Smart Car and Smart Highway Liability: Lessons from Experience with Airbags, Antilock Brakes, Cruise Control, and Cellular Telephones

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There has been relatively little published research on the legal liability that may accompany Intelligent Vehicle-Highway Systems (IVHS). Nevertheless, great concern about such liability has been expressed by funding agencies, manufacturers, highway departments, and scientists. Legal liability has been identified as one of the most significant obstacles facing those who would help create smart cars and smart highways in the United States.

Assessment of the potential liability of a new automotive technology is difficult. It requires, at a minimum, guesses as to (1) how frequently the technology will cause (or be accused of causing) injuries and property damage; (2) how severe the injuries and damage will be; and (3) how the American tort and product liability system will allocate responsibility for the accidents among drivers, automobile owners, component manufacturers, automobile manufacturers, and highway owners and designers. Assessment also requires some prediction as to how well the liability risk can be managed through planning the design, labeling, and installation of the product.

While legal treatises help a great deal with this assessment, they focus like litigation on the technology that is already in place on American cars and highways. They generally ignore the many new applications of technology that have been bundled under the IVHS label. Yet IVHS promises to change significantly the ways we drive, and hence the ways we have accidents. Until each IVHS application comes into use by numerous consumers, we cannot predict with any certainty how the tort liability system will adapt to the new technology.

This uncertainty is unnerving. If limitless liability looms on the horizon of an IVHS product such as an automatic braking system, a collision warning system, or a controlled highway, that may be bogeyman enough to scare everybody away from the

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1 One exception is R. Frank, Future Vehicle Electronic Systems, reprinted in the 1984 Supplement to Automotive Engineering and Litigation (discussing many of the technological applications that have come to be called IVHS, but not analyzing any legal ramifications of the applications).
2 One exception is R. Frank, Future Vehicle Electronic Systems, reprinted in the 1984 Supplement to Automotive Engineering and Litigation (discussing many of the technological applications that have come to be called IVHS, but not analyzing any legal ramifications of the applications).
technology. Lawyers -- and particularly products liability defense lawyers who are scarred
veterans in previous lawsuits with the plaintiffs' bar -- speak with a lot of credibility when
they warn of the unforeseen liability risks of new automotive technologies.

Nevertheless, I believe that much of the concern about legal liability is overstated or
uninformed. After all, cars and highways have already changed a lot over the last fifty
years. New technologies have been employed, litigation has resulted, and it has often (but
not always) been successfully managed or minimized by the defendants. There are lessons
to be learned for IVHS from the liability experience of these other technologies -- lessons
that may reduce fears of fathomless liability from IVHS and promote a realistic assessment
of the liability risk of particular IVHS applications. This paper starts to draw these lessons
by looking to the liability experience of four automotive products that have been introduced
to American vehicles over the last 25 years: airbags, antilock brakes, cruise control, and
cellular telephones.

One methodological caveat is in order. In researching the liability experience of
these products, I looked almost exclusively to published case reports (written decisions by
judges in products liability cases that were tried or appealed) and articles published in
journals. There are surely other cases or claims involving these products that have never
surfaced in the form of a judge's opinion or a journal article, and many lawyers who
therefore have experience to draw upon that I cannot share. At the very least, I hope this
article will provoke such lawyers to bring that experience more directly to bear on IVHS.

I. Airbags

Airbags are one form of restraint system designed to reduce the severity of injuries
in automobile accidents. Other forms, which have often been alternatives to airbags, are
automatic seatbelts and a combination of a lap and shoulder belt with a warning system to
indicate when they have not been buckled.

Like airbags, most IVHS applications in some way promise to significantly increase
automobile safety. Information systems may direct drivers away from congested roads or
hazardous conditions; automatic braking and collision warning systems may prevent
accidents from occurring; automatic toll collection may reduce the frequency of sudden
stops and starts. Also like airbags, most IVHS applications are not necessary to the
operation of a vehicle, and there are substitute technologies (like a map or a radio) that may
be provided. By identifying the liability that has arisen from the choice to provide or not to
provide an airbag, we can learn some useful lessons about the liability that might flow from
the choice to provide or not to provide an IVHS application.

Federal Motor Vehicle Safety Standard 208 was amended in 1972 to require the
gradual phase-in of passive restraint systems in all cars made after August 15, 1975.3 A
1974 amendment permitted manufacturers to install either passive restraint systems
(including airbags) or manual belt systems. Pursuant to the amendment, manufacturers of
automobiles sold in the United States equipped their models with a variety of restraint
systems, with airbags (which tended to be more expensive than other choices) usually
restricted to more expensive models of automobiles.

