

**ADVANCED VEHICLE CONTROL SYSTEMS
POTENTIAL TORT LIABILITY FOR DEVELOPERS**

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By:

Nossaman, Guthner, Knox & Elliott
50 California Street, 34th Floor
San Francisco, CA 94111
(415) 398-3600

Stephen N. Roberts, Partner, Principal Investigator
Alison S. Hightower, Partner, Investigator
Michael G. Thornton, Associate, Research Assistant
Linda N. Cunningham, Associate, Research Assistant
Richard G. Terry, Paralegal

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I. INTRODUCTION

Automobile accidents avoided because the automatic collision avoidance system applies the brakes, highways which accommodate more vehicles with fewer accidents, and even cars which are piloted entirely by sophisticated electronic systems -- all of this and more is envisioned as stemming from the development of advanced vehicle control systems (AVCS). While AVCS exhibits great promise, the private entities which will design, test, and manufacture these systems will be discouraged if potential tort liability from AVCS-related accidents is sufficiently staggering. As discussed below, AVCS manufacturers, sellers, and designers could face significant exposure under existing tort law to claims for negligence, strict product liability, breach of warranty, fraud, negligent representation, and fraudulent or negligent advertising. A variety of legislative changes to the law, however, could drastically diminish that potential tort liability, by preempting state tort law, limiting liability, modifying tort doctrines, mandating alternative dispute resolution and various other reforms.

II. THE WORLD OF ADVANCED VEHICLE CONTROL SYSTEMS (AVCS)

Over the last 30 years some AVCS products have been developed and marketed, including anti-lock brakes, traction control, active suspension and four-wheel steering.^{1/} Experts foresee greater advances in technology resulting in more systems which can eliminate accidents resulting from driver error. Such systems will combine sensors, computers and control systems within vehicles to warn, assist or even intervene in the driving process. This will be accomplished by at least two different types of advanced technology: (1) enhancement of the driver's perception through the use of sensors, video or infrared projection and vision enhancement during inclement weather and in areas of low visibility; and (2) automated controls that are faster, more precise, and more reliable than human reactions. The technologies will run the gamut from internal vehicle control systems such as automated steering, braking and accelerating, to external control systems such as completely automated highways with total control of the vehicle.^{2/}

Various types of perceptual enhancement technology are in development or available in the marketplace. Proposed devices include front, rear or peripheral radar or advanced sensors which would detect and warn the driver of vehicles making lane changes or approaching from behind or head on.^{3/} Other types of devices under development include video displays that increase rear and side visibility, while reducing

1/ IVHS America, *Strategic Plan for intelligent Vehicle Highway Systems in the United States*, Report No. IVHS-AMER-92-3 III 32-40 (May 20, 1992); P. Rothberg, *Intelligent Vehicle Highway Systems (IVHS): Challenges, Constraints, and Federal Programs*, CRS Report for Congress (February 18, 1992); Transportation Research Board, *Special Report 232 Advanced Vehicle and Highway Technologies* (1991).

2/ Id.

3/ Id.; United States General Accounting Office, *SMART HIGHWAYS: An Assessment of Their Potential to Improve Travel*, Report to the Chairman, Subcommittee on Appropriations, U.S. Senate (May 1991).

the reflective glare of headlights, to augment conventional rear and side view mirrors.^{4/} Greyhound Bus Lines is already using Vorad, a radar based technology, on its buses to augment existing visual devices used by the drivers.^{5/} The Japanese, in the Personal Vehicle Systems Project being developed by Fujitsu and Nissan, are investigating on-board obstacle recognition and avoidance systems.^{6/} These controls, which increase reaction speed, are expected to diminish the number of accidents on the road and facilitate the flow of traffic.

Automated controls contemplated include sophisticated vehicle controls that will perform braking, acceleration, automatic cruise control and steering functions for the driver,^{7/} eventually creating a system that totally removes control of the vehicle from the driver.^{8/} Sensors embedded in the roadway or on-board the vehicle will trigger controls within the vehicle that either supplement or override the corrective actions of the driver in potentially hazardous situations.^{9/}

Other types of AVCS technology being tested include video imaging that traces the edge of the road to direct the path of the vehicle,^{10/} and sensors embedded in the pavement used in conjunction with on-board vehicle controls that maintain the lateral positioning of the vehicle while on the highway.^{11/} In Japan, Mazda is presently researching a fully autonomous vehicle utilizing computer vision, artificial intelligence and automation technologies literally to take over the driving role.^{12/}

Inherent in much proposed AVCS technology is a method of "platooning" vehicles. With advanced controls to place the vehicle on "auto pilot," automobiles could travel more closely together at a higher rate of speed, increasing the number of vehicles that can pass through the traffic corridors.^{13/} The TEMPO model also includes vertically stacked dedicated light-rail lanes in conjunction with platooning to increase the amount of available area for the highway systems while increasing the number of vehicles traveling in those corridors.^{14/} Lanes could be dedicated for passenger, Commercial Vehicle Operations (CVOs), and Advanced Public Transportation Systems

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- 4/ A. Adler, *Microchip Technology May Eliminate Auto Mirrors*, Associated Press (March 3, 1993).
5/ P. Einstein, *Consortium To Spend \$40 Mil On 'Smart Cars'*, Investor's Daily (February 26, 1993).
6/ *Special Report 232 Advanced Vehicle and Highway Technologies* at 75.
7/ IVHS America, *Strategic Plan For Intelligent-Vehicle Highway Systems*, III 32-41; *Special Report 232 Advanced Vehicle and Highway Technologies* at 29, 38-40 P. Rothberg, *Intelligent Vehicle Highway Systems (IVHS): Challenges, Constraints, and Federal Programs*, at CRS 12-13.
8/ Id.
9/ Id.
10/ Cox News Service, *Self-Driving Car Could be a Reality in 10 Years*, Star Tribune (November 7, 1993).
11/ P. Rothberg, *Intelligent Vehicle Highway Systems (IVHS): Challenges, Constraints, and Federal Programs* at CRS 12-13.
12/ *Special Report 232 Advanced Vehicle and Highway Technologies* at 75.
13/ IVHS America, *Strategic Plan for Intelligent Vehicle-Highway Systems* at III 37; GAO, *SMART HIGHWAYS: An Assessment of Their Potential to Improve Travel* at 33; P. Rothberg, *Intelligent Vehicle Highway Systems (IVHS): Challenges, Constraints, and Federal Programs* at CRS-13; *Special Report 232 Advanced Vehicle and Highway Technologies* at 23.
14/ P. Nobileu, *The TEMPO Alternative* at 477.

(APTS) vehicles, with advanced controls and sensors to maximize the speed of the AVCS equipped vehicles while still allowing use by other vehicles.^{15/}

The private sector will shoulder primary responsibility for developing AVCS services, but the Department of Transportation will develop performance specifications. Private entities will contract with state and local governments to provide infrastructure equipment.^{16/}

While AVCS holds the potential of greatly reducing the number of traffic accidents, any product has a probability of malfunctioning at one time or another, and AVCS is unlikely to be an exception. At higher speeds and greater density, the consequences of a defect in AVCS equipment could be deadly, resulting in massive injuries and fatalities and expensive lawsuits. We turn now to considering the possible tort liability of AVCS manufacturers, retailers, designers, and the federal government for such suits.

III. POTENTIAL TORT LIABILITY

A. Potential Product Liability: Negligence And Strict Liability

Of all of the intelligent vehicle highway technologies under consideration, AVCS posits the greatest likelihood of product liability. Devices which transfer control from the driver to automated systems put the driver and the passengers at the mercy of these products. Like passengers in a bus, they have little or no control over the vehicle, and thus when an accident occurs the risk that the manufacturer and others in the chain of distribution will be liable is significantly increased.^{17/}

Three legal theories subject the manufacturer, designer, and distributor of unsafe products to potential tort liability: negligence, strict liability, and breach of warranty. As the following discussion demonstrates, all three theories pose a significant threat of tort liability for those involved in AVCS products.

1. Negligence Is Based On Defendant's Breach Of Its Duty Of Care

Liability for negligence has long been predicated on a failure to exercise the appropriate level of due care to ensure that a product does not subject the user to unreasonable risk.^{18/} In order to recover damages, the injured victim has the burden of proving the existence and breach of a duty of care, proximate cause, and damages. Duty of care is commensurate with the risk of danger involved, and requires a balancing of the likelihood of harm and gravity of possible harm against the burden of effective

15/ Id.; IVHS America, *Strategic Plan for Intelligent Vehicle Highway Systems at III* 35.

16/ Additional information on contemplated programs may be found in the *National Program Plan for Intelligent Vehicle-Highway Systems (IVHS)*. October 15, 1993 Draft.

17/ E.g., *Greyhound Corp. v. Brown*, 269 Ala. 520, 113 So.2d 916 (1959).

18/ *Rest. Torts* 2d § 282.

precautions.^{19/} This balancing of interests reflects a policy decision which renders the manufacturer liable for failure to prevent a foreseeable accident, but does not transform the manufacturer into the absolute insurer of the users of its products.^{20/} In the case of automobiles, courts generally do not require manufacturers to design cars that are incapable of crashing or otherwise inflicting harm.^{21/}

a. The Duty Of Due Care

Manufacturers must exercise due care in designing the product,^{22/} in selecting materials,^{23/} in the production process, in making reasonable tests and inspections,^{24/} and in warning of any dangers.^{25/} Moreover, a manufacturer that utilizes component parts supplied by third parties has an obligation to conduct reasonable inspections and tests of those parts and, where appropriate, warn of possible dangers.^{26/} Although manufacturers generally cannot rely on government inspections or tests, if the government tests a product, that can be evidence that the manufacturer exercised due care.^{27/} Automobile distributors and sellers of driver-assisted vehicle control systems will owe a duty of ordinary care to ascertain through appropriate inspections and tests that the product is safe,^{28/} although typically not to determine the safety of the design itself,^{29/} or to discover latent defects.^{30/} Manufacturers, distributors, sellers, and others could be jointly and severally liable for the damage caused by their respective negligence and, if one is unable to pay, the others will be required to compensate the victim fully.^{31/} Unless altered by statute, a retailer with only one percent of the liability might be required to pay all of the judgment.

The duty of all of the entities in the chain of distribution is to use the standard of care of a reasonable similarly situated entity. Proof of the custom and

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- 19/ See, *Rest. Torts* 2d § 395, comment d; *Micalief v. Miehle Co.*, 39 N.Y.2d 376, § 384 N.Y.S.2d 115,348 N.E.2d 571, 577-78 (1976).
- 20/ E.g., *Ullwelling v. Crown Coach Corp.*, 206 Cal.App.2d 96, 105, 23 Cal. Rptr. 631 (1962); *Pabon v. Hackensack Auto Sales, Inc.*, 63 N.J. Super. 476, 164 A.2d 773 (1960); *Schneider v. Chrysler Motors Corp.*, 401 F.2d 549, 557 (8th Cir. 1968).
- 21/ *Fox v. Ford Motor Co.*, 575 F.2d 774,783 (10th Cir. 1978).
- 22/ *Dulin v. Circle F Industries, Inc.*, 558 F.2d 456, 467 (8th Cir. 1977).
- 23/ *Pouncey v. Ford Motor Co.*, 464 F.2d 957, 961 (5th Cir. 1972) (liability imposed for utilizing steel which was subject to premature metal fatigue).
- 24/ E.g., *Treadwell Ford, Inc. v. Campbell*, 485 So.2d 312, 316 (Ala. 1986) (negligent failure to inspect defective used truck) *appeal dismissed*, 486 U.S. 1028, 108 S.Ct. 2007, 100 L.Ed.2d 596 (1988).
- 25/ E.g., *King v. Ford Motor Co.*, 597 F.2d 436, 444 (5th Cir. 1979); *Brocklesby v. United States*, 767 F.2d 1288, 1297 (9th Cir. 1985) (applying California law), *cert. denied sub nom.*, *Jeppesen & Co. v. Brocklesby*, 474 U.S. 1101, 106 S.Ct. 82,88 L.Ed.2d 918 (1986); *Downing v. Overhead Door Corp.*, 707 P.2d 1027, 1032 (Colo. App. 1985) (applying Colorado law).
- 26/ *Morris v. American Motors Corp.*, 142 Vt. 566,459 A.2d 968,972 (1982); *Rest. Torts* 2d § 395 comment m.
- 27/ *Paolinelli v. Dainty Foods Mfrs., Inc.*, 322 Ill.App. 586, 508, 54 N.E.2d 759 (1944).
- 28/ *Casseis v. Ford Motor Co.*, 10N.C.App.51, 178S.E.2d 12,15(1970).
- 29/ *Wagner v. Larson*, 257 Iowa 1202, 136 N.W.2d 312, 325 (1965).
- 30/ *General Motors Corp. v. Davis*, 141 Ga.App. 495, 233 S.E.2d 825,828-29 (1977); *Rest. Torts* 2d § 402.
- 31/ See discussion of contribution and indemnity, *Infra*, at 35-39.

practice in the industry is admissible to show not only what that defendant actually knew about the potential hazard, but what it should have known. Although failure to comply with industry custom and practice is evidence of negligence,^{32/} in the majority of jurisdictions compliance with industry custom does not conclusively establish ordinary care.^{33/} Proof of such custom will be difficult when AVCS is in its infancy, particularly if only a handful of entities are participating in the AVCS “industry.”

The applicable standard of care, particularly in the early years of AVCS, will be heavily influenced by any promulgation of federal or state statutes or regulations. Tort law currently considers such statutes and regulations as admissible to show compliance (or lack thereof) with the standard of care.^{34/} Promulgation of safety standards governing AVCS products would diminish liability in some states where compliance with applicable laws or generally recognized standards provides a rebuttable presumption that a product is not defective or the defendant was not negligent.^{35/} However, not all states provide that compliance with federal safety standards will preclude liability for negligence, particularly where a reasonably prudent manufacturer should have taken other measures.^{36/}

On the other hand, evidence that a manufacturer violated a federal or state statute, regulation or even ordinance is admissible to prove negligence.^{37/} Indeed, where the statute or regulation provides an applicable unambiguous minimum standard of care, the violation of that statute or regulation may give rise to a conclusive finding of negligence.^{38/} Thus, should the federal government promulgate safety standards governing AVCS, it should be careful to make them as clear as possible. Alternatively, the government could absolve AVCS manufacturers and others of such conclusive negligence by indicating in the statute or regulation that the law is not intended to affect the civil liability of entities governed by the law.^{39/}

b. Res Ipsa Loquitur

Many jurisdictions permit plaintiffs to prove negligence by showing that the particular character or nature of the accident is such that it could only have been caused by the defendant’s negligence. This method of proving liability -- called *res ipsa loquitur* -- applies where the defendant had exclusive control of the product at the time the negligent act occurred (rather than at the time of the accident), and there was no

32/ *Gordon v. Aztec Brewing Co.*, 33 Cal.2d 514, 517,203 P.2d 522 (1949).
33/ E.g., *Brown v. Clark Equipment Co.*, 62 Haw. 530, 618 P.2d 267, 272 (1980); *Smith v. Godfrey*, 155 Ga.App. 113,270 S.E.2d 322, 324 (1980).
34/ E.g., *Fabian v. E.W. Bliss Co.*, 582 F.2d 1257, 1261 (10th Cir. 1978).
35/ E.g., Kan. Stat. Ann. § 60-3304(a); Ky. Rev. Stat. Ann. § 411.310(2); N.D. Cent. Code § 28-01.1-05(3); Utah Code Ann. § 78-15-6(3).
36/ *Welsh v. Century Products, Inc.*, 745 F.Supp. 313,319 (D. Md. 1990) (negligent design of car seat); *Ellis v. K-Lan Co.*, 695 F.2d 157, 174 (5th Cir. 1983).
37/ *Seese v. Volkswagenwerk A.G.*, 648 F.2d 833, 846-47 (3d Cir. 1981), cert. denied, 454 U.S. 867, 70 L.Ed.2d 168, 102 S.Ct. 330 (1981).
38/ *Dougherty v. Santa Fe Marine, Inc.*, 698 F.2d. 232,234-35 (5th Cir. 1983) (Coast Guard regulation did not establish clear minimum standard of care).
39/ *Minkhello v. U.S. Industries, Inc.*, 756 F.2d 26, 29 (6th Cir. 1985).

alteration of or tampering with the product.^{40/} Automobile manufacturers can be liable if the plaintiff can show evidence negating possible causes of the accident other than a product defect, and can show that the automobile was defective.^{41/} Evidence that the product was repeatedly in need of repair can support an inference that the product was defective at the time it was purchased.^{42/} While the mere fact of an accident is not enough under most states' laws, the greater the control transferred from the driver to the automated vehicular system, the more likely the mere fact of the accident will be enough to establish liability.

Res ipsa loquitur is particularly an issue for automated steering and braking control devices and automated highways, because most accidents involving these systems will appear to be possible only if the system is defective. However, the fact that an owner of a collision warning system has utilized the system for a substantial period of time could militate against a finding of *res ipsa loquitur*.^{43/} Since the logic underlying this rule is that the negligence is not likely to be that of someone other than the defendant, the less control vested in the automobile owner the more likely *res ipsa loquitur* would be a successful theory of liability.

2. Strict Liability

a. Introduction

Rather than focusing on the conduct of the defendant, strict liability focuses on the defectiveness of the product. Because the defendant cannot absolve itself of liability based on due care, and no privity with the defendant is required, it is the most likely theory to deter private enterprise from participating in AVCS.

Strict liability is an invention of modern law, created to redress the harm consumers suffer which could not be redressed under breach of warranty theories due to a lack of privity.^{44/} First developed to remedy injuries caused by unwholesome foods, it was expanded steadily to include other hazardous products.^{45/} As Justice Traynor of the California Supreme Court explained, the purpose of the doctrine of strict liability is "to insure that the cost of injuries resulting from defective products are borne by the manufacturers that put such products on the market rather than by the injured persons who are powerless to protect themselves."^{46/} The public policy rationale underlying the theory is the belief that manufacturers and sellers can best absorb the

40/ See, *Calabretta v. National Airlines, Inc.*, 528 F.Supp. 32, 34-35 (E.D. N.Y. 1981); *Watkins v. SC. Johnson & Sons, Inc.*, 16 Ohio Misc.2d 11,477 N.E.2d 479,481 (1984); Rest. Torts 2d § g.328 D, comment

41/ *Hall v. General Motors Corp.*, 647 F.2d 175, 178 (D.C. Ct. App. 1980); *Pouncey v. Ford Motor Co.*, 464 F.2d 957, 959 (5th Cir. 1972) (applying Alabama law).

42/ *Willis v. Brace Co.*, 279 S.C. 485, 309 S.E.2d 295, 299 (1983).

43/ *Floyd Lashley v. Ford Motor Co.*, 359 F.Supp. 363, 367(M.D. Ga. 1972), aff'd 480 F.2d 158 (5th Cir. 1973), cert. denied, 414 U.S. 1072, 38 L.Ed.2d 478, 94 S.Ct. 585 (1973) (car in possession of plaintiff for nineteen months).

44/ Prosser & Keeton on Torts, supra, § 98 at 692-693.

45/ *Greenman v. Yuba Power Products, Inc.*, 59 Cal.2d 57, 62, 27 Cal.Rptr. 697 (1963).

46/ *Id.* at 63.

cost of defectively dangerous products because they can spread the cost of accidents among the many purchasers of their products.^{47/} That rationale is still accepted today.^{48/}

Under the definition adopted by the Restatement of Torts Second,^{49/} strict liability is imposed where a product is sold in a defective condition, making it unreasonably dangerous, and, without having been substantially altered, the product causes bodily injury to the user or consumer or damages to the user's or consumer's property. Strict liability is applicable not only to purchasers of defective equipment, but also to non-purchasers who use the product.

