco. The company has multiple versions of some boosters, which for the most part differ only in the amount of padding. That small difference can sometimes affect belt fit.

“With Graco seats, different fabric patterns sometimes are the only clue beyond the model numbers that you’re dealing with two different seats,” McCartt says.

## RECORDER RULE HITS ROADBLOCK IN COURT CASE

A federal appeals court has rejected a 2010 rule requiring electronic onboard recorders for motor carriers with significant hours-of-service violations. The move is likely to delay a separate rulemaking seeking to mandate recorders for all interstate carriers.

Onboard recorders automatically track truckers' time on the road and rest breaks, helping to ensure compliance with federal hours-of-service regulations. Drivers currently write down their hours in paper logbooks, which are easily falsified. Some carriers use onboard recorders, but they aren't required. The Institute for more than 20 years has advocated recorders for all trucks based on research documenting the safety hazards of truck driver fatigue (see *Status Report*, Oct. 7, 2006, June 15, 2007, and Feb. 14, 2009; on the web at [ihs.org](http://ihs.org)).

In April 2010, the Federal Motor Carrier Safety Administration (FMCSA) issued a rule requiring onboard recorders for the fleets of truck and bus companies with a record of egregious work-rule violations. These make up just a small fraction of all carriers (see *Status Report*, June 22, 2010). Compliance was slated to begin in June 2012.

The Owner-Operator Independent Drivers Association and three commercial truck drivers challenged the rule on the grounds that carriers might use onboard recorders to harass drivers by pressuring them to drive when they are tired. The Graine Valley, Mo.-based group also questioned the benefits of requiring the devices and asserted that the rule violates the Fourth Amendment of the U.S. Constitution.

In August, the 7th U.S. Circuit Court of Appeals invalidated the rule, deciding the case based on the harassment issue (go to [www.ca7.uscourts.gov](http://www.ca7.uscourts.gov)). Under the Truck and Bus Safety and Regulatory Reform Act of 1988, FMCSA is required by law to ensure that recorders won't be used to harass vehicle operators if the devices are mandated.

The three-judge panel concluded that the rule can't stand because FMCSA "failed to consider an issue that it was statutorily required to address. Specifically, the agency said nothing about the requirement that any regulation about the use of monitoring devices in commercial vehicles must 'ensure that the devices are not used to harass vehicle operators.'"

The court noted that a rule is by definition arbitrary and capricious if it fails to address congressional mandates. The agency "should have revealed how it drew the line between legitimate measures designed to assure productivity and forbidden measures that harass," the panel wrote.

The Owner-Operator Independent Drivers Association called the decision a triumph for truckers.

"Companies can and do use technology to harass drivers by interrupting rest periods," Todd Spencer, executive vice president of the Owner-Operator Independent Drivers Association, said in a statement. "They can contact the

agency has said it expects to issue a final regulation by June 2012.

Noting that the agency has proposed onboard recorders for all motor carriers, the appeals court said, "Rather than reach beyond what is strictly necessary here, prudence dictates that we leave for another day any questions that might arise in connection with whatever new rule the agency decides to adopt."

The court's decision could mean a delay in FMCSA's efforts to get electronic onboard recorders in all commercial trucks.

"We hope this issue can be resolved quickly," says Institute president Adrian Lund. "Onboard recorders can increase compliance with hours-of-service regulations, and fewer tired truckers means safer roads for everyone."

The American Trucking Associations, which asked the



driver and put on pressure to get back on the road to get the most of his or her on-duty time, regardless of how fatigued a driver may be."

The decision leaves up in the air the fate of a broader onboard recorder requirement FMCSA proposed earlier this year (see *Status Report*, April 26, 2011). Under the plan, about half a million long-haul carriers that use logbooks would have to switch to recorders to verify hours-of-service compliance. The

Obama Administration in September not to rewrite the current hours-of-service regulations, backs the proposed electronic onboard recorder mandate.

"Though we are still reviewing the court's decision, ATA supports FMCSA's efforts to mandate the adoption and use of electronic logging devices for hours-of-service compliance," ATA president and chief executive officer Bill Graves said in a statement.

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North Carolina Farm Bureau Mutual Insurance Company

Northern Neck Insurance Company  
Oklahoma Farm Bureau Mutual Insurance Company  
Old American County Mutual Fire Insurance  
Oregon Mutual Insurance  
Pekin Insurance  
PEMCO Insurance  
Plymouth Rock Assurance  
Progressive Corporation  
The Responsive Auto Insurance Company  
Rockingham Group  
Safeco Insurance  
Samsung Fire & Marine Insurance Company  
SECURA Insurance  
Sentry Insurance  
Shelter Insurance  
Sompo Japan Insurance Company of America  
South Carolina Farm Bureau Mutual Insurance Company  
Southern Farm Bureau Casualty Insurance Company  
State Auto Insurance Companies  
State Farm  
Tennessee Farmers Mutual Insurance Company  
Texas Farm Bureau Insurance Companies  
Tokio Marine Nichido  
The Travelers Companies  
United Educators  
USAA  
Viceroy Insurance Company  
Virginia Farm Bureau Mutual Insurance  
West Bend Mutual Insurance Company  
Young America Insurance Company  
Zurich North America

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