3 49 Code of Federal Regulations 571.208
The designer's decision whether to employ an airbag or some other restraint system has been one of the most litigated issues in American design defect products liability law. Until recently, airbag litigation was largely filed by victims of traffic accidents involving cars not equipped with the technology. That is now changing. The analysis below first discusses airbag litigation involving cars that are not equipped with airbags, and then turns to litigation involving cars that are equipped with airbags.

A. Cars Without Airbags

Automobile manufacturers have one at least good reason to be wary of putting expensive safety-enhancing options on some of their cars (their expensive models). They should be wary because it may count against them in suits brought by victims of accidents in cars that are not equipped with the safety-enhancing technology. The suits may allege that the car without the safety device is of defective design because a device that could have been added to the car, and would have prevented the injury or accident, was left off by the manufacturer.

Many, many such suits have been filed against automobile manufacturers who fail to install airbags in all their cars. What happened to these suits? The majority of them have been dismissed by the courts on the grounds of preemption -- the doctrine that a federal statute may occasionally "preempt" state common law causes of action, including lawsuits based on state product liability law. The National Traffic and Motor Vehicle Safety Act of 1966, 15 U.S.C. 1391 et seq., and Federal Motor Vehicle Safety Standard 208 have generally been held to "preempt" state product liability suits for failure to provide an airbag. The Act and relevant safety standards have not, however, usually been held to "preempt" state product liability suits for claims that a child's car seat lacked safety features. Why the different outcomes? Herein lies the lesson for IVHS applications:

The Motor Vehicle Safety Act does not expressly indicate a congressional intent to preempt state product liability suits involving automobiles. Nevertheless, in the airbag cases, manufacturers could point the gradual phase-in provisions of FMVSS 208, and to choice of systems permitted by that standard, to argue that state suits based on failure to provide an airbag would implicitly conflict with the federal law. State product liability suits would implicitly conflict with this scheme by making a gradual phase-in of passive systems, or a choice of systems, impossible -- the manufacturer would have to put airbags on virtually all cars immediately, or choose the same system for all cars, or face ruinous liability. This implicit conflict, among other things, has led most courts to say there is preemption in the cases where cars are not equipped with airbags.

4 Section 1392(d) of the Act forbids States from adopting safety standards that are not identical to the federal standards. Courts have disagreed as to whether this subsection applies to bar state lawsuits, as well as state regulatory standards, that are implicitly in conflict with the federal standard. See Wood v. General Motors Corp., 865 F.2d 395 (1st Cir. 1988) (rejecting preemption) and Wickstrom v. Maplewood Toyota, Inc., 416 N.W.2d 838 (Minn. Ct. App. 1987) (finding preemption).

In the child-car-seat design defect cases, however (and there have been a number of such suits prosecuted against both Fisher Price and Century), there was no safety standard prescribing a choice of car-seat design or a phasing-in of ever more improved child seat technology. Instead, the standard laid out safety requirements, and courts have held that juries, in state product liability suits, are free to conclude that a car seat complying with the federal standard is nevertheless a defective design because it failed to provide some further protection beyond the federal minimum.

The lesson from this for IVHS is that, for the expensive IVHS applications that pose the most obvious safety benefits (such as an automatic emergency braking system), it may be quite important to get the explicit blessing of federal regulatory agencies over any decision to introduce the safety-enhancing technology on less than all of a manufacturer’s models. If a manufacturer wants to install collision warning systems, for example, it would help tremendously to have the schedule for phasing-in of the safety enhancing technology approved via a safety standard. This may, of course, require substantial reworking of a traditionally more adversarial relationship between manufacturers and the National Highway Traffic Safety Administration.6

B. Cars With Airbags

Airbags have now been put in place on enough cars that we are beginning to see product liability suits involving claims that an air bag was defective, and thus led to injuries in an accident. So far, two kinds of suits seem to predominate.

The first category is where, according to the plaintiffs, an airbag failed to deploy in circumstances where it should have done so. Federal safety standards do include fairly specific deployment criteria for airbags, and at least one court, in Louisiana, has held that an airbag-deployment design consistent with the criteria is, on preemption grounds, immune from state design-defect product-liability suits. However, not all courts agree.

The most prominent, albeit temporary, exception is a New York case where a woman fell asleep at the wheel of her Mercedes, struck a guardrail and a tree, and was killed. There was substantial evidence to indicate that the victim was not wearing her seat or shoulder belt. The victim’s survivors filed a $20,000,000 suit for defective design of the air bag, which did not inflate. Initially the suit alleged that the bag should have deployed (there was some front-end damage although most of the evidence indicated a side-impact crash). Ultimately, however, the trial judge lambasted airbags in general for "lulling drivers into a false sense of security under which they fail to use their seat and shoulder belts." That attack on airbags was sharply criticized when the trial judge’s ruling was reversed on appeal.7

The New York case nevertheless drives home two lessons. First, there is some risk of liability from a safety-enhancing technology if it can be persuasively argued that the

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technology unnecessarily reduces other precautions taken by the driver. Great attention is therefore warranted to issues of how to prevent drivers from inappropriately relying on the technology in lieu of standard safe driving techniques.