Furthermore, all those in the chain of distribution are potentially strictly liable: the designers, manufacturers, assemblers, distributors, wholesalers and retailers.^{50/} It is not difficult to understand why the designer, manufacturer and assembler should be held strictly liable if its product is defective; it is less apparent why wholesalers and retailers should also be held responsible. The courts have reasoned, and the Restatement has agreed, that certain public policies justify imposing liability upon the seller: (1) "by marketing his product for use and consumption, [the seller] has undertaken and assumed a special responsibility toward any member of the consuming product who may be injured by it;" (2) the public expects reputable sellers to stand behind their goods; (3) the burden of accidental injuries caused by products should be borne by retailers rather than by the injured consumer; (4) the seller can obtain insurance to bear the cost of such accidents; and (5) the seller can exert pressure on the manufacturer to sell safe products.^{51/} The potential for being held strictly liable consequently will impact all entities who manufacture, design, or sell AVCS products.

b. Products Compared With Services

Whereas a provider of a service can be held responsible for its negligence, strict product liability does not apply to services, only to products. The dividing line is often difficult to draw. Public roads and the guard-rails and bridges associated with them generally are not considered to be products.^{52/} For instance, in *Van Iderstine v. Iane Pipe Corp.*,^{53/} a father and his infant son sought compensation from the county for injuries sustained when their car hit a guardrail. The court upheld summary judgment in favor of the defendant on the grounds that the erection of a guardrail was a service rather than a product. The court noted that the public policies underlying the imposition of strict liability were absent. Though the plaintiffs could easily identify the designer and assembler of the guardrail, the desire to spread the risk to the

47/ Prosser & Keeton on Torts, 98 at 693.supra, §

48/ *Cafes v. Sears, Roebuck & Co.*, 928 F.2d 679, 684 (5th Cir. 1991).

49/ Rest Torts 2d§402A.

50/ Rest. Torts 2d. § 402A, comment f.

51/ Id.; *Vandermark v. Ford Motor Co.*, 61 Cal.2d 256,262-263, 37 Cal.Rptr. 896(1964);*Mead v.*

52/ *Warner Division*, 57 A.D.2d 340, 394 N.Y S.2d 483 (App.Div.1977).*Pruyn*

Edward M. Chadboume, Inc. v. Vaughn, 491 So.2d 551,553 (Fla. 1986) (roadway contractor not strictly liable for erosion of public road surface).

53/ 89 A.D.2d 459,455 N.Y.S.2d 450,452 (1982).

defendant was deemed inappropriate where the government was providing a service.^{54/}

Under strict liability theory, Government probably will not be liable for accidents along automated highways where the alleged defect involves the construction of a defectively designed automated lane, which is likely to be characterized as a service. The traffic regulation system used in conjunction with automated highways also might be considered to be a service. But automated steering and braking control devices, adaptive cruise controls, and collision avoidance systems are unlikely to be considered to be services, as they presumably would be manufactured by the private sector and sold to consumers directly. Strict liability accordingly will be a potential theory of liability for victims of certain AVCS-related accidents.

c. "Unreasonably Dangerous" Product

Assuming that a product is at issue, to establish strict liability the plaintiff must prove that the product was defective. In the majority of states which have adopted the Restatement approach, the plaintiff also must show that this defect created an unreasonably dangerous condition which proximately caused plaintiffs injury.^{55/}

Some states do not consider a product unreasonably dangerous if the defect or risk is patent or openly obvious.^{56/} For instance, if a driver suddenly encounters a snowstorm, the fact that the vehicle condition and performance monitoring system failed to warn of snow conditions may not create an unreasonably dangerous condition as the snowstorm is obvious. By contrast, should an automated highway system result in a car swerving out of its lane into an adjoining car, the risk is so obviously unreasonable that the product, if defective, is certain to be deemed unreasonably dangerous.^{57/}

However, many states consider the obviousness of the danger to be merely one of the factors to be considered by the jury rather than an absolute defense.^{58/} Only where the obviousness of the danger to the particular victim is so great that he can be said to have assumed the risk do these courts absolve the manufacturer of liability.^{59/} Moreover, since the obviousness of the danger is a question of fact, which can turn on the knowledge, age, experience, intelligence and

54/ Id. at 452-63. *Accord, Fisher v. Morrison Homes, Inc.*, 109 Cal.App.3d 131, 138, 167 Cal.Rptr. 133 (1980) (design of pedestrian pathway not a product).

55/ *Rest. Torts 2d* § 402A; *Roysdon v. R.J. Reynolds Tobacco Co.*, 623 F.Supp. 1189, 1191 (E.D. Tenn. 1985), aff'd 849 F.2d 230 (6th Cir. 1988).

56/ *Scoby v. Vulcan-Hart Corp.*, 211 Ill.App.3d 106, 155 Ill.Dec. 536, 569 N.E.2d 1147, 1149 (1991) (danger of open deep-fat fryer obvious), *appeal denied*, 141 Ill.2d 560 (1991); *Hagans v. Oliver Machinery Co.*, 576 F.2d 97, 102 (5th Cir. 1978) (unguarded table saw not unreasonably dangerous); *Brech v. J.C. Penney Co.*, 532 F.Supp. 916,922 (D. S.D. 1982) (danger of exposing cotton clothing to flame is obvious), aff'd, 698 F.2d 332 (8th Cir. 1983).

57/ See *Phipps v. General Motors Corp.*, 278 Md. 337, 363 A.2d 955,959 (1976).

58/ E.g., *Moorer v. Clayton Mfg. Corp.*, 128 Ariz. 565, 627 P.2d 716,719 (1981) *cert. denied*, 454 U.S. 866, 70 L.Ed.2d 167, 102 S.Ct. 328 (1981); *Banks v. Iron Hustler Corp.*, 59 Md.App. 408, 475 A.2d 1243, 1252 (1984) (reversing directed verdict for defendant).

59/ *McMurray v. Deere & Co., Inc.*, 858 F.2d 1436, 1440 (10th Cir. 1988).

training of the driver,^{60/} AVCS manufacturers are unlikely to obtain resolution of the issue short of a full-blown trial. Even states which consider open dangers to be a complete defense do not necessarily follow that rule in cases in which the plaintiff claims the automobile could have been designed to prevent certain ‘enhanced’ injuries.^{61/}

Industry-wide standards, industry custom, or government standards are admissible in some states to show that the product is not unreasonably dangerous, but generally do not automatically absolve the manufacturer of liability.^{62/} Some states have enacted statutes establishing the effect of compliance with governmental standards. Washington state mandates complete absolution of liability if the injury-causing aspect of the product was in compliance at the time of manufacture with a specific mandatory government contract specification relating to design or warnings.^{63/} In Tennessee, the manufacturer or seller's compliance with federal or state statutes or administrative regulations prescribing standards for design, inspection, testing, manufacture, labeling, warning or instruction at the time of manufacture raises a rebuttable presumption that the product was not unreasonably dangerous.^{64/} This statute consequently places a higher burden on the plaintiff to recover on a strict liability theory. Colorado likewise applies a rebuttable presumption in favor of the manufacturer where government codes or standards are followed, but also places a rebuttable presumption in favor of the plaintiff if compliance is not shown.^{65/}

3. Manufacturing And Design Defects

Product liability laws impose liability on manufacturers and sellers if the plaintiff was injured or his property damaged as the result of defects in design or manufacture. When liability is imposed on the basis of negligence, there must be proof that the manufacturer or seller negligently designed or manufactured the product: when strict liability is imposed, proof that the product is unreasonably dangerous typically substitutes for proof of negligence. However, since the difference between the two theories can be more semantic than substantive, they will be discussed together.

Manufacturing defects arise from a failure in the manufacturing process. Depending on the product, manufacturing defects can be minimized by careful quality control methods at factories, and in the case of automated highways, on the highways themselves. Most of the litigation will center on whether a product is defectively designed.

60/ *Banks v. Iron Hustler Corp*, *supra*, 475 A.2d at 1252-53.

61/ *Comacho v. Honda Motor Co.*, 741 P.2d 1240, 1243 (Colo. 1987) *cert. dismissed*, 485 U.S. 901, 99 L.Ed.2d 229, 108 S.Ct. 1067 (1988); *compare McWilliams v. Yamaha Motor Corp USA*, 780 F.Supp. 251, 258 (D. N.J. 1991) (failure to provide leg protection on motorcycle open danger and an absolute defense) *aff'd in part, rev'd in part*, 987 F.2d 200 (3rd Cir. 1992). See discussion of crashworthiness doctrine, *infra*, at p. 14.

62/ E.g., *Dentson v. Eddins & Lee Bus Sales, Inc.*, 491 So.2d 942, 944 (Ala. 1986) (failure of state law to require seat belts in school bus shows lack of design defect); *Thibault v. Sears, Roebuck & Co.*, 118 N.H. 802, 395 A.2d 843,850 (1978).

63/ Rev. Code Wash. § 7.72.050 (1991).

64/ Tenn. Code. Ann. § 29-28-104 (1992).

65/ Colo. Rev. Stat. § 13-21-403 (1993).

Design defects are problems with the design of the product itself, such as the failure to include adequate safety features. Design defects include concealed hazards,^{66/} failure to provide a reasonably required safety device or mechanism, failure to utilize a safer design which was both feasible and available,^{67/} and failure to use material which is suitable for its intended use. A design may be considered defective and the manufacturer negligent even where the danger is open and obvious.^{68/} However, a manufacturer is not required to design the best possible product, nor to design one which is incapable of injury if the very nature of the product is such that the reasonable purchaser does not expect the product to incorporate a particular aspect of design.^{69/} For instance, since motorcycles intentionally provide unencumbered maneuverability, motorcycle manufacturers are not required to design a motorcycle which encloses the legs of the passengers or drivers.^{70/}

Various tests have been formulated to determine whether a product is defectively designed. The consumer expectation test a product is defectively designed if at the time it left the seller's hands it exposes the user or consumer to a risk of harm to an extent beyond that contemplated by the objectively ordinary consumer who purchases the product with the ordinary knowledge about the product's characteristics.^{71/} To determine the reasonable expectations of the ordinary consumer, the court may examine the potential for harm, the knowledge of the consumer, the cost of the product, and the cost and feasibility of correcting the defect.^{72/} While many products fail this test, sometimes no reasonable consumer could have expected a product to have the safety feature at issue. For instance, a 1974 Pinto automobile without airbags was not defectively designed because at that time no reasonable consumer could have expected an airbag to pop out of the dashboard.^{73/} Cigarettes and gasoline are examples of other products which courts have found to meet consumer expectations.^{74/}

66/ Failure to warn the user of the concealed hazard can result in liability. *Hasson v. Ford Motor Co.*, 32 Cal.3d 388, 402-403, 185 Cal.Rptr. 654, 650 P.2d 1171 (1982) (Ford failed to warn users that brake fluid should be replaced frequently) *cert. dismissed*, 459 U.S. 1190, 103 S.Ct. 1167, 75 L.Ed.2d 442 (1983).

67/ Suggested safety devices which are untried or present other hazards may not satisfy this element. *International Harvester Corp. v. Hardin*, 264 Ark. 717, 574 S.W.2d 260 (1978).

68/ For instance, in *Forrest City Machine Works, Inc. v. Aderhold*. 273 Ark. 33, 616 S.W.2d 720, 723 (1981) a manufacturer of a grain cart was held liable for negligent design even though the rotating shaft in which the plaintiffs leg was caught was obviously dangerous.

69/ *Sexton By And Through Sexton v. Bell Helmets, Inc.*, 926 F.2d 331, 336-337 (4th Cir. 1991) (motorcycle helmet manufacturer met consumer expectations) *cert. denied*, ___ U.S. ___, 112 S.Ct. 79, 116 L.Ed.2d 52 (1993).

70/ *McWilliams v. Yamaha Motor Corp. USA*, 780 F.Supp. at 258.

71/ *Rest. Torts 2d* § 402A, comments g and i; *Nettles v. Electrolux Motor AB*, 764 F.2d 1574, 1577 (11 th Cir. 1986)(applying Alabama law).

72/ *Lovell v. Marion Power Shovel Co., Inc.*, 909 F.2d 1088 (7th Cir. 1990)(applying Indiana law).

73/ *Hughes v. Ford Motor Co.*, 677 F.Supp. 76, 85 (D.Conn. 1987)(applying Connecticut law) See also, *Lamke v. Futorian Corp.*, 709 P.2d 684 (Okla. 1985)(ordinary consumer would not expect sofa to be flame retardant).

74/ *Roysdon v. R.J. Reynolds Tobacco Co.*, 623 F.Supp. 1189 (D.Tenn. 1985)(cigarettes): *Donnelly v. Kerr-McGee Refining Corp.*, CCH Prod. Liab. Rptr. 1 13,213 (D.Okl. 1992)(gasoline).

The risk/utility test balances the utility of the product's design with the risk of harm. As explained by the California Supreme Court in the seminal case of *Barker v. Lull Engineering*,^{75/} the risk/utility test permits recovery where the consumer expectation test would not, such as when the ordinary consumer would not know how safe the product could be made. Under the risk/utility test, the trier of fact may consider the gravity of the danger posed by the product's design, the likelihood of injury, the feasibility of a safer design, the financial cost of a safer design, and the adverse consequences to the product and consumer resulting from an alternative design.^{76/} In states such as California the burden of proof shifts to the manufacturer to prove that the product is not defective once the plaintiff makes a *prima facie* showing that the injury was proximately caused by the product.^{77/}

4. Crashworthiness Doctrine

The "crashworthiness doctrine" or "second collision" rule will impact AVCS technology and devices. In the seminal case of *Larsen v. General Motors Corp.*,^{78/} the court recognized that the intended use of an automobile encompassed traffic accidents, and that automobile manufacturers could take certain measures to minimize the injuries caused by such accidents. Most courts today require automobile manufacturers to design their vehicles to avoid enhancement of the occupant's injuries, and manufacturers can be liable for the aggravation of injuries proximately caused by their negligent design failures, even if the defective design does not cause the accident.^{79/} Thus, if automobiles are permitted to travel at 80 miles per hour on automated highways, automobile manufacturers, as well as the manufacturers of the automated highways, may have a duty to render the automobile more crashworthy than at today's lower speeds. Some courts may even find that, if economically feasible, automobile manufacturers will be expected to take greater precautions to prevent or minimize injury from high speed crashes caused by failures in AVCS products.

5. Failure To Warn

In addition to imposing strict liability for manufacturing or design defects, courts find liability if the manufacturer or seller failed to warn adequately of a particular danger in using the product. Failure to warn can sound in either negligence or strict liability. A warning is considered adequate if it is calculated to inform a reasonably prudent user of the product's danger and the extent of that danger. Much litigation has been spawned over the factual question of whether a particular warning was adequate. For instance, in *Goins v. Clorox Co.*,^{80/} one plaintiff died and the other was injured after inhaling fumes caused by pouring both Liquid Plumr and Sani-Flush into a clogged sink. The warning stated: "Do not use with toilet bowl cleaners . . . release of hazardous

75/ 20 Cal.3d 413, 143 225425, Cal.Rptr. (1978).

76/ Id. at 431. See also, *Roach v. Kononen*, 269 Ore. 457, 525 P.2d 125 (1974).

77/ *Barker v. Lull Engineering*, 20 Cal.3d at 431.

78/ 391 F.2d 495, 498 (8th Cir.1968).

79/ E.g., *Volkswagen of America, Inc. v. Young*, 272 Md. 201, 321 A.2d 737 (1974); *Sealey v. Ford Motor Co.*, 499 F.Supp. 475, 478 (E.D. N.C. 1980) (defective gas tank); *Dyson v. General Motors Corp.*, 298 F.Supp. 1064, 1073 (E.D. Pa.1969) (collapsed roof).

80/ 926 F.2d 559 (6th Cir. 1991).

gases may occur.” Although the plaintiffs claimed this language was inadequate because they were not apprised of the particular nature and severity of the risk (death or serious lung injury), the court found as a matter of law that the warning was sufficient.^{81/} By contrast, the sale of heavy equipment which did not include emergency instructions as to the function of the hydraulic brake system, but did warn against coasting downhill, was found not to inform the ordinary user of the specific risk of harm from rolling downhill.^{82/}

Providing warnings in installation manuals or other booklets is risky, as the user may fail to read them, and the courts may absolve the victim of responsibility for the accident. For instance, a Nebraska court declined to bar a suit against a manufacturer of a portable electric heater even though the cause of the accident (the use of an extension cord), was preventable if the plaintiff had bothered to read the instruction manual which warned against using extension cords.^{83/}

In some jurisdictions, there is no duty to warn a user about a particular danger when the user is already aware^{84/}, or is so sophisticated as reasonably to be aware,^{85/} of the danger. This defense most often arises in the context of industrial accidents. The manufacturer contends that the employer knew of the potential hazard, and given its level of sophistication, the employer should bear total responsibility for failing to warn its employees of the danger.^{86/} This defense presumably leaves the injured victim without a civil remedy, as most employers are shielded from liability to employees by workers’ compensation statutes. Commercial vehicle drivers utilizing AVCS might be deemed “sophisticated,” particularly where they should be experienced in avoiding the particular hazard in question. However, ordinary consumers utilizing AVCS are unlikely to be deemed “sophisticated users” obviating any duty to warn. The defense consequently will be of marginal use to AVCS manufacturers.

In sum, the extent to which manufacturers of AVCS will be held liable for failure to warn defies prediction. Manufacturers can retain “human factor” experts to assist them in drafting warnings which adequately apprise users of the risks, assuming the manufacturers properly identify the risks, However, there is no assurance that juries across the country will reach consistent conclusions as to the adequacy of any particular warning. Thus, the only way to assure that AVCS manufacturers will be absolved of liability would be for the federal government to mandate the warning language to be used and preempt states from imposing liability on the basis of failure to warn.

81/ Id. at 561-62.

82/ *Huffman v. Caterpillar Tractor Co.*, 908 F.2d 1470, 1479-80 (10th Cir. 1990).

83/ *Meisner v. Patton Elec. Co.*, 781 F.Supp. 1432, 1442 (D. Neb. 1990).

84/ *Hagans v. Oliver Machinery Co.*, 576 F.2d 97, 102-03 (5th Cir. 1978) (no strict liability where plaintiff knew of risk from sawing knotted wood).

85/ The defense has been applied to both negligence and strict liability claims. *Mozeke v. International Paper Co.*, 933 F.2d 1293, 1297 (5th Cir. 1991) (applying Louisiana law).

86/ E.g., *Singleton v. Manitowoc Co.*, 727 F.Supp. 217, 226 (D. Md. 1989) (crane manufacturer relieved of duty to warn employee of industrial user); *Goodbar v. Whitehead Bros.*, 591 F.Supp. 552, 559 (W.D. Va. 1984) (silica supplier could rely on knowledge of employer to warn employee) *aff'd sub nom.*, *Beale v. Hardy*, 769 F.2d 213 (4th Cir. 1985).

6. Evidentiary Issues

Depending on the jurisdiction, various types of evidence may be admissible to prove a product defect or failure to warn, including expert testimony, the past occurrence of other accidents,^{87/} defects in similar products, and subsequent measures to remedy the problem, such as product recalls, repairs, alterations, or withdrawals of the product.^{88/} Complaints by users of the same product, while generally inadmissible to prove that the incidents complained of actually occurred, may be admissible to show the manufacturer's notice of the alleged defect.^{89/}

One issue upon which the various states do not agree is the admissibility in strict liability cases of evidence of the 'state of the art' at the time the product in question was designed or manufactured. States which permit state of the art evidence to be introduced allow the defendant to offer expert testimony of the feasibility of using other materials, incorporating certain safety devices or alternative designs, or testing at the time of manufacture.^{90/} Other courts have reasoned that an examination of what the defendant "should have" been able to know injects a negligence standard into strict liability actions, and thus have precluded the introduction of such evidence.^{91/}

Whether or not state of the art evidence is admissible, product liability cases typically involve a war of experts, and a failure of the plaintiff to put forward credible expert testimony explaining the alleged defect can be fatal. For instance, in *D'Olier v. General Motors Corp.*,^{92/} the plaintiff's expert presented an untenable theory as to how the steering system on a 1978 Buick Regal supposedly locked as the plaintiff changed lanes, admitting that it was unlikely that foreign parts could have entered into the steering system or that the steering fluid was contaminated during manufacture. Convinced by General Motors' expert that the plaintiffs theory was improbable, the judge entered a judgment in favor of GM, taking the case from the jury. On the other hand, where juries hear from opposing experts, liberal rules permitting expert testimony may result in substantial verdicts. For example, a two million dollar jury award against Chrysler to a young adult rendered a quadriplegic in an automobile accident was affirmed based on the testimony of an expert who had no experience in designing ball

87/ *Braniff Airways v. Curtiss-Wright Corp.*, 411 F.2d 451,453 (2d. Cir. 1969) cert. denied, 396 U.S. 959, 124 L.Ed.2d 423,90 S.Ct.431 (1969).