Second, it is important to identify and codify clear standards for when a safety-enhancing technology is supposed to deploy and when it is not supposed to deploy. The relevant audience for whom the standard must be clear should, I believe, be the average American juror in a state court, not the average regulatory lawyer or design engineer. IVHS designers should also keep in mind that they should be able, when necessary, to prove clearly and persuasively to a jury that the conditions for deployment did or did not obtain.

The other category of litigation involving cars equipped with airbags encompasses suits where, according to the plaintiff, an airbag should not have deployed but nevertheless did, causing injuries or death to the driver or passenger. I believe cases have been filed (although no reported decisions have come to my attention) in which the complaint alleged that faulty deployment of airbags has caused facial burns or more serious injuries, including breaking the neck of a smaller driver who slid under the airbag upon deployment. Other complaints have blamed accidents on a faulty deployment, which caused an accident by distracting the driver. Some risk of liability arises from these scenarios, although so far they seem to arise infrequently and the risk therefore seems relatively small.

Though infrequent, these cases underline another crucial lesson for IVHS planners. However wonderful and desirable a new safety-enhancing technology, there still may be people out there who would be better off if a different design had been chosen --people who are much smaller than those for whom the average airbag is designed, for example. And when injured, those people will not be hypothetical, but will be mangled flesh and blood presented to a jury. It may be extraordinarily difficult in such a case to persuade a jury to focus instead on the safety benefits enjoyed by the vast majority of people using the technology -- to make a jury focus on the accidents that did not happen.\(^8\)

II. Antilock Brakes

Antilock brakes gave rise to serious product liability suits soon after being introduced into the trucking industry in the 1960s and 1970s. I have found it extraordinarily difficult to pinpoint just what drove ABS from the passenger car market for decades after it was briefly introduced on top-of-the-line vehicles. Anecdotal evidence certainly suggests that fear of legal liability, coupled with the high costs of ABS, both played some role. It is clear, however, that ABS did not reenter American passenger cars until quite recently, after the widespread use of ABS abroad generated evidence of enhanced safety and low risk of serious injury.

The ABS experience suggests that implementation of some aspects of IVHS technology may come faster abroad than in the United States, regardless of any American lead in developing the technology. This may well be so, simply because the civil justice systems in Germany and Japan pose a substantially lower liability risk for manufacturers.

choosing where to introduce an innovative technology. Because the damages recovered in other countries tend to be substantially lower than in the United States, and because alternative social welfare schemes elsewhere are more widely accessible to compensate the victims of accidents (who therefore may be less likely to sue), manufacturers with a choice may innovate first elsewhere.

We can continue to expect product liability suits in connection with antilock braking systems, particularly in single vehicle accidents where there is no other driver or liability insurance to blame. The most recent cases in the United States indicate that juries have difficulty following the technical explanations of how an antilock braking system is designed and how it is supposed to work under different road conditions. In one case, a trial judge repeatedly interrupted, and arguably misinterpreted, the expert testimony on these questions, apparently in an attempt to aid the jury's understanding.9

Once again, it appears that clear guidelines for the design and deployment of IVHS systems would be desirable, so that expert testimony can be directed at straightforward issues that can be clearly presented to juries.

III. Cruise Control

Cruise control is an example of a technology that has successfully shifted some of the responsibility for operating the vehicle from the driver to the car, without also shifting legal liability for accidents to the car's manufacturer. A cruise control system, once engaged at the choice of the driver, maintains a set speed and permits the driver to surrender control of the throttle (by taking his or her foot off the gas). Most cruise control systems are easily disengaged in a number of ways, including by touching a button, or by braking.

I have searched all state databases for product liability suits involving a cruise control system, and found only a handful of reported decisions. Most of them involve highly implausible claims by plaintiffs. One, for example, involves a woman in a car wash who claimed she had inadvertently activated the cruise control of the car while reaching across the front seat from an open front door, thereby causing the car to go through the wash more quickly and violently than expected. She claimed the system should have had an additional safety switch on the dash, preventing it from being engaged. The claim was rejected by the court in an unpublished opinion granting summary judgment.10

It is certainly possible that there are dozens or hundreds of cruise control cases out there, but that they are all settled or dismissed without published opinions. I would guess,