88/ Most states exclude evidence of remedial measures undertaken after the accident in question as Irrelevant or more prejudicial than probative of the defendants negligence. E.g., *Grenada Steel Industries, Inc. v. Alabama Oxygen Co.*, 695 F.2d 883, 888 (5th Cir. 1983). But the rule is not universal. *Herndon v. Seven Bar Flying Service*, 716 F.2d 1322, 1331 (10th Cir. 1983) cert. denied, *sub nom.*, *Piper Aircraft Corp. v. Seven Bar Flying Service, Inc.*, 466 U.S. 958, 104 S.Ct. 2170, 80 L.Ed.2d 553 (1984).

89/ *Babb v. Ford Motor Co.*, 41 Ohio App.3d 174, 535 N.E.2d 676,67980 (1987) (defective cruise control).

90/ *Norton v. Snapper Power Equip., Div. Of Fuqua Ind., Inc.*, 806 F.2d 1545, 1549 (11 th Cir. 1987) (applying Florida law); *Bruce v. Martin Marietta Corp.*, 544 F.2d 442, 447-48 (10th Cir. 1976); *Reed v. Tiffin Motor Homes, Inc.*, 697 F.2d 1192. 1196-97 (4th Cir. 1982).

91/ E.g., *Carrecter v. Colson Equipment Co.*, 346 Pa.Super. 95, 499 A.2d 326, 330 (1985); *Gelsumino v. E.W. Bliss Co.*, 10 Ill.App.3d 604, 295 N.E.2d 110, 113 (1973).

92/ 145 Ill. App.3d543, 99 Ill.Dec.305, 495 N.E.2d 1040(1986).

joints -- the part of the steering mechanism which supposedly caused the loss of steering control.^{93/}

7. Defenses To Strict Liability And Negligence Claims

a. Contributory And Comparative Negligence

Several decades ago, any amount of contributory negligence on the part of the plaintiff could defeat the claim.^{94/} Today, comparative negligence is the operative standard in most states, whereby plaintiff's recovery is merely reduced by the proportion to which his negligence contributed to the accident.^{95/}

Much confusion has arisen as to whether contributory or comparative negligence should apply to strict liability actions. The Restatement of Torts^{96/} and some states have held that contributory or comparative negligence is not a defense in strict liability actions, since the fundamental principle underlying strict liability is that the fault of either party is irrelevant where a product is sufficiently defective that society wishes to shift the risk to the party best able to bear the cost -- the manufacturer.^{97/} Other states, by case law or statute, have permitted comparative negligence to be asserted as a defense in strict liability actions, if the plaintiff's negligent use of the product was a substantial cause of the accident.^{98/} Under this theory, the fact that a thirteen year old dirt bike rider crashed head-on into another bike rider because he looked away was not a defense because there was no evidence that he negligently used the helmet which the defendant manufactured.^{99/}

As a practical matter, comparative negligence may be a useless defense in product liability actions arising from AVCS products. Where a defect in an automated highway system causes an accident, there may be no negligence possible on the part of the driver if the system is so automated that the driver has no control over the vehicle. On the other hand, collision alert warning systems, lane departure warning systems, intersection hazard warnings, and vision enhancement systems merely augment the

93/ *Caprara v. Chrysler Corp.*, 52 N.Y.2d 114,436 N.Y.S.2d 251,417 N.E.2d 545, 548-49 (1981).

94/ *Hinkamp v. American Motors Corp.*, 735 F.Supp 176 (E.D. N.C. 1989) (contributory negligence bars recovery), *aff'd*, 900 F.2d 252 (4th Cir. 1990).

95/ Thus, if the plaintiff is deemed to be 25 percent at fault, his judgment is reduced by one quarter. However, comparative negligence standards vary across the country and take three primary forms: pure comparative negligence, modified comparative negligence, and slight-gross comparative negligence. A detailed description of each of these forms is beyond the scope Of this paper.

96/ Rest. Torts 2d § 402A, comment n.

97/ E.g., *Dillinger v. Caterpillar, Inc.*, 959 F.2d 430, 437 (3d Cir. 1992) (applying Pennsylvania law); *McDonald v. General Motors Corp.*, 784 F.Supp. 486,497 (M.D. Tenn. 1992) (applying Tennessee law).

98/ E.g., Colo. Rev. Stat. § 13-21-406 (permitting trier of fact to reduce damages in proportion to plaintiff's comparative fault): *Fiske v. MacGregor, Div. of Brunswick*, 464 A.2d 719,727 (R.I. 1983); *Kathios v. General Motors Corp.*, 862 F.2d 944,947 (1 st Cir. 1988) (applying New Hampshire law).

99/ *Sexton By And Through Sexton v. Bell Helmets. Inc.*. 926 F.2d 331,339 (4th Cir. 1991), cert. denied _____ U.S._____,112 S.Ct. 79, 116 L.Ed.2d 52 (1991).

drivers knowledge of the hazards. A failure to react with appropriate defensive maneuvers and reduction in speed is likely to be evidence of contributory or comparative negligence. In fact, in some situations the existence of properly functioning AVCS warning systems in a car will be evidence that the driver was apprised of a hazard and failed to take appropriate measures to avoid an accident.

b. Assumption Of The Risk

The common law recognized a defense where the plaintiff, with knowledge of the defect in the product and the inherent risk, nevertheless assumes the risk, voluntarily proceeds to utilize the defective product and is injured. Unlike contributory negligence, this “assumption of risk” defense involves the subjective knowledge of the plaintiff.^{100/} Since comparative negligence became the predominant standard, the viability of assumption of risk as a defense to negligence actions has been in question.^{101/} Some states have considered the defense merged into that of comparative negligence.^{102/} Even in those states which continue to employ the defense,^{103/} it is unlikely to apply to automated cars or highways because few persons are likely to use a defective product which has complete control over the vehicle.

c. Product Modification Or Misuse

The manufacturer, distributor, or retailer of AVCS products generally will not be liable for injury caused by unforeseeable misuse, intentional misuse, or use in violation of safety standards. For instance, there might not be liability for an accident where the driver purposefully disconnects his collision avoidance system.^{104/}

However, misuse is not a defense unless it is both the proximate cause of the accident and unforeseeable. Thus, Hertz Corp. was not absolved of liability where the plaintiff overheated the car by driving with the emergency brake engaged. Since warning lamps which would advise the driver of the hazard were available, the defendant knew of this possible misuse.^{105/} Similarly, failure to wear a seat belt is not necessarily misuse of an automobile because such conduct is reasonably foreseeable.^{106/} This is particularly an issue for AVCS, because the manufacturer will

100/ *Kuiper v. Goodyear Tire & Rubber Co.*, 207 Mont.37, 673 P.2d 1208, 1220 (1983).

101/ E.g., Conn. Gen. Stat. § 52-572h (abolishing defense): *Salinas v. Vierstra*, 107 Idaho 984,695 P.2d 369, 374 (1985) (not an absolute bar to recovery unless governed by express contract); compare N.C. Gen. Stat. § 99B-4(2) and S. C. Code § 15-73-20 (permitting defense). See, also, *Milwaukee Elec. Tool Corp. v. Superior Court*, 15 Cal.App.4th 547, 19 Cal.Rptr.2d 24 (1993) (applying ‘secondary’ assumption of risk to product liability actions); *Rutter v. Northeastern Beaver County School District*, 496 Pa. 590,437 A.2d 1198, 1209 (1981).

102/ *Briney v. Sears, Roebuck & Co.*, 782 F.2d 585, 589 (6th Cir. 1986) (applying Ohio law).

103/ E.g., *Austin v. Raybestos-Manhattan, Inc.*, 471 A.2d 280,286 (Me. 1984).

104/ See, *Muniga v. General Motors*, 102 Mich.App. 755, 762, 302 N.W.2d 565 (1980) (upholding jury verdict for GM).

105/ *Knapp v. Hertz Corp.*, 59 Ill.App.3d 241, 17 Ill.Dec.65, 375 N.E.2d 1349, 1355 (1978).

106/ *Melia v. Ford Motor Co.*, 534 F.2d 795, 799-800 (8th Cir. 1976); *LaHue v. General Motors Corp.* 716 F.Supp. 407,413-14 (W.D. Mo. 1989); *Ellithorpe v. Ford Motor Co.*, 503S.W.2d 516, 521 (Tenn. 1973).

have to guard against-an array of foreseeable misuses of the automobile, particularly while on “auto pilot” on an automated highway.

The manufacturer or seller will not be strictly liable if the product was substantially modified by the user or a third party, provided that alteration caused the accident in question and was not reasonably foreseeable.^{107/} For example, General Motors obtained a directed verdict in its favor in an automobile accident case where the evidence showed that the plaintiff and other previous owners of the Chevrolet in question had replaced the lug nuts and wheels of the car, absolving General Motors from liability for injuries sustained when one of the wheels flew off the vehicle.^{108/}

Consequently, if a driver removes a safety feature from an automated steering or braking mechanism, or utilizes the automated steering after disengaging collision alert warnings or collision avoidance control systems, strict liability might not attach to AVCS. But since it is difficult to envision that an automated highway system would give the driver any ability to modify the control devices, this defense is unlikely to apply to accidents caused by any malfunctions in that system.

B. Breach Of Express And Implied Warranty

1. Express Warranty

Express warranties are those oral or written promises made by the manufacturer or the seller of goods that the goods shall conform to an affirmation or promise which became a part of the basis of the bargain.^{109/} If injury results from the product’s failure to conform to the express promise, the injured party (the buyer, another user, a third party beneficiary) may sue for a contractual breach of warranty. While this theory is technically one of contract, it is typically coupled with claims of negligence and strict liability. Affirmation of the safety of a product is an express warranty which may subject the manufacturer or seller to an action for breach of that warranty in addition to claims of negligence or strict liability.^{110/} A design defect may also constitute a breach of an express warranty if the manufacturer or seller warranted that the product was free of defects.^{111/} Express warranties may be created by an explicit promise, an

107/ *Rest. Torts 2d* § 401 A(l)(b).

108/ *Cox v. General Motors Corp.*, 514 S.W.2d 197,200 (Ky. App. 1974).

109/ U.C.C. § 2-313(l)(a). Some states also require a showing that the buyer purchased the goods in question in reliance on the express warranty. *Fogo v. Curter Laboratories, Inc.*, 68 Cal.App.3d 744, 760, 137 Cal.Rptr. 417 (1977); *Overstreet v. Norden Laboratories, Inc.*, 669 F.2d 1286, 1290 (6th Cir. 1982) (applying Kentucky law). Compare *Winston Industries, Inc. v. Stuyvesant Ins. Co.*, 55 Ala.App.525, 317 So.2d 493, 496 (1975) (not requiring reliance). An injured non-purchaser generally only has to show reliance by the purchaser. *Anderson v. Heron Engineering Co.*, 198 Colo. 391, 604 P.2d 674, 676 (1979).

110/ *Hauter v. Zogarts*, 14 Cal.3d 104, 115, 120 Cal.Rptr 681, 534 P.2d 377 (1975) (golf training device purported to be totally safe); *Collins v. Uniroyal, Inc.*, 126 N.J. Super. 401, 315 A.2d 30, 34 (1973) (statement that a tire was guaranteed against blow out constituted express warranty), *aff'd*, 64 N.J. 260,315 A.2d 16 (1974).

111/ *Blue v. United Air Lines, Inc.*, 98 N.Y.S.2d 272 (1950).

advertisement, a description, or display of a sample that possesses certain characteristics.^{112/}

Of all the potential theories of liability, breach of express warranty is the least likely to inhibit development of AVCS. The private sector entities who choose to market AVCS can control what warranties they make, and thus can avoid warranting a feature or safety level which they will breach.

2. Implied Warranties

In addition to express warranties, the law imposes certain implied warranties which may expose sellers of IVHS products to liability. The implied warranty of merchantability and the implied warranty of fitness for a particular purpose, while originally based on contract, are now available to most victims due to the relaxation of strict privity requirements.

a. Implied Warranty Of Merchantability

This warranty covers the buyer's reasonable expectation that goods purchased from a merchant will be free of significant defects and will perform in the way goods of that kind should perform.^{113/} It arises automatically in every sale of goods by one who is a merchant in those goods,^{114/} and is breached if the product is defective to a normal buyer making ordinary use of the product, causing injury to a person or to property.^{115/} Unlike a claim for breach of express warranty, no reliance on the implied warranty is necessary.^{116/} Goods must be fit for their ordinary purpose, which means they should not break frequently or be unsafe for normal foreseeable uses.^{117/} Design defects^{118/} and failures to warn, particularly in the instruction manual or in advertisements, also can form the basis for a breach of implied warranty claim.^{119/} In contrast to a strict liability action, the plaintiff usually need not show that the product was unreasonably dangerous.^{120/}

Manufacturers and merchants can disclaim the warranty of merchantability if they do so at the time of sale and the disclaimer is sufficiently conspicuous.^{121/} For instance, in *H.B. Fuller Co. v. Kinetic Systems, Inc.*,^{122/} a warranty disclaimer printed in

112/ E.g., *Neville Constr. Co. v. Cook Paint And Varnish Co.*, 671 F.2d 1107 (8th Cir. 1982); *Transamerica Oil Corp. v. Lynes, Inc.*, 723F.2d 758, 762 (10th Cir. 1983).

113/ U.C.C. §2-314.

114/ *Abraham v. Volkswagen of America, Inc.*, 795 F.2d 238, 249 n.10 (2d Cir. 1986).

115/ E.g., *Peterson v. Bendix Home Systems, Inc.*, 318 N.W.2d 50, 53 (Minn. 1982).

116/ *Daniel v. Ford Motor Co.*, 581 F.Supp. 728,731 (D. N.M. 1984).

117/ E.g., *Huebert v. Federal Pacific Electric Co.*, 208 Kan. 720, 494 P.2d 1210, 1214 (1972);

Bollmeier v. Ford Motor Co., 130 Ill.App.2d 844, 265 N.E.2d 212,216 (1970).

118/ *Ethicon, Inc. v. Parten*, 520 S.W.2d 527, 532 (Tex. App. 1975).

119/ *Westric Battery Co. v. Standard Electric Co.*, 482 F.2d 1307, 1314 (10th Cir. 1973); *Reddick v. White Consolidated Industries, Inc.*, 295 F.Supp. 243, 250 (S.D. Ga. 1968).

120/ See *First Nat. Bank v. Regent Sports Corp.*, 619 F.Supp. 820,822 (N.D. Ill. 1985); Prosser, *The Fall of the Citadel (Strict Liability To The Consumer)*, 50 Minn. L. Rev. 791,804 (1966).

121/ *Hunter v. Texas Instruments, Inc.*, 798 F.2d 299, 303 (8th Cir. 1986).

122/ 932 F.2d 681, 689 (7th Cir.1991).

capital letters on a sales proposal was deemed sufficiently conspicuous to be enforceable. By contrast, a warranty also written in capital letters in seven point unbolded type was too inconspicuous to be enforced.^{123/}

Although some have likened the breach of the implied warranty of merchantability to a strict liability cause of action, the implied warranty is less likely to impact the growth of IVHS. Manufacturers and sellers of AVCS can disclaim any warranty by so informing buyers in capital letters and bold type, possibly requiring the consumer to sign or initial that the consumer read the disclaimer. The only arena in which such disclaimers are unlikely is that of the automated highways, where the opportunity to sign such a waiver probably will be nonexistent. In this arena, Congress can, if it desires, limit liability by legislation.

b. Implied Warranty Of Fitness For A Particular Purpose

The implied warranty of fitness requires proof that (1) the seller was informed of the purpose for which the article was purchased, (2) the buyer relied on the seller's skill and judgment, (3) the sold good was defective and unfit for that particular purpose, and (4) this defect proximately caused the plaintiff damage.^{124/} Should this implied warranty apply, it is no defense that the seller was unaware of the product's defect and could not have discovered it or corrected it.^{125/} However, this risk can be allocated to the manufacturer by contractual indemnity provisions.

Unlike the warranty of merchantability, this implied warranty requires that the buyer purchase the good for a particular, as opposed to an ordinary, purpose.^{126/} It consequently should be of limited application to sale of AVCS products, which generally will be purchased for their ordinary use, such as to avoid collisions. However, if a new car purchaser has the option of buying a collision avoidance control or night vision enhancement feature, then this warranty might apply if the seller represents the option as being fit to solve the buyer's particular concern.

c. The Elusive Privity Requirement

Whether privity of contract is a necessary element of a breach of an implied warranty claim depends on the jurisdiction. The Uniform Commercial Code provides three alternatives, varying in their restrictivity. The majority of states have adopted Alternative A, which extends a seller's express or implied warranty to any natural person who is in the household of the buyer or a guest in his home if it is reasonable to expect such person to be affected by the goods.^{127/} The precise

123/ *Sierra Diesel Injection Service, Inc. v. Burroughs Corp., Inc.*, 890 F.2d 108, 114 (9th Cir. 1989). Compare, *Richard O' Brien Companies v. Challenge-Cook Bros., Inc.*, 672 F.Supp. 466,470 (D. Colo. 1987) (unbolded type deemed conspicuous).

124/ E.g., *E.I. Du Pont de Nemours & Co. v. Dillaha*. 280 Ark. 477, 659 S.W.2d 756, 757-58 (1983); *Scittarelli v. Providence Gas Co.*, 415 A.2d 1040, 1046 n.4 (R.I. 1980); U.C.C. § 2-315.

125/ *Ontai v. Straub Clinic & Hospital, Inc.*, 66 Haw. 237, 659 P.2d 734, 744-45 (1983).

126/ U.C.C. § 2-315, comment 2. See, *Weir v. Federal Ins. Co.*, 811 F.2d 1367, 1393 (10th Cir. 1987) (use of clothes dryer to dry clothes is its ordinary rather than particular purpose).

127/ E.g., Ariz. Rev. Stat. § 47-2318; Ill. Compiled Stat. ch. 810 § 512-318; Penn. Stat. Tit. 13 §2318.

meaning of this language, however, has been the subject of much dispute, and accordingly a hodgepodge of rules has developed. Some states have abolished the requirement that the injured party sue the seller for what is essentially a manufacturing defect,^{128/} but others still preclude suits against the manufacturer.^{129/}

In states where privity of contract is a required element, guests of the buyer who may be injured in an automobile related accident as the result of a malfunction in IVHS products may be unable to obtain redress under this theory of liability. However, since the modern trend is against requiring privity, breach of warranty claims are likely to surface if IVHS products result in injuries.

C. False Or Negligent Advertising

In addition to product liability actions, manufacturers and sellers of AVCS could face other types of tort claims, including false or negligent advertising, fraud and negligent misrepresentation. Manufacturers and sellers of AVCS products may be liable in tort if their advertisements are false or misleading.^{130/} Section 4028 of the Restatement of Torts Second provides as follows:

One engaged in the business of selling chattels who, by advertising, labels, or otherwise, makes to the public a misrepresentation of a material fact concerning the character or quality of a chattel sold by him is subject to liability for physical harm to a consumer of the chattel, caused by justifiable reliance upon the misrepresentation, even though (a) it is not made fraudulently or negligently, and (b) the consumer has not bought the chattel from or entered into any contractual relation with the seller.^{131/}

Under the Restatement rule even an innocent "misrepresentation" could give rise to liability. The Restatement imposes strict liability for physical harm to a consumer resulting from a misrepresentation about the character or quality of the product sold, and it has been adopted in several jurisdictions.^{132/} The rationale "is that

128/ *Hemphill v. Sayers*, 552 F.Supp. 685, 690 (S.D. Ill. 1982) (applying Illinois law); *Reid v. Volkswagen of American, Inc.*, 512 F.2d 1294 (6th Cir. 1975) (applying Michigan law).

129/ *Lamb v. Georgia-Pacific Corp.*, 194 Ga.App. 848,392 S.E.2d 307,309 (1990) (no privity between plaintiff and manufacturer); *Eastern Refractories Co, Inc.. v. Forty Eight Insulations, Inc.*, 658 F.Supp. 197,201 (S.D. N.Y. 1987) (applying Florida law to require privity).

130/ This paper will only address false advertising claims that are brought by consumers or buyers of products and not those claims that could be brought by a competitor for unfair competition (e.g., under the Lanham Act) or competitive injury resulting from false advertising. See, e.g., Lanham Trademark Act of 1946, § 43(a), 15 U.S.C. § 1125(a).

131/ See *Baughn v. Honda Motor Co.*, 107 Wash.2d 127,727 P.2d 655,667 (1986) (discussing elements of cause of action).

132/ See, e.g., *Hauter v. Zogarts*, 14 Cal.3d 104, 116, 120 Cal.Rptr. 681, 534 P.2d 377 (1975); *American Safety Equipment Corp. v. Winkler*, 640 P.2d 216,222 (Colo. 1982); *Rozny v. Marnul*, 43 Ill.2d 54, 250 N.E.2d 656, 661 (1969); *Ritler v. Michael Reese Hospital*, 92 Ill.App.3d 739, 47 Ill. Dec. 942,415 N.E.2d 1255,1258 (1980); *Klages v. General Ordinance Equipment Corp.*, 240 P.A. Super. 356,367 A.2d 304,310 (1976); *Crocker v. Winthrop Laboratories, Division of Sterling Drug, Inc.*, 514 S.W.2d 429,431 (Tex. 1974). This paper will focus on the general rule adopted by the Restatement rather than any specific state statutes. On the effect of state false advertising statutes, see, e.g., *Wright v. Carter Products, Inc.*, 244 F.2d 53, 61-62 (2d Cir. 1957).

losses to society created or caused by an enterprise, or, more simply, by an activity, ought to be borne by that enterprise or activity."^{133/}

Not only is neither negligence nor fraud required, but, unlike normal strict liability, false advertising does not require a defective condition which renders a product unreasonably dangerous. However, there must be a misrepresentation about the character or quality of the product that causes physical injury. In essence, it is a public assurance of quality through advertising or other means that renders a manufacturer or seller liable.^{134/}

AVCS will involve the introduction of new products into the marketplace, and consumers will have little information about those products except what is provided by the manufacturers and sellers. Since manufacturers and sellers clearly will have superior knowledge, a rule imposing virtually strict liability for certain misrepresentations serves the important function of making sure only truthful information is disseminated to the public. This is particularly important in the AVCS context because of the potential for serious problems from misinformation.

The liability contemplated by the Restatement applies to manufacturers, wholesalers, retailers and distributors who actually sell the product.^{135/} Generally, a seller will be liable even though the consumer has not bought the product in question from that seller or entered into a contractual arrangement with the seller.^{136/} In the AVCS context, this will extend liability to those consumers who actually purchase a product and those who may be expected to use it.

A warning about a product may have the effect of nullifying an alleged misrepresentation and relieving a manufacturer from liability, although warnings are not required.^{137/} A seller's disclaimer of liability in a sale contract will not, however, limit liability for claims of misrepresentation about the product's character and quality.^{138/}

The alleged misrepresentation must be made to the public at large with the intent to induce the public to buy the product. Misrepresentations can be made in advertisements, brochures, labels, leaflets or statements about the product, whether written or oral.^{139/} Even implicit representations may result in liability.^{140/} Statements

133/ 2 *American Law of Products Liability* 3d, §26: 1 (1987); *Werkmeister v. Robinson Dairy, Inc.*, 669 P.2d 1042, 1045 (Colo. App. 1983).

134/ See, Sales, *The innocent Misrepresentation Doctrine: Strict Tort Liability Under Section 4028*, 16 *Houston L. Rev.* 239, 252 (1979).

135/ *Rest. Torts* 2d § 4026, comment e; see *Harmon v. National Automotive Parts Assoc.*, 720 F.Supp. 79, 82 (N.D. Miss. 1989) (applying Mississippi law, a nonprofit corporation that did not design, manufacture, sell or distribute car batteries held not liable).

136/ See *Hauter v. Zogarts*, 14 Cal.3d at 114-15; *Rozny v. Marnul*, 250 N.E.2d at 660; see, also, *Rest. Torts* 2d § 4028, comment j.

137/ *Rest. Torts* 2d § 4026.

138/ *Agristor Leasing v. Saylor*, 803 F.2d 1401,1407 (6th Cir. 1986), modified, 872 F.2d 1028 (6th Cir. 1986).

139/ See, e.g., *Rest. Torts* 2d § 4028, comment h.

140/ See *Smith v. American Motor Sales Corp.*, 215 Ill.App.3d 951, 159 Ill. Dec. 477, 576 N.E.2d 146, 152 (1991).

made by sales people to individual buyers may not fall within the ambit of the Restatement, however, because it requires representations to the public at large.^{141/} Also, alleged representations inferred from nondisclosures of fact, such as the absence of a warning, will not create liability.^{142/}

In order for liability to arise under section 402B there must be a misstatement concerning a material fact about the character and quality of the product. Thus, the misrepresentation must be important to the consumer and one on which the consumer might be expected to rely in making the purchase.^{143/} In general, a fact is material "if a reasonably prudent person under the circumstances would attach importance to it in determining the proper course of action."^{144/} A representation that it was unnecessary to have another person present in the cab of a truck while a hydraulic aerial platform on the truck was being operated was held material.^{145/}

The Restatement rule does not apply, however, to "sales talk" or 'puffing' on the part of the seller. For instance, a representation in a helicopter company's brochure that a buyer was "assured of a safe, dependable helicopter" was puffing and not a statement of material fact.^{146/} Also, representations that a bus service^{147/} was "outstanding" and an advertisement describing a brake-lock device as offering "unprecedented safety" were mere puffery.^{148/} On the other hand, courts are reluctant to find that a statement is mere puffing where there is a great potential for harm from a product or where the one making a statement has special knowledge which is relied upon. In those circumstances, there may be a higher standard of care.^{149/} Because AVCS products may carry a potential for great harm if misused, courts may in practice demand that manufacturers and sellers exercise great care in making representations.

The Restatement rule only applies to physical harm to a consumer of a product who has used the product and suffered physical injuries.^{150/} It does not apply to property damage or economic losses from innocent misrepresentations.^{151/}

141/ *Rest. Torts 2d* § 402B, caveat 1.

142/ See, e.g., *Sherk v. Daisy-Heddon* 285 Pa. Super. 320, 427 A.2d 657, 664-65 (1981), *rev'd on other grounds*, 498 Pa. 594, 450 A.2d 615 (1981); for a list of different factual situations in which misrepresentations of material facts have been shown or not shown, see, *2 American Law of Products Liability 3d, supra*, at § 2611.

143/ *Hoffman v. A.B. Chance Co.*, 346 F.Supp. 991, 992 (M.D. Pa. 1972); *Toliver v. General Motors Corp.*, 482 So.2d 213, 214 (Miss. 1985).

144/ *2 American Law of Products Liability 3d, supra*, § 26:11; *Hawkinson v. A.H. Robbins Co., Inc.*, 595 F.Supp. 1290, 1310 (D.C. Colo. 1984).

145/ *Hoffman v. A.B. Chance Co., Inc.*, 346 F.Supp. at 992.

146/ *Berkebile v. Brantly Helicopter Corp.*, 461 Pa. 83, 337 A.2d 893, 903 (1975).

147/ *Collins v. Wayne Corp.*, 621 F.2d 777,786 (5th Cir. 1980) (applying New Mexico law).

148/ *Hoffman v. A. B. Chance Co.*, 339 F.Supp. 1385,1388 (M.D. Pa. 1972).

149/ See, e.g., *Kociemba v. G.D. Searle & Co.*, 707 F.Supp. 1517, 1525 (D.Minn. 1989) (finding that "Pharmaceutical salesmen should not have as much leeway in 'puffing' their wares as would a used car salesman").

150/ See, e.g., *Jones & Laughlin Steel Corp. v. Jones-Manville Sales Corp.*, 626 F.2d 280,288 (3d Cir. 1980) (applying Illinois law): *Walker Truck Contractors, Inc. v. Crane Carrier Co.*, 405 F.Supp. 911 (E.D. Tenn. 1975) (no liability under section 4028 under Tennessee law).

151/ See *Moorman Manufacturing Co. v. National Tank Co.*, 91 Ill.2d 69, 61 Ill. Dec. 746,435 N.E.2d 443. 453 (1982) (economic loss not recoverable under theory of innocent misrepresentation); see

However, economic losses may be recoverable based on a theory of negligent misrepresentation.^{152/} The Restatement does not take a position about whether recovery is permitted where physical harm is caused to an individual who is not a consumer of the product (e.g., a passenger in another vehicle who is injured).^{153/}

As with negligence, proximate cause is required for liability.^{154/} Thus, a plaintiff was not entitled to a judgment notwithstanding the verdict in a case involving a plane crashing into a mountain based on an allegation that a chart allegedly misrepresented its accuracy since the plane's crew misused the chart and pilot error contributed to the crash.^{155/} A manufacturer, however, may be liable for representing that a product is safe even if its danger was not foreseen.^{156/}

In order for the Restatement rule to apply, there must be justifiable reliance upon a misrepresentation.^{157/} If the misrepresentation does not induce action, if the plaintiff did not pay attention to it, or if the misrepresentation is not known to the plaintiff, there will be no liability.^{158/} The representation need only be a substantial factor in the inducement, not the sole factor.^{159/} The issue in determining whether there is justifiable reliance is not what the seller intended, but what the consumer reasonably believed under the circumstances.^{160/} However, plaintiffs must use reasonable knowledge and intelligence in interpreting the represented facts. Actual knowledge about the quality or condition of a product may defeat justifiable reliance on representations.^{161/} Thus, a police officer could not justifiably rely upon a representation that the helmet he was wearing could be used as a motorcycle helmet, where he knew that the helmet had been used only for riot control and that another helmet was used for motorcycle duties.^{162/}

The Restatement rule provides that the required reliance does not necessarily have to be that of the consumer who is injured.^{163/} The reliance "may be

also Nelson Distrib., Inc. v. Stewart-Warner Indus. Balancers, Div. of Stewart-Warner Corp., 808 F.Supp. 684, 686 (D. Minn. 1992) (applying Minnesota law).

152/ See, e.g., *Rozny v. Marnul*, 250 N.E.2d at 660; see *Rest. Torts* 2d § 552; see also, *discussion, infra*, at 28-31.

153/ *Rest. Tort* 2d § 4028, caveat 2.

154/ See, e.g., *Hollebeck v. Selectone Corp.*, 131 Ill.App.3d 969, 87 Ill. Dec. 44, 476 N.E.2d 746, 747 (1985); *Benco Plastics, Inc. v. Westinghouse Electric Corp.*, 387 F.Supp. 772, 786 (E.D. Tenn. 1974) (applying Tennessee law).

155/ *Times Mirror Co. v. Sisk*, 122 Ariz. 174, 593 P.2d 924,929 (1978).

156/ See, e.g., *Crocker v. Winthrop Laboratories*, 514 S.W.Pd at 432.

157/ *Rest. Tort* 2d § 402B, comment f.

158/ *Id.*, comment j; see, e.g., *Baughn v. Honda Motor Co.*, 727 P.2d at 668 (no evidence purchaser of minibike relied on alleged misrepresentations); *Haynes v. American Motors Corp.*, 691 F.2d 1268, 1271 (8th Cir. 1982) (no evidence plaintiff relied on representations and advertisement regarding a Jeep); *Franks v. National Dairy Products Corp.*, 282 F.Supp. 528, 533 (W.D. Tex. 1968) (plaintiff did not rely on brochures or other written materials), *aff'd*, 414 F.2d 682 (5th Cir. 1969).

159/ *Rest. Torts* 2d § 4028, comment j.

160/ See, e.g., *Hauter v. Zogart*, 14 Cal. 3d at 114.

161/ See *American Safety Equipment Corp. v. Winkler*, 840 P.2d at 223.

162/ *Id.*

163/ *Rest. Torts* 2d § 4028, comment j.

that of the ultimate purchaser of the chattel, who because of such reliance passes it on to the injured consumer who is ignorant of the misrepresentation. Thus, a husband who buys an automobile in justifiable reliance upon statements concerning its brakes, and permits his wife to drive the car, supplies the element of reliance, even though the wife in fact never learns of the statements."^{164/}

The potentially very broad liability arising from the Restatement rule will require manufacturers and sellers of AVCS products to be very careful when making representations about the safety of products, either generally or for specific purposes. If an injury results from a misrepresentation about the product, even if the misrepresentation is innocent, the manufacturer or seller will be liable.

D. Fraud Or Misrepresentation

Manufacturers and sellers of AVCS products also may be held liable for fraud if their representations about the condition or safety of a product are untrue or actively conceal known dangers.^{165/} Generally, in fraud actions and in product liability actions based on fraud, plaintiffs must prove that: (1) defendant made a false representation;^{166/} (2) the representation was made with scienter or knowledge of the falsity of the representation; (3) the representation was made with an intention to induce the plaintiff to act or refrain from action in reliance on the representation;^{167/} (4) the plaintiff justifiably relied on the representation;^{168/} and (5) the plaintiff has suffered damage.^{169/}

Fraud is more difficult to prove than negligence or strict liability since the elements usually must be affirmatively established by the higher standard of clear and convincing proof^{170/} rather than merely by a preponderance of the evidence.^{171/} While fraud cannot be shown by pointing to circumstances that raise a mere suspicion of fraud, fraud may be shown by circumstantial evidence demonstrating that the defendant had a motive to mislead and that the defendant's conduct before and after the misrepresentation showed an intent to look after his or her own interests.^{172/}

164/ Id.

165/ See, e.g., *Toole v. Richardson-Merrell, Inc.*, 251 Cal.App.2d 669, 706-707, 60 Cal.Rptr. 396 (1967) (concealment of drugs' side effects).

166/ See *BASKO v. Sterling Drug, Inc.*, 416 F.2d 417, 426 (2d Cir. 1969) (representations about a drug' s side effects).

167/ See *Chambers v. G.D. Searle & Co.*, 441 F.Supp. 377,379 (D. Md. 1975), *aff'd*, 567 F.2d 269 (4th Cir. 1975).

168/ See *Wennerholm v. Stanford University School of Medicine*, 20 Cal.2d 713,717, 128 P.2d 522 (1942).

169/ See *Starling v. Seaboard C.L.R. Co.*, 533 F.Supp. 183, 192-93 (S.D. Ga. 1962).

170/ See, e.g., *Beeck v. Aquaslide 'N' Dive Corp.*, 350 N.W.2d 149, 155 (Iowa 1964); *Borowicz v. Chicago Mastic Co.*, 367 F.2d 751, 760 (7th Cir. 1966).

171/ See, e.g., *Price v. Highland Community Bank*, 932 F.2d 601, 604 (7th Cir. 1991) (applying Illinois law).

172/ See *Brochu v. Ortho Pharmaceutical Corp.*, 642 F.2d 652,662 (1st Cir. 1961) (applying New Hampshire law.)

Probably the most difficult element to prove in a fraud action is scienter—the manufacturers or seller’s knowledge that its representation was false or that the representation was made with a reckless disregard of its truth or falsity.^{173/} Although an innocent false statement mistakenly made will not establish intent to defraud, if it is recklessly made, it may imply an intent to defraud.^{174/}

Privity is not required in a fraud action based on misrepresentations by a seller or manufacturer since fraud is an exception to the privity requirement.^{175/} A seller or manufacturer of an AVCS product, who knows or has reason to know that it is likely to be dangerous when used and who makes representations regarding the product’s safety, will be liable both to users of the product who purchase it in good faith reliance upon the representations of the seller or manufacturer and to others who are injured as a result of the failure to make and deliver the product in a safe condition.^{176/} Even representations made to the public at large or to a particular class may, if made with the intent to induce reliance, create liability to those who rely on the misrepresentations.^{177/}

As with false advertising, statements deemed to be “puffing” are not actionable fraud in a product liability case as they are considered to be mere statements of opinion or predictions upon which the consumer has no right to rely.^{178/} A representation may be construed as fact, however, where the speaker has superior knowledge about the subject matter of the representations and the other party is in a position where he or she may reasonably rely on that superior knowledge or special information.^{179/} As with false advertising, since AVCS will involve unfamiliar products, consumers are likely to rely on the special knowledge of manufacturers and sellers who make representations about their products.

A manufacturer or seller of an AVCS product may face liability for fraud for providing inadequate warnings where there are known safety hazards.^{180/} Also, if the

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- 173/ *Chanin v. Chevrolet Motor Co.*, 89 F.2d 889, 891 (7th Cir. 1937); *Malensky v. Mobay Chemical Corp.*, 104 Or.App. 161, 799 P.2d 683, 686-87 (1990). Fraud claims not only impugn a defendant’s conduct, but can also give rise to claims for exemplary and punitive damages. See, e.g., Cal. Code Civ. Proc. § 377.
- 174/ *Aaron v. Hampton Motors, Inc.*, 240 S.C. 26, 124 S.E.2d 565, 588 (1962); *Beeck*, **350 N.W.2d** at 155.
- 175/ *Holmes v. Wegman Oil Co.*, 492 N.W.2d 107, 112 (S.D. 1992); *Quirici v. Freeman*, 98 Cal.App.2d 194, 201-202, 219 P.2d 897 (1950) (privity not required where a manufacturer of a product knew that the product would not perform as intended); *Agristor Leasing v. Saylor*, 803 F.2d 1401, 1410 (6th Cir. 1966).
- 176/ See, e.g., *Driekosen v. Black, Sivalls & Bryson, Inc.*, 158 Neb. 531, 64 N.W.2d 88, 98 (1954).
- 177/ See *Starling v. Seaboard C.L.R. Co.*, 533 F.Supp. 163, 193 (S.D. Ga. 1962) (applying Georgia law).
- 178/ *Holley v. Central Auto Parts*, 347 S.W.2d 341,343 (Tex.Civ.App. 1961); *Fincher v. Robinson Brothers Lincoln-Mercury, Inc.*, 583 So.2d 256,259 (Ala. 1991) (statement that new car would meet buyer’s expectations was mere puffery).
- 179/ *Toole v. Richardson-Merrill, Inc.*, 251 Cal.App.2d 689, 706, 60 Cal.Rptr. 398 (1967) (involving drug advertisements and written materials given to doctors); *Rowan County Board of Education v. United States Gypsum Co.*, 332 N.C. 1, 416 S.E.2d 648,661 (1992) (representations involving asbestos products).
- 180/ See, e.g., *Hoffman v. Sterling Drugs, Inc.*, 465 F.2d 132, 141-42 (3d Cir. 1973).

manufacturer's or seller's representations have the effect of contradicting warnings, there may be liability for fraud.^{181/} AVCS manufacturers and sellers consequently must clearly warn about any known safety hazards and must make sure that those warnings are uncontradicted by other materials supplied to the ultimate consumer of the product. A dealer may also owe a duty to discover defects in unsealed products where the defect would come to the attention of a reasonably prudent dealer and the dealer represents that the product is safe.^{182/}

Typically, manufacturers and sellers are not under any obligation to disclose all material facts about a product absent a fiduciary relationship or some other relationship creating a duty to speak, which would render silence akin to fraudulent concealment.^{183/} Where, however, in a business transaction a seller's deceit prevents a party from making independent inquiry^{184/} or where a party does not have an equal opportunity to discover material facts,^{185/} there may be fraud. In addition, although a mere failure to volunteer information will not give rise to liability, it may arise where the buyer requests information from the seller which is not truthfully given.^{186/}

The difficulties in proving fraud appear to discourage such product liability cases.^{187/} In order to avoid liability for fraudulent misrepresentation, AVCS manufacturers and sellers should carefully scrutinize statements about the safety or efficiency of their products before making them. Moreover, when responding to inquiries about their products, manufacturers and sellers must be sure not to conceal any material information. It is unlikely, however, that potential liability for fraud will deter those entities likely to be involved with AVCS.

E. Negligent Misrepresentation

In addition to claims for false or negligent advertising and fraud, misrepresentations of fact may also be actionable negligent misrepresentations: even if the manufacturer or seller believed the representation to be true.^{188/} Thus, a seller

181/ See, e.g., *Miller v. New Zealand Insurance Co.*, 98 So.2d 544,546 (La.App. 1957).

182/ See, e.g., *Johnson v. Ernest G. Beudry Motor Co.*, 170 F.Supp. 164, 169 (D. Ga. 1956) (applying Georgia law).

183/ See, e.g., *Daher v. G.D. Searle & Co.*, 695 F.Supp. 436,440 (D. Minn. 1986); *Pulte Home Corp. v. Ply Gem Industries, Inc.*, 804 F.Supp. 1471, 1483 (M.D. Fla. 1992) (applying Florida law); *Manning v. Ashland Chemical Co.*, 498 F.Supp. 1362, 1363 (N.D. Ill. 1980) (applying Illinois law); *Brown v. Lumbermens Mutual Casualty Co.*, 90 N.C.App. 464, 369 S.E.2d 367,36470 (1988), *review denied*, 323 N.C. 363, 373, S.E.2d 541, *and review granted, in part*, 323 N.C. 363, 373, S.E.2d 542 (1988) (failure to state claim that vehicle manufacturer fraudulently concealed defective brakes); *Rowan County Board of Education v. United States Gypsum Co.*, 103 N.C.App. 288, 407 S.E.2d 860,863, *aff' d in part, rev' d in part*, 332 N.C.I, 418 S.E.2d 648 (1992).