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10 See Dupper v. General Motors, memorandum op. Oct. 3, 1989, decision reported 887 F.2d 1089 (9th Cir. 1989). For an example of a case in which a driver claimed that a cruise control design was defective because it failed to deactivate, see Patty v. Toyota Motor Corp., slip op. Oct. 17, 1991 No. 4-91-v-63 (N.D. Ga.)
however, that people rarely sue claiming that the defective cruise control caused an accident -- rarely at least when compared with suits involving other components of an automobile. Given the prevalence of cruise control on American cars, and given that cruise control dilutes the driver's control of the vehicle, the infrequency of reported opinions involving cruise control surprised me.\textsuperscript{11}

I can advance two explanations for why cruise control does not seem to have produced much liability for automobile manufacturers or suppliers. First, it could be that cruise control tends to be used by drivers in road conditions that relatively infrequently produce accidents. Perhaps most drivers choose to engage cruise control only on long drives between cities on major uncongested thoroughfares. Cruise control may be voluntarily disengaged at the times when most accidents occur: in city driving, in bad weather, and in congested traffic. And therefore cruise control would not be a tenable culprit in the search for a cause for most accidents.

Another possibility is that the design of cruise control performs two functions that IVHS planners should emulate: (1) it reduces the likelihood of accidents involving the technology (a "driver-friendly design") and (2) it reduces the likelihood that jurors will view the technology as responsible for accidents occurring while the technology is in use (a "jury-friendly design"). The latter function requires elaboration: cruise control technology is easy to disengage and easy to understand. A large fraction of jurors and judges have used it. And cruise control leaves the driver with the sense that he or she remains in substantial control of the operation of the vehicle. Thus, the claim that an accident was "caused" by the cruise control becomes an unattractive argument to make to a jury.

The implications for IVHS may vary depending upon why cruise control has not produced much litigation. If it is because cruise control is rarely engaged in driving conditions where accidents tend to occur, then the cruise control experience offers scant comfort. Many IVHS applications are specifically intended for use in the sort of road conditions that tend to produce accidents. But if cruise control succeeds in evading liability because of its "jury-friendly" design, then cruise control is an important example indeed for IVHS planners. They may well minimize potential liability from their IVHS applications by doing what cruise control does: Make it easy for drivers to engage and disengage the technology, make the technology easy to understand and simple to use, and make it difficult for a driver to claim he or she had surrendered responsibility for operation of the vehicle to the IVHS system.

\textbf{IV. Cellular Telephones}

Cellular car telephones, like many IVHS traveler information systems, may distract drivers from the operation of the vehicle in some circumstances. Accidents have surely occurred where the driver was fumbling with the telephone and thus was distracted from operating the vehicle. How concerned should manufacturers and owners of IVHS

\textsuperscript{11} It was an unpleasant surprise in part because it tends to disprove a thesis advanced in an earlier article, Liability and Insurance Implications of IVHS technology, supra note 1. There I argued that the more an IVHS technology diluted the driver's control of a vehicle, the greater would be the liability risk borne by the manufacturer of the technology.
information systems be about products liability suits brought by distracted drivers and the people they may injure?

Judging by caselaw involving cellular telephones, this concern is not a serious one. Despite a fairly thorough search of all state databases, I have not found any reported cases in which a cellular telephone manufacturer was sued on the theory that the telephone and the driver's use of it while driving caused an accident. To be sure, a creative plaintiff's lawyer may be laying in wait somewhere with a suit alleging such a theory. Some cellular phone manufacturers and communications companies have begun to distribute pamphlets urging caution in use of the phone under difficult driving conditions. This at least implies that there might be a liability risk.

I doubt it is a serious one. As a trial lawyer, I would have to be pretty desperate before I would argue that the telephone was responsible for an accident, because I would fear the counterargument that a reasonable person would always ignore the phone if road conditions warranted, rather than trying to complete a phone call at the same time as driving. The counterargument might be particularly attractive to the majority of jurors who are not wealthy enough to enjoy cellular service, and hence might have little sympathy for my client. I suspect lawyers would resort to this theory only if there was no other driver to blame, or no other more attractive theory explaining the accident.

Even if this speculation is wrong, it still seems relatively easy to design an IVHS information system to prevent most suits that could allege that the system caused an accident. For example, the system could be designed to engage only after the driver or passenger has affirmatively advanced past a warning displayed on a screen. The system could be designed to be easy to disregard if necessary, due to road conditions, or the information could be aimed wherever feasible at a passenger rather than a driver.

V. Conclusion

The liability problems generated by IVHS applications are not entirely unique, but rather have been faced, and often overcome, in the context of other new automotive technologies. If we learn the lessons from experience with those technologies, many IVHS technologies should enjoy the relative immunity from the courtroom that has characterized experience with cruise control and cellular telephones.