184/ *Taylor v. American Honda Motor Co.*, 555 F.Supp. 59, 64 (M.D. Fla. 1962) (applying Florida law - allegation that motorcycle manufacturer had superior knowledge).

185/ *Town of Hookser School District v. W.R. Grace & Co.*, 617 F.Supp. 126, 133 (D.N.H. 1984).

186/ See, e.g., *Berkeley Pump Co. v. Reed-Joseph Land Co.*, 279 Ark. 364,653 S.W.2d 128, 134 (1983).

187/ 2 *American Law Products Liability* 3d, supra at § 25:2.

188/ See, e.g., Cal. Civ. Code § 1572(2); for the Restatement rules about negligent misrepresentation see *Rest. Torts 2d* § 311; see also, *Rest. Torts 2d* § 552 (under certain circumstances, a party to

who makes a representation that a product is safe for a certain purpose when in fact the product is dangerous when used for that purpose, is liable.^{189/}

Negligent misrepresentation is established where a seller had a duty to give a buyer accurate factual representations, the seller knew the buyer intended to rely on the representation, the buyer actually and reasonably relies on the seller's statement to her injury and the seller knew or should have known that the statements were false.^{190/} There must be some untrue factual representation made. Merely selling a defective product will not give rise to liability for misrepresentation in the absence of an untruthful representation about that product.^{191/}

The person making the misrepresentation usually must have some reason to know the information given is wanted for a specific purpose, that the recipient intends to rely on the information, and that, if the information is false or erroneous, such reliance might cause injury to person or property.^{192/} Even where a seller does not have actual knowledge of a defect, if an assurance of safety regarding the product is given when the seller has been negligent in determining whether the product is defective, and the defect causes an injury, there may be an inference of negligence by the seller.^{193/} Statements in advertisements, brochures or booklets by AVCS manufacturers and sellers may give rise to liability.^{194/} As with fraud and false advertising, there is no liability for mere "sales talk" or puffing^{195/} but an expert opinion about an AVCS product may give rise to liability.^{196/}

A failure to warn about a known defect can give rise to a claim of negligent misrepresentation.^{197/} For example, the manufacturer of a product has a duty to use

a contract may be able to assert a claim for negligent misrepresentation independent of any principle of contract law).

- 189/ See *Dalrymple v. Sinkoe*, 230 N.C. 453, 53 S.E.2d 437,440 (1949); *Rulane Gas Co. v. Montgomery Ward & Co.*, 231 N.C. 270, 56 S.E.2d 689,693 (1949).
- 190/ *Fleenor v. Erickson*, 35 Wash.2d 891, 215 P.2d 885, 890 (1950); *Osborn v. Irwin Memorial Blood Bank*, 5 Cal.App.4th 234, 250-51, 7 Cal.Rptr.2d 101 (1992) (elements for negligent misrepresentation involving a risk of physical harm); *Makuc v. American Honda Motor Co.*, 835 F.2d 389 (1st Cir. 1987).
- 191/ See, *Ford Motor Co. v. Puskar*, 394 S.W.2d 1, 12 (Tex.Civ.App. 1965) (representation about operation of car if power steering failed was not untrue), *aff'd as modified sub nom.*, *Jack Roach-Bissonet, Inc. v. Puskar*, 417 S.W.2d 262 (Tex. S.Ct. 1967)
- 192/ See, e.g., *Pabon v. Hackensack Auto Sales, Inc.*, 164 A.2d at 784.
- 193/ *Rulane Gas Co. v. Montgomery Ward & Co.*, 56 S.E.2d at 693.
- 194/ See, *Kapp v. Bob Sullivan Chevrolet Co.*, 234 Ark. 395, 353 S.W.2d 5, 9 (1962) (no misrepresentation in advertisement regarding quality or performance of seatbelts); *McClanahan v. California Spray-Chemical Corp.*, 194 Va. 842, 75 S.E.2d 712, 725 (1953); see also *Kociemba v. G.D. Searle & Co.*, 707 F.Supp. 1517, 1525 (D. Minn. 1989)
- 195/ See, e.g., *Hoffman v. A.B. Chance Co.*, 339 F.Supp. 1385, 1388 (M.D. Pa. 1972) (locks advertised to furnish "unprecedented safety"): see *discussion, supra*, at pp. 24-25.27-28.
- 196/ *Pabon v. Hackensack Auto Sales, Inc.*, 63 N.J. Super. 476, 164 A.2d 773, 784 (1960); see, *Kociemba v. G.D. Searle & Co.*, 707 F.Supp. 1517, 1525 (D. Minn. 1989) (court can consider a representation that would normally be an opinion as one of fact where party making representation has special knowledge relied on by injured party).
- 197/ *Walker v. Decora, Inc.*, 225 Tenn. 504, 471 S.W.2d 778, 782 (1971); see, e.g., *Bami v. Kutner*, 45 Del. 550, 76 A.2d 801, 804-805 (1950) (representation that car was of good quality and fitness where car had defective brakes)

an effective, perhaps the most effective, method to warn potential customers of defects.^{198/} AVCS manufacturers and retailers should avoid issuing general warnings about potential dangers or risks and instead issue specific warnings to all those in the distribution chain and, wherever possible, to consumers.

As with other kinds of negligence, there must be some causal relationship between the injury or damage that occurs and the representation made. One court found no proximate cause between a representation about the safe use of a gas water heater and an explosion caused by a failure to properly relight the water heater.^{199/} However, another court found causation where a distributor, who was repeatedly requested to repair the type of problem that eventually resulted in plaintiffs injury, gave assurances that the equipment was safe to use.^{200/}

The context in which a statement is made may be important. A misrepresentation that is made as part of a business transaction, if relied upon, will give rise to liability.^{201/} However, a plaintiff does not have to prove reliance upon assurances of safety based on a single specific advertisement or label, as long as the manufacturers' claims of safety came to his attention.^{202/}

Finally, contractual privity generally is not required to state a claim for negligent misrepresentation in a product liability action,^{203/} although in some states privity of contract may still be required to recover for financial losses.^{204/} However, where reliance on an alleged misrepresentation is indirect (as where the alleged misrepresentation was made to someone other than the party claiming reliance), privity, a fiduciary relationship, or a limited class that the speaker knows might rely on the misrepresentation, may be required.^{205/} An airplane owner had no negligent misrepresentation claim against the plane's manufacturer based on alleged misrepresentations relating to design adequacy and safety the manufacturer made to the FAA.^{206/}

198/ See, *Hoffman v. Sterling Drug Co., Inc.*, 485 F.2d 132, 142 (3rd Cir. 1973)

199/ *Rulane Gas Co. v. Montgomery Ward & Co.*, 56 S.E.2d at 695; (a person who endorses a product may be liable for negligently failing to determine that the product is dangerous). See also, *Sell v. Volkswagen of America, Inc.*, 505 F.2d 953, 955 (6th Cir. 1974).

200/ *Sylvestri v. Warner & Swasey Co.*, 398 F.2d 598, 603-604 (2d Cir. 1968) *disagreed with on other grounds*, *Lindsey v. Dayton-Hudson Corp.*, 592 F.2d 1118 (10th Cir. 1979), cert. *denied*, 444 U.S. 856, 100 S.Ct. 116, 62 L.Ed.2d 75 (1979) *and disapproved on other grounds*, *Walker v. Armco Steel Corp.*, 446 U.S. 740, 100 S.Ct. 1978, 64 L.Ed.2d 659 (1980) (applying New York law).

201/ See, *Rest. Torts* 2d § 552 (primary losses recoverable); see, e.g., *Holley v. H.L. Greene Co.*, 3 Misc.2d 941, 155 N.Y.S.2d. 197, 199 (1956); *Nelson v. Healey*, 151 Kan. 512, 99 P.2d 795,799 (1940) (misstatement about condition of tires to prospective purchaser).

202/ *Wright v. Carter Products, Inc.*, 244 F.2d 53, 60-61 (2d Cir. 1957).

203/ *Hanberry v. Hearst Corp.*, 276 Cal.App.2d 680, 685, 81 Cal.Rptr. 519 (1969); *Chitty v. Home-Wilson, Inc.*, 92 Ga.App.716, 89 S.E.2d 816, 818-19 (1955); *Lindroth v. Walgreen Co.*, 329 Ill.App.105, 67 N.E.2d 595, 604 (1946).

204/ See, e.g., *Pabon v. Hackensack Auto Sales, Inc.*. 164 A2d at 784-85.

205/ *Learjet Corp. v. Spenlinhauer*, 901 F.2d 198, 202 (1st Cir. 1990) (applying Kansas law).

206/ *Id.*

Manufacturers and sellers of AVCS products who are careful about the representations they make about their products and provide clear warnings about potential risks or problems can reduce the chances of liability for negligent misrepresentation. Nevertheless, it may be difficult to predict whether a warning will be sufficient to preclude liability. Also, while parties can attempt to limit liability through contracts, they must use clear contractual language designed to prohibit actions for negligent misrepresentation and to limit reliance on any representations actually made.^{207/}

F. Extent To Which The Federal Government May Be Liable In Tort

1. The Federal Government Is Liable For Negligence

One of the key issues arising from AVCS is the extent of the federal government's potential tort liability stemming from its involvement in the planning, development, design, implementation, and operation of AVCS. This issue takes on heightened significance since the federal government will be funding AVCS projects through cooperative agreements and grants, including grants for field evaluations and operational tests of AVCS technologies. While the private sector will have primary responsibility for developing AVCS, the government will develop performance specifications and guidelines. AVCS development could therefore result in a shift of liability for automobile accidents from drivers, who normally bear it, to the government since injured parties will turn to the government for recovery of personal injury damages.

The Federal Tort Claims Act ("R-CA" or "Act") recognizes, subject to certain exceptions, the general principle that the United States should be liable for the negligence of government employees and federal and other agencies performing government functions when a private individual would be liable under similar circumstances.^{208/} Thus, if state law would hold individuals liable under similar circumstances, the federal government also can be held liable.^{209/} Under the FTCA, the federal government may be liable for personal injury and property damage claims sounding in tort and arising from damage caused by AVCS products with which the government is involved in some way.^{210/} The United States also may be impleaded as a third-party defendant liable for indemnity or contribution if the original defendant claims the United States was wholly or partially responsible for the plaintiffs injury.^{211/}

207/ *Keller v. A.O. Smith Harvestore Products, Inc.*, 819 P.2d 69, 74 (Colo. 1991).

208/ 28 U.S.C. § 1346(b). Prior to passage of the FTCA, such actions had been barred by sovereign immunity. 14 Wright, Miller & Cooper, *federal Practice and Procedure, Jurisdiction* § 3658 (2d ed. 1985).

209/ *Rayonier, Inc. v. United States*, 352 U.S. 315, 77 S.Ct. 37, 1 L.Ed.2d 35 (1957). Accordingly, state law doctrines such as contributory negligence, assumption of risk, proximate cause and *res ipsa loquitur* apply. See discussion, *infra*.

210/ Pursuant to the FTCA, the United States is liable for the negligent or wrongful acts or omissions of an employee acting in the scope of employment as defined by state *respondent superior* law. *Laird V. Nelms*, 406 U.S. 797, 99 S.Ct. 1899, 32 L.Ed.499 (1972).

211/ *United States v. Yellow Cab Co.*, 340 U.S. 543, 71 S.Ct. 399, 95 L.Ed.523 (1951).

While the FTCA waives sovereign immunity in actions arising out of negligent tortious conduct, the federal government's liability is strictly limited by the Act.^{212/} For instance, only actions for money damages are within the FTCA's scope,^{213/} not punitive damages,^{214/} Most importantly, since the FTCA does not waive sovereign immunity for strict liability claims,^{215/} negligence still must be shown even where the United States owns, manufactures or designs the allegedly defective product.^{216/}

2. The Discretionary Function Exception

The FTCA contains a number of exceptions, the most important of which is the discretionary function exception.^{217/} The theory of the exception is that claims based upon discretionary acts or omissions by government employees are outside the Act's scope and the government is not liable even for negligent or wrongful acts or for abuse of discretion.^{218/}

Since the purpose of the discretionary function exception is to immunize government employees from liability for formulating public policy, the courts examine whether the challenged conduct occurred in the course of making significant policy and political decisions.^{219/} The exception prevents judicial second-guessing through tort actions of legislative and administrative decisions based on social, economic and political policies and protects government actions and decisions based on considerations of public policy.^{220/} The exception also is intended to further national policy effectuated through the discretion exercised by government officials.^{221/}

Until recently courts generally distinguished discretionary functions as involving the planning and initiation of programs as opposed to operational

212/ The Act contains substantive and procedural limits such as exclusive federal court jurisdiction, non-jury trials only and certain notice of claim requirements. 28 U.S.C. §§ 1346(b), 2401 (b), 2402, 2675; 2679(d).

213/ *Hataley v. United States*, 351 U.S. 173, 76 S.Ct. 745, 100 L.Ed. 1065 (1956).

214/ 28 U.S.C. § 2674. However, this limitation has been narrowly construed as only barring damage awards intended to punish "egregious misconduct" but not purportedly excessive awards of actual or compensatory damages. *Malzof v. United States*, ___ U.S. ___, 112 S.Ct. 711, 116 L.Ed.2d 731 (1992).

215/ *Dalehite v. United States*, 346 U.S. 15, 44-45, 73 S.Ct. 956, 97 L.Ed. 1427 (1953); *Laird v. Nelms*, 406 U.S. 797, 99 S.Ct. 1899, 32 L.Ed.499 (1972); *McCay v. United States*, 703 F.2d 464, 472 (10th Cir. 1983). The FTCA also does not waive sovereign immunity for cases involving nuisance. *Dalehite v. United States*, 346 U.S. at 44-45 (1953).

216/ See, e.g., *Watson v. Alexander*, 532 F.Supp. 1004, 1006 (E.D. Tex. 1982).

217/ 28 U.S.C. § 2680(a).

218/ *Id.* The government also is not liable for an act or omission of a government employee, "exercising due care, in the execution of a statute or regulation, whether or not such statute or regulation be valid." *Id.*

219/ See, e.g., *United States v. S.A. Empress de Viacao Aerea Rio Grandese (Varig Airlines)*, 467 U.S. 797, 814, 104 S.Ct. 2755, 81 L.Ed.2d 660 (1984).

220/ *Id.*

221/ See *Smith v. United States*, 375 F.2d 243, (5th Cir. 1967), cert. denied, 389 U.S. 841, 88 S.Ct. 76, 19 L.Ed.2d 106 (1967).

activities.^{222/} This analysis resulted in a so-called “planning-operational distinction” as the critical factor in determining whether the exception applied. For instance, in *Peterson v. United States*,^{223/} the planning of Air Force training and evaluation missions was a protected discretionary function, but the United States was not exempt from liability for operational negligence.^{224/}

Recently the Supreme Court abandoned this planning-operational distinction in favor of a more flexible approach. In *United States v. Gaubert*,^{225/} the Supreme Court held that discretionary acts involve judgment or choice and that “[d]iscretionary conduct is not confined to the Policy or planning level.”^{226/} In that case, the Court held that decisions made by federal regulators as part of their supervision of a savings and loan corporation’s day-to-day operations were within the discretionary function exception because they involved an exercise of discretion in furtherance of public policy goals. The Court looked to the nature of the conduct at issue in the case rather than the status of the actor to determine whether the discretionary function applied.^{227/} The Court made clear that decisions at both the planning and operational levels could be based on policy and thus be within the discretionary function exception.

Gaubert relied on *Berkowitz v. United States*,^{228/} where the Court held that: “Conduct cannot be discretionary unless it involves an element of judgment or choice Thus the discretionary function exception will not apply when a federal statute, regulation or policy specifically prescribes a course of action for an employee to follow. In this event, the employee has no rightful option but to adhere to the directive.”^{229/} The courts therefore should inquire into whether the challenged actions are “controlled” by regulations or statutes.^{230/}

The principles identified in Gaubert and Berkowitz can be used to determine whether or not the exception applies to protect certain governmental actions from liability. Generally, there is a two-tier analysis used to identify discretionary functions.^{231/} First, the governmental action must be the product of judgment or choice.^{232/} This involves consideration of whether the government conduct is specifically prescribed by any mandatory federal statute, regulation, or policy.^{233/} If

222/ *Dalehite v. United States*, 346 U.S. at 35-36.

223/ 673 F.2d 237 (8th Cir. 1982).

224/ See *Smith v. United States*, 546 F.2d 872 (10th Cir. 1976) (decision to leave parts of land undeveloped was discretionary, but decision not to place warning signs was not discretionary).

225/ 499 U.S. 315, 111 S.Ct. 1267, 1275 (1991) (a case involving a challenge to the Federal Home Loan Bank Board’s advice to and supervision of a thrift institution; the court held that the Board’s actions were within the discretionary function exception).

226/ *Id.*

227/ *Id.*; see *United States v. S.A. Empresa de Viacao Aerea Rio Grandense (Varig Airlines)*, 467 U.S. 797, 813, 104 S.Ct. 2755, 2764, 81 L.Ed.2d 660 (1984) (“Varig Airlines”).

228/ 486 U.S. 531, 536, 108 S.Ct. 1954, 100 _ Ed.2d 531 (1988).

229/ *Id.* at 536.

230/ *U.S. v. Gaubert*, 111 S.Ct. at 1279.

231/ *Baum v. U.S.*, 986 F.2d 716, 720 (4th Cir. 1993).

232/ *Id.*

233/ *Id.*

so, then the actor must follow the statute or regulation and immunity should exist. Second, if there are no such mandatory statutes or regulations, to be immune the government's conduct must be based on considerations of social, economic or political policy.^{234/} At least one court has held this second element involves an objective standard.^{235/}

The exception will apply where a statute specifically gives federal employees or agencies discretion to act as they did.^{236/} On the other hand, the government's failure to follow nondiscretionary statutes or regulations may lead to liability. For instance, where the government issued a license without receiving the data required by federal regulations, no discretionary function was involved and no immunity from suit arose.^{237/}

a. General Application of Exception

The discretionary function exception has been applied in a multitude of cases, some of which are helpful in analyzing how the courts will evaluate governmental liability in the AVCS context. The Supreme Court's relatively recent pronouncement in *Gaubert*, however, provides the controlling analytical framework.

First, courts consider whether the government's decision to delegate safety responsibility to a private party is a protected discretionary function. Generally, delegation of safety responsibility is within the exception, even if the government retains some right to inspect.^{238/} Indeed, even the extent of governmental supervision of the safety procedures of private parties is an exercise of "discretionary regulatory authority."^{239/} In *Varig Airlines*,^{240/} a case arising from a defectively designed plane, the FAA approved the particular design element at issue even though it violated FAA regulations and the FAA failed to conduct an inspection. FAA regulations, however, placed primary testing and inspection responsibility on manufacturers and required the FAA to only spot check test results. This reflected the FAA's decision to balance safety and costs. The Supreme Court held the FAA's decision to place primary safety responsibility on manufacturers was within the discretionary function exception.^{241/}

234/ Id. at 720; *Berkowitz*, 486 U.S. at 531, 108 S.Ct. at 1954-55; *Varig Airlines*, 407 U.S. at 813; see *Gaubert*, 111 S.Ct. at 1275 n.7 (providing an informative illustration).

235/ *Baum*, 986 F.2d at 720-721.

236/ See *Blaber v. United States*, 212 F.Supp. 95 (E.D. N.Y. 1962), *aff'd*, 332 F.2d 629 (2d Cir. 1964); see also *First National Bank of Effingham*, 565 F.Supp. 119.

237/ *Berkowitz v. United States*, 486 U.S. 531, 542-543 (1988).

238/ See *Feyers v. United States*, 749 F.2d 1222, 1225-1227 (6th Cir. 1984). *cert. denied*, 471 U.S. 1125, 105 S.Ct. 2655, 86 L.Ed.2d 272 (1985)(decision to rely on spot checks is discretionary); *Maltis v. United States*, 546 F. Supp. 96, 101 (N. D. N.Y. 1982) (delegation of safety responsibility), *aff'd*, 729 F.2d 1442 (2nd Cir. 1983); see also *Varig Airlines*, 467 U.S. at 814-821 (discussed below).

239/ *Varig Airlines*, 467 U.S. at 819-820.

240/ 467 U.S. at 800-807, 104 S.Ct. at 2757-2761.

241/ Id. at 807-821.

Similarly, another court found that the FAA's establishment of departure procedures for an airport was also within the exception.^{242/}

At least one court, however, held that the government cannot delegate responsibility to contractors to discover its own negligent design, construction and maintenance.^{243/} In that case, the government's agreement to retain safety responsibility militated against the discretionary function exemption applying.^{244/} Also, where statutes, regulations or policy require the government to be responsible for safety, it cannot delegate that responsibility: although how the government performs that responsibility, if not controlled by regulations, will be within the discretionary function exception.^{245/}

Second, courts have held that the government's approval of designs and technology is within the discretionary exception.^{246/} For example, the exemption barred suit against the United States for damages arising from an allegedly inadequately designed traffic separator (approved but not constructed by government) on an interstate highway.^{247/} The government also was not liable for the design defects at issue in *Varig Airlines* even though the government approved the design.^{248/} Likewise, in *Baum*, the court held that the government's design, construction and maintenance of guardrails on a roadway was within the discretionary function exception.^{249/} Even where the government actually designs, constructs and maintains a technology or product, its actions may be within the exception if they meet the standards set forth in *Gaubert*.^{250/}

Third, governmental funding of activities and related involvement with parties receiving such funds, states or private parties, often will be within the discretionary function exception. This is true even if the government supervises the activity or gets involved in it. So long as the agencies' actions further policy goals and

242/ *West v. F.A.A.*, 830 F.2d 1044, 1047-48 (9th Cir. 1987), *cert. denied*, 485 U.S. 1007, 108 S.Ct. 1470, 99 L.Ed.2d 699 (1988).

243/ See *Sexton v. United States*, 797 F.Supp. 1292. 1300-01 (E.D. N.C. 1991) (government retained safety responsibilities).

244/ *Id.*

245/ See *Gaubert*, 111 S.Ct. at 1275.

246/ See *First National Bank of Effingham v. United States*, 565 F.Supp. 119 (D.C. Ill. 1983) (government approval of a highway design that allegedly violated uniform standards was within the discretionary exception): *see also*, *Wright v. United States*, 568 F.2d 153, 157-1 59 (10th Cir. 1977) (government's adoption and implementation of "plans, specifications, or schedules of operations" for bridge, which state maintained, was within discretionary exception), *cert. denied*, 439 U.S. 824, 99 S.Ct. 94, 58 L.Ed.2d 117 (1978).

247/ *Daniel v. United States*, 426 F.2d 281 (5th Cir. 1970).

248/ See discussion of *Varig Airlines* above.

249/ 986 F.2d at 721-724; *see Bowman v. United States*, 820 F.2d 1393, 1395 (4th Cir. 1987) (decision not to place guardrail was discretionary function because "the decision was the result of a policy judgment.")

250/ *Baum*, 986 F.2d at 721-724; but *see*, *Driscoll v. United States*, 525 F.2d 136 (9th Cir. 1975) (decision not to use traffic control devices on air force base could lead to liability).

are not specifically dictated by statute or regulation (or merely involve decisions resting on mathematical calculations), the discretionary function exception will apply.^{251/}

In *Miller v. United States*,^{252/} an action was brought against the Department of Transportation (“DOT”) under the FTCA for personal injuries resulting from a traffic accident. The plaintiffs alleged, among other things, that the DOT failed to inspect construction plans to assure compliance with government mandated criteria and regulations.^{253/} The plaintiffs further alleged that the highway “was regulated, inspected, controlled and designed by defendant United States and said defendant United States was charged with the duty of approving, supervising and inspecting the designing and building of [the highway], as well as monitoring safety features, controlling, maintaining, repairing and keeping in safe condition [the highway] for the use of the public.”^{254/} The highway had been constructed under the Federal-Aid Highway Act. Colorado received federal funds to construct and maintain the highway, but the United States inspected and approved the project after construction was completed.^{255/} Under these circumstances, the court of appeals held that the plaintiffs’ claims were within the discretionary function exception and were properly dismissed by the district court. The court reasoned that “[t]he statutes and regulations at issue fail to provide a fixed or readily ascertainable standard, and decisions made pursuant to them require more than expert evaluation of a mandatory duty.”^{256/} Similarly, in *Rayford v. United States*,^{257/} the district court held: “The relatively passive role of the United States under the Federal-Aid Highway Act is . . . insufficient to bring it within the liability provisions of the Federal Tort Claim Act.”^{258/}

Fourth, while the federal government is not liable for a merely inadequate warning,^{259/} liability may attach if the government fails to issue any warning of a known hazard.^{260/} In *Andrulonis v. United States*,^{261/} the Court held that the Center for Disease Control was not immune for failing to warn a researcher performing a study jointly conducted by the Center and the New York Department of Health about the

251/ *Gaubert*, 111 S.Ct. at 1278.
252/ 710 F.2d 656 (10th Cir.), cert. denied, 464 U.S. 939, 104 S.Ct. 352, 78 L.Ed.2d 316 (1983).
253/ Id. at 657-658.
254/ Id. at 658.
255/ Id. at 659.
256/ Id. at 663.
257/ 410 F.Supp. 1051, 1052 (D.C. Tenn. 1976)
258/ Id. at 1052; see *Mahler v. United States*, 306 F.2d 713, cert. denied, 371 U.S. 923, 83 S.Ct. 290, 9 L.Ed.2d 231.
259/ *Jurzec v. American Motors Corp.*, 856 F.2d 1116, 1119 (8th Cir. 1988) (no liability for inadequate warning of Jeeps’ rollover tendency since decision about nature and content of warning is discretionary); *Smith v. Johns-Manville Corp.*, 795 F.2d 301(3d Cir. 1986) (failure of government to attach warnings to asbestos it sold was discretionary).
260/ *Mandel v. United States*, 793 F.2d 964, 967 (8th Cir. 1986) (exception does not apply where Park Service failed to provide warning about submerged rocks in river and failed to comply with previously adopted policy); *Smith v. United States*, 546 F.2d at 872; but see discussion of misrepresentation exception to the FTCA, below.
261/ 924 F.2d 209 (2d Cir.), vacated, ___ U.S. ___, 112 S.Ct. 39, 116 L.Ed.2d 18 reinstated, 952 F.2d 652 (2nd Cir. 1991). cert. denied, ___ U.S. ___, 112 S.Ct. 2992, 120 L.Ed.2d 869 (1992); see *Summer v. United States*, 905 F.2d 112 (9th Cir. 1990).

danger of working with a rabies vaccine. In *Layton v. United States* the Court held that where there is no regulatory requirement to issue a warning (in that case about the danger of felling trees) the exception shielded the government from liability.^{262/} The court distinguished *Andrulonis* and other failure-to-warn cases on the basis that those cases involved simple negligence by the government in failing to warn, while in *Layton* there was a “consideration of competing values” implicated in the government’s decision.^{263/} The court noted the Forest Service delegated primary safety responsibility to contractors, was not bound by rules or regulations to issue warnings, and could rely on the expertise of contractors.^{264/} In *Miller v. United States*, the court also rejected a contention that the government failed to warn of a dangerous condition because the claimed negligence went “to the essence of the Secretary’s judgment in fashioning a highway in the best overall public interest,” which implicated several public policy considerations.^{265/}

b. Application In AVCS Context

We next turn to whether the discretionary function exception will shield government actions from liability under the FTCA for accidents attributed to AVCS. The private sector will have primary responsibility for developing AVCS. The government will, however, provide funding and grants, develop performance specifications, and establish guidelines for the evaluation of IVHS technology. Government may fund AVCS activities through the use of cooperative agreements and grants rather than procurement contracts. Under these circumstances, the government, through the DOT or other agencies, may be involved in enforcing administrative requirements, including those in 49 CFR Part 18 or OMB Circular A-110. Federal agencies also may provide technical assistance to recipients of the grants, approve some subgrants and contracts, and provide general program direction.

The government’s use of cooperative agreements and grants to fund AVCS development and the provision of technical assistance and general program direction to the recipients of such grants and funding would be within the discretionary function exception so long as the government’s actions involve judgment and choice rather than being specifically dictated by statutes, regulations or policies. In *Layton v. United States*,^{266/} the Court held that selection of contractors for timber-cutting contracts was a discretionary function. So too here, the selection of grantees and contractors is not controlled by regulations and is discretionary. Enforcing the administrative requirements in 49 CFR Part 18 and OMB Circular A-1 10 would not remove the government’s activities from the protection of the discretionary function exception, except where specific regulations are violated, since the requirements

262/ 984 F.2d at 1496, 1505 (8th Cir.), *cert. denied*, ___ U.S. ___, 114 S.Ct. 213, 126 L.Ed.2d 170 (1993).

263/ *Id.*

264/ *Id.*

265/ *Miller*, 710 F.2d at 665-666; *see Spillway Marina, Inc. v. United States*, 445 F.2d 876 (1st Cir. 1971); alleged failures to warn in an economic context may also be within the FTCA’s misrepresentation exception, discussed below.

266/ 984 F.2d at 1501-02.

appear to contemplate the exercise of discretion by regulators. To the extent the government provides technical assistance and “general program direction,” it appears those actions would involve judgment and choice, further public policy, and not be dictated by regulations. The exception would therefore apply.

The DOT also is required to “establish guidelines and requirements for the evaluation of field and related operational tests carried out pursuant to grants made by DOT to ‘non-federal entities,’ including state and local governments, universities and other persons, for operational tests relating to intelligent vehicle-highway systems.”^{267/} We understand that the DOT will, in some cases, award procurement contracts to conduct the evaluations of the operational tests. Operational tests must have written evaluations of both the IVHS technologies investigated and the results of the investigation consistent with the guidelines developed under section 6053(c).^{268/}

Whether the federal government will be liable under the FTCA in the event an evaluation negligently fails to discover a defect in an IVHS which has undergone an operational test and evaluation, and which is later incorporated in a deployed system, is an important issue. The relevant statutory provisions here apparently leave it to the discretion of the DOT to establish guidelines and requirements and to select “non-federal entities” to perform operational tests and submit written evaluations. Therefore, the content of the guidelines is subject to the discretionary choices and judgments of the DOT.^{269/} Also, there is nothing in the statutory scheme that mandates certain types of guidelines or requires that the guidelines be specifically geared toward ferreting out certain types of defects in IVHS. Further, the Act does not place a burden on the government to undertake the operational tests, the evaluations, or any independent review of the evaluations prepared by the grantees or contracting parties. Under these circumstances, the exception would immunize the government for any failure to discover a defect which later caused injury.^{270/} If the guidelines provide for precise inspections or tests to be performed by government employees and those guidelines were not followed, however, the government could be liable.^{271/}

3. Misrepresentation Exception

Of the other exceptions to the FTCA, the most important for purposes of AVCS is the government’s immunity from suits for deceit and intentional or negligent misrepresentations, and for the tort of “deceit.”^{272/} This exception applies to the

267/ Intelligent Vehicle Highway Systems Act of 1991, P.L. 102-240 (1991 U.S. Code Cong. & Admin. News, 105 Stat. 2190-2193) §§ 6053(c), 6055(d).

268/ Id. § 6055(b).

269/ *Layton*, 984 F.2d at 1501-02.

270/ *Varig Airlines*, 467 U.S. at 814-82).

271/ *Layton*, 984 F.2d. at 1503; see also *McMichael v. United States*, 856 F.2d 1026 (8th Cir. 1988).

272/ 28 U.S.C. § 2680(h); *United States v. Neusradt*, 366 US. 696, 81S.Ct.1294, 6L.Ed.2d 614 (1961) (exclusion of misrepresentation excludes liability for both negligent and intentional misrepresentations); *United Airlines, Inc. v. Wiener*. 335 F.2d 379, 398 (9th Cir. 1964), cert. denied, 379 U.S. 951, 85 S.Ct. 452, 13 L.Ed.2d 549(1964).

communication of misinformation upon which a recipient relies which causes economic loss such as lost profits.^{273/}

Some plaintiffs may try to cast a complaint under the FTCA for economic loss (as opposed to personal injury) in the form of a negligence action in an attempt to avoid the misrepresentation or deceit exception.^{274/} The courts have, however, consistently looked behind the allegations and the language used in the complaint to determine the nature of the real cause of action.^{275/} In *Green v. United States*,^{276/} the plaintiffs alleged the government gave false or misleading information regarding the dangers of its use of DDT on grazing land, resulting in economic loss to the plaintiff cattle owners. The court denied the claim, holding that "[t]he misrepresentation exception precludes liability where the plaintiff suffers economic loss as a result of a commercial decision which was based on a misrepresentation by government consisting either of a false statement or a failure to provide information which it had a duty to provide." The misrepresentation exception also has barred suits based on failure to give a warning to injured parties and suits based on an allegation of implied misrepresentation.^{277/}

In the AVCS context, where the tort actions will focus on personal injury and property damage rather than economic loss, the misrepresentation and deceit exception generally will be irrelevant.^{278/}

4. Military Exception

Claims by military personnel injured through the use of AVCS which the government operates (such as military uses of an automated highway to transport military vehicles), probably would be barred because they likely will arise out of or in the course of activity incident to military service.^{279/} Indeed, the right of a third party to recover in an indemnity action against the United States is limited by this doctrine where the injured party was in the service.^{280/}

273/ *Block v. Neal*, 460 U.S. 289, 295-297, 103 S.Ct. 1089, 75 L.Ed.2d 67 (1983).

274/ See, e.g., *Mount Homes, Inc. v. United States*, 912 F.2d 352, 355-56 (9th Cir. 1990).

275/ *Id.*; *Preston v. United States*, 596 F.2d 232 (7th Cir.), *cert. denied*, 44.4 U.S. 915, 100 S.Ct. 228, 62 L.Ed.2d 169 (1979) (allegations of complaint amounted only to misrepresentation by implication): see *Lynch v. United States Department Army Corps of Engineers*, 474 F.Supp. 545 (D. Md. 1978), *aff'd*, 601 F.2d 581 (4th Cir. 1979).

276/ 629 F.2d 581, 564-585 (9th Cir. 1980); see *Preston*, 596 F.2d at 239.

277/ See, e.g., *City and County of San Francisco v. United States*, 615 F.2d 498, 504-05 (9th Cir. 1980); *Preston*, 596 F.2d 238 (necessary to distinguish between claims grounded on tort law of misrepresentation and those only collaterally involving misrepresentations).

278/ *United States v. Neustadt*, 366 U.S. at 711 n.26.

279/ *Feres v. United States*, 340 U.S. 135, 71 S.Ct. 153, 95 L.Ed. 152 (1950); *In re Agent Orange Product Liability Litigation*, 818 F.2d 194, 200 (2d Cir. 1987).

280/ *Stencel Aero Engineering Corp. v. United States*, 431 U.S. 666, 667, 97 S.Ct. 2054, 52 L.Ed.2d 665 (1977).

5. Conclusion

As a general matter, the government's potential tort liability will be diminished by the discretionary function exception so long as its actions involve choice and judgment and are not controlled by statutes and regulations. The Supreme Court in *Gaubert* gave the discretionary function a broad interpretation that encompasses discretionary actions taken to further policy goals, including actions taken at operational levels. Liability for any economic losses will be diminished by the misrepresentation exception which shields the government from suits for misrepresentation, whether negligent or intentional, and from some suits based on failure to provide information or to warn.

G. Tort Liability Of State And Local Entities

To the extent states and local entities are not immune from suit they will be liable if they act as manufacturers, sellers, distributors, designers or operators of IVHS products. Their immunity is discussed in a separate paper; this paper discusses the principles applicable if they are not immune.

H. Applicability Of Government Contractor's Defense

Some or all IVHS products may be developed by the private sector according to government plans and specifications. Private contractors who design or build AVCS products in accordance with those specifications may be immune from liability under the government contractor's defense.

This defense was clarified by the Supreme Court in *Boyle v. United Technologies Corp.*,^{281/} a product liability case brought by the estate of a Marine helicopter pilot who drowned when the military helicopter crashed during a training exercise. The plaintiff's jury award was reversed by the Fourth Circuit, and the Supreme Court affirmed, because of the applicability of the government contractor's defense. The Court based this defense on the discretionary function exception to the Federal Tort Claims Act, reasoning that contractors held liable for design features which were approved by the government would pass on the costs of liability to the government, resulting in a liability that governmental immunity was supposed to prevent.^{282/} The Court then resolved a dispute among the circuits when it enumerated the elements necessary to establish the government contractor's defense: (1) The United States approved reasonably precise specifications: (2) The equipment conformed to those specifications: and (3) The supplier warned the United States about the dangers in the use of the equipment that were known to the supplier but not to the United States.^{283/}

281/ 487 U.S. 500, 108 S.Ct. 2510, 101 L.Ed.2d 442 (1988).

282/ *Id.* at 510-513. However, as one court noted, had this concern been paramount military contractors would be entitled to a blanket immunity from all state tort liability, as inevitably some if not all of the cost of such suits would be passed on to the government. *In re Joint Eastern & Southern District New York Asbestos Litigation*, 897 F.2d 626, 631 (2d Cir. 1990).

283/ *Id.* at 512. The Court with slight modifications adopted the formulations utilized by the Fourth and Ninth Circuits in *Tozer v. LTV Corp.*, 792 F.2d 403 (4th Cir. 1986), *cert. denied*, 487 U.S. 1233, 108 S.Ct. 2897, 101 L.Ed.2d 931 (1988) and *McKay v. Rockwell International Corp.*, 704 F.2d

The Boyle formulation immunizes government contractors from design defects, but not manufacturing defects.^{284/} If the contractor fails to manufacture a product according to the specifications, there is no public policy reason why it should be immune from suit for its malfeasance. The line between manufacturing and design defect, however, may not always be clear. The Eleventh Circuit distinguished between a defect inherent in the product or system that the government has approved and an instance of shoddy workmanship.^{285/} Moreover, the issue is governed by federal common law rather than state tort law.^{286/}

Another element necessary to establish the defense is proof that the government approved reasonably precise specifications. The government must do more than simply rubber stamp specifications prepared by private contractors.^{287/} Proof of discussions between the government and the contractor over the proposed specifications demonstrates the necessary involvement by the government.^{288/} The specifications need only be “reasonably precise,” and can encompass not only the original procurement and contract specifications, but also mock-ups, drawings, and engineering analyses.^{289/} However, the specifications must be quantitative, not simply utilizing vague qualitative words such as “fail-safe” or “simple.”^{290/}

The government contractor’s defense also may bar state law failure to warn claims.^{291/} Courts have reasoned that conflicting federal contract and state tort law as to the nature and content of required product warnings create the same detrimental impact on the federal government which Boyle sought to eliminate.^{292/} However, the defense only applies where the federal government imposed a specific warning requirement upon the contractor. It is not enough for the government merely to reject a caution label proposed by a contractor, since the government did not preclude the contractor from issuing its own warnings.^{293/}

444,449-50 (9th Cir. 1983), *cert. denied*, 464 U.S. 1043, 104 S.Ct. 711, 79 L.Ed.2d 175 (1984), and rejected the Eleventh Circuit’s more restrictive approach outlined in *Shaw v. Grumman Aerospace Corp.*, 778 F.2d 736, 746 (11 th Cir. 1985), *cert. denied*, 487 U.S. 1233, 108 S.Ct. 2896, 101 L.Ed.2d 930 (1988).

284/ *Harduvel v. General Dynamics Corp.* 878 F.2d 1311, 1317 (11 th Cir. 1989), *cert. denied*, 494 U.S. 1030, 110 S.Ct. 1479, 108 L.Ed.2d 615 (1990).

285/ *Id.*

286/ *Id.*

287/ *Trevino v. General Dynamics Corp.*, 865 F.2d 1474, 1480 (5th Cir. 1989) *cert. denied*, 493 U.S. 935, 110 S.Ct. 327, 107 L.Ed.2d 317 (1989).

288/ *Harduvel v. General Dynamics Corp.*, 878 F.2d at 1320.

289/ *Kleeman v. McDonnell Douglas Corp.*, 896 F.2d 698, 702 (4th Cir. 1989) *cert. denied*, 495 U.S. 953, 110 S.Ct. 2219, 109 L.Ed.2d 545 (1990). See also *Smith v. Xerox Corp.*, 866 F.2d 135, 138 (5th Cir. 1989) (listing of specifications sufficient to meet defendants burden of proof).

290/ *Kleeman v. McDonnell Douglas Corp.*, 890 F.2d at 703.

291/ *In re Joint Eastern & Southern Dist. New York Asbestos Litigation*, 897 F.2d at 629-630; *Garner v. Santoro*, 865 F.2d 629, 635 (5th Cir. 1989); *Niemann v. MacDonell Douglas Corp.*, 721 F.Supp. 1019, 1024-25 (S.D. Ill. 1989); *Dorse v. Armstrong World Industries*, 716 F.Supp. 589, 590 (S.D. Fla. 1989) *aff’ d.*, 898 F.2d .1487 (11 th Cir. 1990).

292/ E.g., *In re Joint Eastern & Southern District New York Asbesros Litigation*, 897 F.2d at 629.

293/ *Id.* at 633.

The courts are split as to whether the defense applies to nonmilitary contracts, particularly where a significant conflict between federal interests and state law cannot be shown. The Eleventh Circuit in *Burgess v. Colorado Serum Co.*^{294/} permitted the defense in an action against a drug manufacturer for failing to warn of the dangers of human exposure to brucellosis vaccine. The court reasoned that the defense is an extension of sovereign immunity, and thus should apply to any governmental contractor.^{295/} A few other courts more recently have followed suit.^{296/} The Ninth Circuit, on the other hand, limits the defense to military contractors on the basis that *Boyle* “remain[s] rooted in considerations peculiar to the military.”^{297/}

Assuming the government commissions development of AVCS products through government contracts, the government contractor’s defense may apply to shield the contractors from liability in some jurisdictions, if all of the *Boyle* elements are met. In the Ninth Circuit, the defense will apply only to military AVCS products commissioned through the military’s procurement programs.

I. Contract Specifications Defense

Even if the government contractor’s defense does not apply to AVCS products, manufacturers who build AVCS products based on specifications provided by either the government or private entities, may be able to assert the contract specifications defense. The rationale for this defense is that a contractor should not be held liable for producing a product whose specifications are beyond its control.^{298/} This defense is in some respects broader than the government contractor’s defense because it is founded on tort law negligence principles rather than government policy, and is available in private contract situations.^{299/} However, while the government contractor’s defense may insulate contractors even when specifications supplied by the government are obviously dangerous, the contract specifications defense will not apply where the specifications are so obviously defective or dangerous that a reasonable contractor would not follow them.^{300/}

Courts applying the contract specifications defense have generally held that where products are manufactured to the order and specification of another, the contractor is not liable for damages resulting from those specifications unless the specifications were so defective and dangerous that a reasonably competent contractor “would realize there was a grave chance that his product would be dangerously

294/ 772 F.2d 844 (11 th Cir. 1985).

295/ Id. at 646.

296/ *In Re Chateaugay Corp.*, 132 B.R. 818 (Bankr. SD. N.Y. 1991).

297/ *Nielsen v. George Diamond Vogel Paint*, 892 F.2d 1450, 1454-55 (9th Cir. 1990). See also *In Re Hawaii Federal Asbestos Cases*, 960 F.2d 806 (9th Cir. 1992) (defense inapplicable to asbestos products readily available on the market).

298/ *Brockelsby v. United States*, 767 F.2d 1288 (9th Cir.) (applying California law), *cert. denied sub nom.*, *Jeppesen v. Brockelsby*, 474 U.S. 1101, 106 S.Ct. 882, 88 L.Ed.2d 918 (1986).

299/ Pelletier, *Liability of a Manufacturer for Products Defectively Designed by the Government*, 23 Boston College Law Rev. 1025 (July 1982); see *Johnson v. United States*, 568 F.Supp. 351, 354 (D. Kan. 1983).

300/ Id.

unsafe.^{301/} Under another variation, the defense applies where an independent contractor follows the plans or specifications strictly and has no knowledge or reason to know they might pose a risk of harm.^{302/} Where, however, a contractor has special knowledge or expertise, there may be a higher standard of care.^{303/} In essence, it appears that this defense applies only when the contractor is not negligent under the circumstances.^{304/}

Although the defense has always been applied to protect contractors from negligence claims, the courts are divided as to whether it extends to strict liability theories.^{305/} Some courts find strict liability suits precluded by the defense. For instance, New York recognizes that where a machine is assembled without a manufacturing defect based on plans and specifications of the buyer, the manufacturer is not strictly liable for an injury caused by the product (manufacturers defense).^{306/} In the government contract area, one court found that the defense is based in part on the contractors' entitlement to share in the government's immunity.^{307/} Thus, because a strict liability claim could not be brought against the government, the court held that the contractor was entitled to utilize the contract specifications defense in a strict liability action.^{308/} In the private contract area, one court granted summary judgment dismissing strict product liability claims arising from the allegedly defective design of a machine since the machine had been assembled free of a manufacturing defect and in accordance with the plans and specifications of the buyer.^{309/} The court noted that the machine had operated for a number of years without causing serious injury and used that as a factor showing that the design defect could not have easily been detected.^{310/}

Other courts have held that the contract specifications defense is not available to a manufacturer in an action based on a strict liability theory.^{311/} These

301/ *Rest. Torts* 2d § 404, comment a: *Johnston v. United States*, 568 F.Supp. at 354; *Littlehale v. E.I. Du Pont de Nemours & Co.*, 268 F.Supp. 791 (S.D. N.Y. 1966) *aff'd* 380 F.2d 274 (2d Cir. 1966); *Housand v. Bra-Con Industries, Inc.*, 751 F.Supp. 541 (D. Md. 1990) (applying Maryland law); see *Challoner v. Day & Zimmerman, Inc.*, 512 F.2d 77, 82 (5th Cir. 1975), *vacated on other grounds*, 423 U.S. 3, 96 S.Ct. 197, 46 L.Ed.2d 3, (1975); *Bynum v. FMC Corp.*, 770 F.2d 556 (5th Cir. 1985).

302/ *Dorse v. Armstrong World Industries, Inc.*, 513 So.2d 1265 (Fla. 1987).

303/ *Johnston v. United States*, 568 F.Supp. at 354; *Rest. Torts* 2d § 289(b) & comment m.

304/ See *Johnston v. United States*, 568 F.Supp. at 354.

305/ See *Bynum v. FMC Corp.*, 770 F.2d 556, 563 (5th Cir. 1985) (applying contract specifications defense); *Brocklesby v. United States*, 767 F.2d at 1295 (9th Cir. 1985) (California law does not recognize contract specifications defense).

306/ *Munger v. Heiden Mfg. Cop.*, 90 A.D.2d 645, 646, 456 N.Y.2d 271 (1982); *Kern v. Roemer Machine & Welding Co.*, 820 F.Supp. 719, 721 (S.D. N.Y. 1992).

307/ *Nielsen v. George Diamond Vogel Paint Co.*, 892 F.2d 1450 (9th Cir. 1990) (applying Idaho law).

308/ *Id.*, see *Sanner v. Ford Motor Co.*, 144 N.J. Super. 1, 364 A.2d 43 (1976), *aff'd* 154 N.J. Super. 407, 381 A.2d 805, *certif. denied*, 75 N.J. 616, 384 A.2d 646.

309/ *Kern v. Roemer Machine & Welding Co.*, 820 F.Supp. at 721.

310/ *Id.*

311/ See *Challoner v. Day & Zimmerman, Inc.*, 512 F.2d 77, *vacated on other grounds*, 423 U.S. 3, 96 S.Ct. 167, 46 L.Ed.2d 3 (1975); *Lenher v. NRM Corp.*, 504 F.Supp. 165 (D. Kan. 1980); *Johnston v. United States*, *supra*, 568 F.Supp. at 354-355 (applying Kansas law); *McLaughlin v. Sikorsky Aircraft*, 148 Cal.App.3d 203, 195 Cal.Rptr. 764 (1983) (applying California law); *Brocklesby v. United States*, 767 F.2d at 1295 n.10 (applying California law).

courts reason that since the defense is based on an absence of negligence in following another's contract specifications and negligence is irrelevant to strict liability, the defense is inapplicable to strict liability claims.

Whether contractors following designs prepared by the government or others might be liable for strict product liability, rather than just for their own negligence, will be an important issue in the AVCS context. If contractors are strictly liable for the negligent designs and specifications provided by others, they may be reluctant to work on AVCS projects since the threat of liability in the event of a catastrophic accident could eclipse any benefit derived from the contract to perform work. In some states, vicariously liable tortfeasors in a strict liability action may be entitled to full or partial equitable indemnity from the manufacturer or designer.^{312/} Rather than rely on such potential implied immunity, contractors could require by contract that designers completely indemnify them for any damages arising from the product's negligent design, and for costs of defense, in the event a lawsuit is filed. The government has entered into such indemnity agreements with military contractors.^{313/} Contractors may also require designers to maintain adequate insurance so that they can be sure the designers will have sufficient resources to indemnify them. Contractual indemnity provisions probably will be important in the AVCS context because of the potential for large damage awards which could put a company out of business. As a result, Congress may want to consider supplanting state law and legislatively extending the contract specifications defense to strict liability actions.

Although the contract specifications defense is interrelated with the government contractor's defense, unlike that defense, it extends to both private party contracts and government contracts.^{314/} For instance, the defense barred an action against manufacturers of portions of an automobile assembly line in compliance with the automobile manufacturer's instructions and under the supervision of the automobile manufacturer's engineers.^{315/} Accordingly, the contract specifications defense has a potentially far greater reach than the government contractor's defense.

In the AVCS context, the contract specifications defense will provide some protection for those who assemble -- as opposed to those who design -- products that will comprise the infrastructure necessary to implement AVCS on a large scale. However, in states allowing claims for strict liability against contractors who do no more than follow specifications, the defense provides little comfort unless Congress prohibits such suits. Even the availability of contractual indemnity and insurance cannot completely erase the specter of massive liability arising from catastrophic accidents.

312/ California has a procedure whereby a party who prevails on a claim for implied indemnity may seek recovery of its attorneys' fees provided certain conditions are met. Cal. Code Civ. Proc. § 1021.6; see *Uniroyal Chemical Co. v. American Vanguard Corp.*, 203 Cal.App.3d 285,249 CalRptr. 787 (1988).

313/ See, e.g., *Trevino v. General Dynamics Corp.*, 865 F.2d 1474, 1489 (5th Cir.), cert. denied, 493 U.S. 935, 110 S.Ct. 327, 107 L.Ed.2d 317 (1989).

314/ *Spangler v. Kranco, Inc.*, 481 F.2d 373 (4th Cir. 1973); *Davis v. Henderlong Lumber Co.*, 221 F.Supp. 129 (N.D. Ind. 1963).

315/ *Housand v. Bra-Con Industries, Inc.*, 751 F.Supp. 541 (D. Md. 1990) (applying Maryland law).

As this discussion demonstrates, the tort theories available to persons injured in an automobile accident involving AVCS products are diverse. Before considering possible legislative reforms which could decrease potential tort liability, we analyze the impact of contribution and indemnity principles and the availability of insurance coverage on the ability of private entities to absorb the financial impact of tort suits arising from AVCS.

J. Contribution And Indemnification

If AVCS products fail and injure persons or property, all those involved in the development, manufacture, and retail of the products face substantial potential liability. In many cases, any party with a connection to a failing AVCS product will be sued, even though the party bears little or no responsibility for the ultimate failure which caused the damage. In these situations, parties may be expected to try to shift the costs of any loss to other, presumably more responsible, parties in the chain of misconduct. Two distinct concepts, contribution and indemnity, have developed which address the distribution of losses among potentially jointly liable parties.

1. Contribution

Contribution permits a tortfeasor against whom a judgment has been rendered to recover from other liable joint tortfeasors the portion of the total payment that the latter ought to pay or bear, based on equal division of the total payment among all the liable parties.^{316/} This is a partial redistribution of damages among liable parties who caused the injuries, historically permitted only where the alleged wrongdoing constituted negligence rather than willful or intentional conduct.^{317/} Although the common-law traditionally disallowed contribution among joint tortfeasors where one had discharged the claim of the injured plaintiff,^{318/} today most states have adopted some form of statute permitting contribution among joint tortfeasors.^{319/}

Contribution is related to the doctrine of joint and several liability,^{320/} which entitles the plaintiff to recover her judgment in whole or in part from any jointly liable defendant.^{321/} This general rule has been eclipsed in several states that have

316/ See *Black's Law Dictionary* 280 (5th Ed. 1979); *Dawson v. Contractors Transport Corp.*, 467 F.2d 727,729 (D.C. Cir. 1972).

317/ See, *Heinrich v. Peabody Int'l Corp.*, 139 Ill.App.3d 289, 93 Ill. Dec. 554,486 N.E.2d 1379, 1382 (1985), *aff'd in part, rev. in part*, 117 Ill.2d 162, 109 Ill. Dec. 821, 510 N.E.2d 889 (1987); Cal. Code Civ. Proc. § 875(d). The United States Supreme Court has been reluctant to find rights of contribution or indemnity among those potentially liable under federal statutes. See *Texas Industries, Inc. v. Radcliff Materials*, 451 U.S. 630, 101 S.Ct. 2061, 68 L.Ed.2d 500 (1981) (no contribution under Clayton or Sherman Acts); *Northwest Airlines v. Transport Workers Union*, 451 U.S. 77, 101 S.Ct. 1571, 67 L.Ed.2d 750 (1981).

318/ *Merryweather v. Nixan*, 8 Term. Rep. 186, 101 Eng. Rep. 1337 (1799).

319/ *Prosser and Keeton On Torts*, Lawyers Edition, § 50 at 337 (5th Ed. 1984).

320/ See, e.g., *Cal. Civ. Code* § 1430 (obligations may be joint, several or joint and several)

321/ See *State Farm Mutual Auto Insurance Co. v Continental Casualty Co.*, 264 Wis. 493,59 N.W.2d 425,426-27 (1953); see, e.g., *Conley v. J.L.G. Industry, Inc.*, 97 Ill.2d 104, 73 Ill. Dec. 337,454 N.E.2d 197,204 (1983); *American Motorcycle Association v. Superior Court*, 20 Cal.3d 578, 586-590, 146 Cal.Rptr. 182, 578 P.2d 899 (1978); *Tucker v. Union Oil Co. of California*, 100 Idaho

adopted comparative fault systems which apportion an individual defendant's liability based on that defendant's causal responsibility.^{322/} However, even in those states, a tortfeasor may still be liable to the plaintiff if the other tortfeasors cannot pay their share.^{323/} The issue of contribution among tortfeasors thus arises when one defendant pays more than that defendant's share of the common judgment.^{324/}

Courts use two basic methods for determining a party's equitable share. Some courts follow the equality rule, under which damages are apportioned equally among the joint tortfeasors.^{325/} Other courts use comparative contribution, which seeks to apportion damages according to the party's respective fault.^{326/}

There is much variation in the way different states approach contribution.^{327/} Some jurisdictions still preclude those who commit intentional torts from recovering contribution,^{328/} while other states permit contribution.^{329/} This distinction will probably have little effect in the AVCS context since most liability will arise from negligent, rather than intentional, conduct and there will be a right to contribution.

There also is the question whether a tortfeasor who has settled with the plaintiff may seek contribution from other tortfeasors. Some statutes refuse to permit contribution unless a judgment has been rendered which fixes both liability and amount.^{330/} In other states, a tortfeasor who settles with the plaintiff may sue for contribution, although the settlor may have the burden of proof as to its own liability, the amount of damages and the reasonableness of the settlement.^{331/} In any event, the contribution defendant must have been a tortfeasor and originally liable to the

590, 603 P.2d 156, 166 (1979); *Johnson v. Billot*, 109 Mich.App. 578, 311 N.W.2d 808,810 (1981); *Mayday v. Yellow Taxi Co.*, 311 N.W.2d 849, 850 (Minn. 1981); *Wisconsin Natural Gas Co. v. Ford, Bacon & Davis Construction Corp.*, 96 Wis.2d 314, 291 N.W.2d 825, 834 (1980).

322/ See, e.g., *Kansas Stat. Ann.*, § 60-258; *Ohio Rev. Code* § 2315,19(A)(2); *Vt. Stat. Ann. Title 12*, § 1036; *Pa. Stat. Title 42* § 7102.

323/ But see, *Cal.Civ.Code* §§ 1431.1-1431.2 (defendant in personal injury, property damage or wrongful death action is only liable for amount of noneconomic damages allocated to that defendant in accordance with percentage of fault).

324/ *Prosser and Keeton On Torts, supra*, § 67 at 476.

325/ See, e.g., *Lincenberg v. Issen*, 318 So.2d 386, 393-94 (Fla. 1975); *Sanchez v. City of Espanola*, 94 N.M. 676,615 P.2d 993,995 (App. 1980).

326/ See, e.g., *Tucker v. Union Oil Co. of California*, 603 P.2d at 164-165; *N.D. Cent. Code* 09-10-07; *Vernon's Am. Tex. Civ. Stat. Art. 2212a* § 2.

327/ The discussion that follows relies heavily on *Prosser and Keeton On Torts, supra*, § 50 at 338-339.

328/ See *Anderson v. Local Union 3, Intern. Brotherhood of Electrical Workers, AFL-CIO*, 751 F.2d 546, 547-548 (2d Cir. 1984) (contribution not awardable to defendant who violated Title VII of 1964 Civil Rights Act); see also *Turner v. Kirkwood*, 49 F.2d 590, 595-596 (10th Cir. 1931), cert. denied, 284 U.S. 635, 52 S.Ct. 18,76 L.Ed. 540 (1931).

329/ See, e.g., *Judson v. Peoples Bank & Trust Co. of Westfield*, 17 N.J. 67, 110 A.2d 24, 36 (1954), *aff'd*, 25 N.J. 17, 134 A.2d 761,770 (1957).

330/ See, e.g., *Harger v. Caputo*, 420 Pa. 528, 218 A. 2d 108, 111 (1966); *Moris v. Kospeich*, 253 La. 413, 218 So.2d 316, 317 (1969).

331/ See, e.g., *Farmers Mutual Auto Insurance Co. v. Milwaukee Auto. Insurance Co.*, 8 Wis.2d 512, 99 N.W.2d 746,750 (1959); *Clemmons v. King*, 265 N.C. 199, 143 S.E.2d 83,87 (1965); *Consolidated Coach Corp. v. Burge*, 245 Ky. 631, 54 S. W.2d 16,18 (1932).

plaintiff.^{332/} Thus, where a defendant is not liable, as where an absolute defense applies, that defendant is not liable for contribution.

Third, some states have good faith settlement statutes or procedures which alter the usual rule that a defendant released from liability by virtue of a release or covenant not to sue is not released from contribution. Such statutes usually preclude contribution from a defendant who has settled “in good faith” with the plaintiff.^{333/} Of course, the remaining defendants should be entitled to a reduction in damages equal to the amount paid by, or the proportional negligence of, the settling defendant.^{334/}

An understanding of the basic principles with respect to the application of contribution is important for those involved in AVCS.^{335/} It has a significant impact once litigation has begun and the parties involved are considering settlement and litigation strategy. Importantly, by providing for indemnity in contracts (see discussion below) and anticipating issues of how liability should be apportioned before accidents occur, those involved with AVCS may be able to avoid litigating contribution issues.

2. Indemnity

Indemnity is generally defined as an obligation resting on one party, the indemnitor, to make good a loss or damage that another party, the indemnitee, has incurred.^{336/} Classically, indemnity refers to reimbursement in full of one who has discharged a common liability -- a complete shift of damages.^{337/} Thus, in product liability situations, product sellers may be indemnified by product manufacturers, because, while the seller is technically a liable party in the claim of distribution, the manufacturer is actively or primarily responsible for the product's defect.^{338/}

332/ *Rees v. Dallas County*, 372 N.W.2d 503, (Iowa 1985)

333/ See Cal. Code Civ. Proc. § 877.6: *American Motorcycle Association v. Superior Court*, 20 Cal.3d at 604; *Tech-Built, Inc. v. Woodward-Clyde & Associates*. 38 Cal.3d 488, 213 Cal.Rptr. 256, 698 P.2d 159 (1985); see also *Donovan v. Robbins*, 752 F.2d 1170 (7th Cir. 1985) (discussing “settlement bar” rule). Good faith settlement statutes and procedures may also preclude seeking implied indemnity from a defendant who settles in good faith. See, e.g., Cal. Code Civ. Proc. § 877.6, *Bay Development Ltd. v. Superior Court*, 50 Cal.3d 1012, 1028-1032, 269 Cal.Reptr. 720, 791 P.2d 290 (1990) (good faith settlement bars claim for implied contractual indemnity but not a claim for express contractual indemnity).

334/ See, e.g., *Yost v. State*, 640 P.2d 1044, 1048 (Utah 1981); *Rogers v. Spady*, 147 N.J. Super. 274, 371 A.2d 285, 287 (1977); *Bartels v. City of Williston*, 276 N.W.2d 113, 121 (N.D. 1979).

335/ There are other contribution issues beyond the scope of this paper. For instance, liability insurers who have paid plaintiff's judgment and have become subrogated to the claim can usually sue for contribution. See, e.g., *Coble v. Lacey*, 257 Minn. 352, 101 N.W.2d 594, 600 (1960); *Hudgins v. Jones*, 205 Va. 495, 138 S.E.2d 16, 31 (1964).

336/ See *Phoenix Ins. Co. v. United States Fire Ins. Co.*, 189 Cal.App.3d 1511, 1526, 235 Cal.Rptr. 185 (1987).

337/ See, e.g., *Green v. United States Department of Labor*, 775 F.2d 964, 971 (8th Cir. 1985); *Hillier v. Southern Towing Co.*, 714 F.2d 714 (7th Cir. 1983); *Pension Benefit Guaranty Corp. v. Oumiet Corp.*, 711 F.2d 1085 (1st Cir. 1983), cert. denied, 664 U.S. 961, 104 S.Ct. 393, 78 L.Ed.2d 337 (1983). Indemnity must be distinguished from contribution, which refers to the distribution of loss among tortfeasors.

338/ See for example situations where an employer is vicariously liable for his agents tort [*Canadian Indemnity Co. v. United States Fidelity & Guaranty Co.*, 213 F.2d 658 (9th Cir. 1954)]; *Insurance*

Indemnity may apply even where a party is not free from fault, as where the party negligently relies on the due care of another.^{339/} An AVCS manufacturer may have to indemnify a retailer of its goods who incurs liability as a result of negligent reliance upon the manufacturer's proper care.

Some courts have described a right to indemnity where the indemnitee is guilty of mere "passive" as opposed to "active" negligence, although it appears that this difficult distinction is being eroded.^{340/} Indeed, with the advent of comparative fault, this distinction may disappear completely.^{341/}

Indemnity arises from one of two general sources. First, it may arise from an express contractual provision which establishes in one party a duty to hold another party harmless under certain circumstances.^{342/} Second, it may be implied from equitable considerations involving contractual language not specifically dealing with indemnification or from the equities of a particular case.^{343/}

Generally, if there is an express contractual right to indemnity, contribution rules and statutes will not apply.^{344/} Thus, AVCS sellers and distributors may be able to alter contribution rules by including express indemnity provisions in their contracts with manufacturers. Contribution rules also do not apply where implied equitable indemnity requires one party to fully reimburse another.

Contribution and indemnity principles will allow the developers, distributors and retailers of AVCS products to redistribute much of the cost of lawsuits arising out of these products at least as long as the manufacturers have the resources to pay the judgments. To transfer the cost, however, they may still have to incur substantial legal fees (which may not be reimbursable). Accordingly, private entities should anticipate these issues at the contractual stage and include contract provisions providing for express indemnity in situations where another entity will be primarily responsible in the event of any accidents or where one party is in a better position to take the precautions necessary to avoid an accident. Such contractual provisions will allow the parties

Co. of North America v. State Farm Auto. Insurance Co., 663 P.2d 953, 955 (Alaska 1983)], or where an automobile owner is liable for the driver's wrongdoing. *Fountainebleau Hotel Cop. v. Postal*, 142 So.2d 299, 300 (Fla. App. 1962); *Traub v. Dinzler*, 309 N.Y. 395, 131 N.E.2d 564, 567

339/ See, e.g., *Fireside Motors, Inc. v. Nissan Motor Corp.*, (1955). 1386, 1390 395 Mass. N.E.2d 366, 479 (1985); *Tromza v. Tecumseh Products Co.*, 378 F.2d 601 (3rd Cir. 1967) (distinguishing between primary and secondary liability of two parties each responsible for plaintiffs injury).

340/ See *Heinrich v. International 5 10 N.E.2d at 891. Peabody Corp.*,

341/ See *Brochner v. Western Insurance Co.*, 724 P.2d 1293, 1299 (Colo. 1986).

342/ See, e.g., *General Elevator Co. v. District of Columbia*, 481 A.2d 116, 117 (D.C. App. 1984); *Smith v. Clark Equipment Co.*, 136 Ill.App.3d 800, 91 Ill. Dec. 520, 483 N.E.2d 1006, 1009 (1985).

343/ See, e.g., *Bay Development Ltd v. Superior Court*, 50 Cal.3d 1012 1032-1033, 269 Cal.Rptr. 720: 791 P.2d 290 (1990); *Farmers Cooperative Co. v. Stockdales' Corp.*, 366 N.W.2d 184, 186 (Iowa 1985).

344/ See, e.g., *Melicha v. Frank*, 78 SD. 58, 98 N.W.2d 345, 346-47 (1959); *Weis v. A.T. Hipke & Sons*, 271 Wis. 140, 72 N.W.2d 715, 717 (1955).

themselves to determine how liability should be distributed, including the responsibility to pay the often enormous costs of defense.^{345/}

Not only will clearly drafted contractual provisions permit a rational shifting of costs, they will allow the parties to proceed with the introduction of AVCS products with more certainty and confidence about their exposure to damages for losses and injuries resulting from such products. Equitable indemnity, while still a viable claim in many instances, does not provide the same certainty.

K. Impact Of Insurance Coverage

Indemnity provisions are only as good as the depth of the indemnitor's pocket, and indemnity contracts are not likely to transfer the liability of manufacturers. Modern product liability jurisprudence assumes that deep pockets such as manufacturers and sellers of consumer goods are able to insure against the risk of product liability judgments and settlements. The availability of reasonably priced insurance for AVCS manufacturers and sellers certainly will impact the willingness of the private sector to develop AVCS technology.

Comprehensive general liability policies ("CGL") usually provide coverage for negligence and strict liability resulting in "bodily injury" or "property damage," as those terms are defined in the policies. While insurance policies vary, the 1988 form drafted by the Insurance Services Office, Inc.^{346/} defines "bodily injury" as "bodily injury, sickness or disease sustained by a person, including death resulting from any of these at any time." Product liability actions alleging death or any type of bodily injury caused by an automobile accident involving AVCS will fall within this definition. Likewise, damage to automobiles and the loss of their use comes within the standard definition of "property damage."^{347/} Comprehensive general liability policies consequently will be responsible generally for payment of damages or settlements, and usually for defense costs, as a result of product liability suits alleging bodily injury or property damage.

Not all cases alleging bodily injury or property damage are insured claims, however. In many states and under the language of most comprehensive general liability policies,^{348/} coverage is not permitted where the insured is said to have

345/ As discussed below, the government could also provide indemnity for AVCS developers and manufacturers to encourage their involvement in AVCS.

346/ The Insurance Services Office ("ISO") is the insurance carriers' arm which drafts standard policy language for use by insurers across the nation. *Fireguard Sprinkler Systems v. Scottsdale Ins. Co.*, 864 F.2d 648, 652 (9th Cir. 1988).

347/ "Physical injury to tangible property, including all resulting loss of use of that property." 1988 ISO Commercial General Liability Coverage Form.

348/ The standard policy requires that the alleged injury arise from an 'occurrence,' defined as "an accident... which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured." The carriers contend that this policy provision limits their responsibility to defend or indemnify their insured, and the issue is unresolved. *E.g., United States Pacific Ins. Co. v. McGuire Co.*, 229 Cal.App.3d 1560, 1566 n.2, 281 Cal.Rptr. 375 (1991).

“expected or intended” to cause harm by engaging in willful or intentional conduct. The correct interpretation of this phrase varies from state to state.^{349/}

The insurers contend, and some courts have agreed, that if the manufacturer should have known that its conduct would cause injury, then the harm was expected or intended and no duty to defend or indemnify applies. In *City of Carter Lake v. Aetna Cas. & Surety Co.*,^{350/} the Eighth Circuit found that City of Carter Lake expected the repeated failures of its sewage pump to cause property damage if the city knew or should have known there was a substantial probability that the pump would malfunction. However, even that court noted that insurance would not be denied merely because the damage was reasonably foreseeable.^{351/} Under this pro-insurer standard, it is possible that an AVCS manufacturer could discover that its insurance coverage does not extend to product liability actions involving a particular defect or malfunction, if it could be found that the manufacturer knew or should have known that there was a substantial probability that the system was defective and could cause injury. AVCS manufacturers and sellers should take great care in purchasing insurance to obtain adequate and complete coverage.

The states also are split as to whether an insurer can indemnify punitive damage awards -- a not uncommon result of a product liability trial. Twenty-five states permit indemnification of punitive damage awards in order to allow victims to receive greater compensation, to protect businesses from ruinous judgments, and to discourage vigilante justice.^{352/} The balance of the states preclude indemnification of punitive damage awards on the ground that punitive damages will not serve to punish and deter egregious conduct if indemnified.^{353/} Even in those states which preclude coverage of punitive damage awards, the award may still be insurable if rendered in another state based on a standard of culpable conduct below that required to award punitive damages in the forum state. For instance, in *Continental Cas. Co. v. Fibreboard Corp.*,^{354/} the court found that California law did not preclude the indemnification of a punitive damage award rendered in West Virginia because that award could have been based on mere reckless conduct, which is insufficient to award punitive damages in California.^{355/} The availability of insurance to pay punitive damage awards thus usually depends on which states' law applies to the interpretation of the defendant's insurance policy.

349/ *Peterson v. Superior Court*, 31 Cal.3d 147, 158-59, 181 Cal.Rptr. 764, 642 P.2d 1305 (1982) (permitting insurance for all forms of aggravated negligence): *New Castle County v. Hartford Acc. and Indem. Co.*, 933 F.2d 1162, 1191 Cir. Delaware(3rd 1991) (applying law).

350/ 604 F.2d 1052, 1059 Cir.(8th 1979).

351/ *Id.* at 1058-1059.

352/ E.g., *Abbie Urigen Oldsmobile Buick, Inc. v. United States Fire Ins. Co.*, 95 Idaho 501, 511 P.2d 783, 789 (1973); *First Nat'l Bank v. Fidelity & Deposit Ins. Co.*, 283 Md. 228, 389 A.2d 359,366 (1978); *Hensley v. Erie Ins. Co.*, 168 W.Va. 172,283 S.E.2d 227,233 (1981); *Lazenby v.*

353/ *Universal Underwriters Ins. 214 Tenn. 383 S.W.2d 5Co., 639, 1, (1964).*

E.g., *City Products Corp. v. Globe Indemnity Co.*, 88 Cal.App.3d 31, 39, 151 CalRptr. 474 (1979).

354/ 762 F.Supp. 1368, 1373 (N.D. Cal. 1991), *aff'd* 953 F.2d 1386 (9th Cir. 1991) vacated and remanded for consideration of mootness, ____ U.S. ____, 113 S.Ct. 399, 121 L.Ed.2d 399(1992).

355/ *Id.* at 1373.

Assuming that insurance carriers do not anticipate catastrophic losses from AVCS-related claims, AVCS manufacturers, distributors and retailers should be able to purchase CGL policies which will cover many of the tort actions arising from AVCS-related accidents. The cost of such policies, however, depends on how the insurers rate the risk. Moreover, should AVCS products result in massive lawsuits, the AVCS industry could find itself in the same position as the asbestos industry in the early 1980s -- unable to purchase insurance anywhere which did not exclude the risk.

IV. POSSIBLE LEGISLATIVE SOLUTIONS

Having discussed in detail the possible tort theories which could restrict the development of AVCS, we turn now to an analysis of some of the legislative alternatives which could limit or even eliminate some or all forms of tort liability for AVCS-related accidents. According to one study, investment decisions have been delayed or adversely affected by concerns about product liability exposure.^{356/}

Of all of the types of intelligent vehicle highway systems contemplated, certain aspects of AVCS pose the greatest threat of massive product liability exposure. Unlike ATIS and ATMS, the automated highway requires the driver to transfer control of the vehicle to the technology. Should an accident happen driver error is unlikely to be a factor, and all those in the chain of distribution are likely to be held strictly liable. Automated highways thus are quite different from existing forms of AVCS, such as anti-lock brakes and cruise control, where the driver retains control.^{357/} Consequently, private entities may be unwilling to participate in automated highways without substantial legislative changes to product liability law.

On the other hand, no change in the law may be needed to encourage the development of other, less drastic, forms of AVCS. Collision avoidance systems, vision enhancement devices, pre-collision restraint deployment are more similar to anti-lock brakes and cruise control in that these devices merely augment the driver rather than replace him. The risk of liability to the manufacturer and retailer therefore is not overwhelming, and changes to the law may not be necessary to spur development of these devices.

Should the Department and Congress believe that existing tort law is a significant impediment to development of some or all types of AVCS, Congress could enact legislation which would greatly alter product liability law nationwide as it relates to accidents caused by AVCS.^{358/}

356/ K. Syverud, *Legal Constraints To The Research, Development, And Deployment Of IVHS Technology In The United States*, IVHS America Annual Meeting 418 (1993).

357/ Indeed, we were unable to find any cases in which manufacturers or sellers of cruise control devices were held liable for an automobile accident.

358/ Most of the following proposed solutions will combine legislation and regulation. Many will not be possible without some legislative change. To the degree it is within the Department of Transportation's current authority, the Department may be able to impose some of the solutions discussed below as a condition of disbursement of funds to states for use in AVCS development.

A Preemption Of State Law Remedies

States individually could alter tort law, but the likelihood of enactment of relatively uniform reforms is remote at best. The most obvious federal legislative remedy to the patchwork of state tort laws is the enactment of a uniform set of federal laws which expressly preempt state laws that impose more stringent requirements on AVCS manufacturers and sellers.^{359/} No doubt many if not all AVCS manufacturers and sellers will favor such an approach, as they recognize the advantage of a single law governing their liability rather than 50 potentially different laws. Preemption provides business with the greatest amount of predictability of any legislative solution short of absolute immunity. On the other hand, states probably will oppose preemption as contrary to our federal system, which recognizes the rights of states to make public policy decisions regarding the imposition of tort liability. The public policy choice is for the Department of Transportation and Congress.

B. Modifications In Strict Liability

Should 'the federal government preempt state laws, it will need to determine upon what basis and under what circumstances strict liability will be imposed,. The most drastic legislative remedy would be simply to preclude victims from suing AVCS manufacturers or sellers under a strict liability or breach of implied warranty theory, limiting them to establishing negligence. The rationale for such legislation would be to encourage the development of AVCS by limiting the liability of AVCS companies to negligent design, manufacture, or failure to warn. The greater difficulties in proof inherent in negligence as compared to strict liability should have such an impact, while still encouraging AVCS companies to utilize due care in their AVCS activities. The contrary policy concern is that deserving injured plaintiffs will have more difficulty recovering damages.

Alternatively, Congress could permit strict liability claims to be brought, but impose certain nationwide restrictions which would render them less attractive to victims and less costly to industry. For instance, should a court determine that the accident in question was the result of an openly obvious condition, then no liability would be imposed. Or Congress could model legislation on an array of state statutes governing the effect of compliance with federal regulations, either deeming such compliance to constitute a complete defense, or enacting rebuttable presumptions depending on whether such regulations were followed. Such laws would give AVCS manufacturers, designers and sellers substantial comfort, as they would be able to minimize their liability by ensuring compliance with federal standards. However, federal regulations

^{359/} Preemption may also occur impliedly, either because Congress has occupied the entire field or because of an actual conflict between federal and state law. However, should Congress desire to establish a nationwide law governing AVCS, it should draft legislation which expressly rather than impliedly preempts state common and statutory law to minimize litigation and inconsistent judicial interpretations. See *Cipollone v. Liggett Group, Inc.*, ___ U.S. ___ 112 S.Ct. 2608, 2617, 120 L.Ed.2d 407 (1992). The National Traffic And Motor Vehicle Safety Act of 1966, 15 U.S.C. §§ 1381 et seq., for instance, has been interpreted by a few courts to expressly preempt state products liability law, and other courts are split as to whether preemption is implicit. See *Heath v. General Motors Corp.*, 756 F.Supp. 1144, 1146-1150 (S.D. Ind. 1991).

would have to be comprehensive or issues would arise as to whether Congress preempted strict liability stemming from design features not expressly regulated.

Another approach would be to deem that state of the art evidence is admissible in a strict liability action, providing manufacturers with the opportunity to defend themselves by showing that their conduct was reasonable in light of industry knowledge. Or strict liability could be avoided if the plaintiff misused the product in question, even if that misuse was foreseeable. On the other hand, such an alteration in product liability law would be unnecessary if the federal government promulgated regulations which required manufacturers to take reasonable measures to counteract foreseeable misuses.

C. Modifications To Failure To Warn Theory Of Liability

Of at least equal importance would be a legislative curtailment of potential liability for failure to warn (in negligence or strict liability) by mandating specified warnings for known hazards, and precluding states from imposing liability for failing to utilize a different warning. Case law indicates, however, that such legislation would have to be carefully drafted to preclude state product liability suits.

The mere fact that a federal agency promulgates regulations governing the content of warnings does not necessarily result in preemption. For instance, the Food and Drug Administration promulgated regulations which detailed twenty items which must be included in warnings concerning oral contraceptives provided to patients.^{360/} Nevertheless, at least one court has found that drug manufacturers may still be liable for failure to include specific warnings of the risk of stroke.^{361/}

In that case, the FDA did not mandate the precise wording of the warning. But even where Congress has required certain warnings preemption does not necessarily result. In *Cipollone v. Liggett Group, Inc.*^{362/} the Supreme Court interpreted Congress' 1965 act prescribing a particular warning label on cigarettes as merely precluding states from requiring particular warning labels, but not precluding individuals from bringing damages actions.^{363/} While Congress' 1969 amendments to this law did preempt claims of failure to warn through advertising or promotional efforts, Congress failed to preempt such claims based on actions unrelated to advertising or promotion.^{364/} Construing Congress' law narrowly, the Supreme Court also refused to

360/ 21 C.F.R. § 310.501.

361/ *MacDonald v. Ortho Pharmaceutical Corp.*, 394 Mass. 131, 475 N.E.2d 65, 71-72 (1985), Cert. denied, 474 U.S. 920, 106 S.Ct. 250, 88 L.Ed.2d 258 (1985).

362/ U.S. ___, 112 S. Ct. 2608, 2618, 120 L.Ed.2d 407 (1992).

363/ The 1965 legislation merely indicated that "No statement relating to smoking and health shall be required in the advertising of [properly labelled] cigarettes." 15 U.S.C. §§ 1331-1340.

364/ The Supreme Court was influenced by the fact that the law stated that 'No requirement or prohibition based on smoking and health shall be imposed under State law with respect to the advertising or promotion of any cigarettes the packages of which are labeled in conformity with the provisions of this Act.' (Emphasis added.)

find preemption of-common law claims for breach of express warranty, fraud, misrepresentation, and conspiracy.^{365/}

These rulings do not indicate that preemption of failure to warn and other tort theories is impossible: only that any such legislation should be explicit in indicating that no liability can be imposed whether in negligence, strict liability, or breach of warranty for failure to include a different warning label on the AVCS product than that mandated by federal law.

D. Preclusion Of All Suits Against The Private Sector'

A more drastic alternative is to preclude suits against the private sector entities involved in AVCS altogether, limiting victims to filing claims against the United States under the Tort Claims Act. The Atomic Testing Liability Act provides such an exclusive remedy against the federal government for injuries based on radiation exposure caused by a contractor who was carrying out an atomic weapons testing program under a contract with the United States.^{366/} The federal government adopted a similar approach in the 1970s to combat the Swine flu epidemic,^{367/} which withstood various constitutional challenges.^{368/} The impetus for that law, however, was a concern for the public health caused by an outbreak of the flu and the refusal of the insurance industry to insure drug manufacturers who sold the vaccine.^{369/} The federal government should consider whether the adverse impact of fear of liability will sufficiently impede the development of AVCS to warrant such drastic measures.

E. Limitation On Amount And Type Of Compensatory Damages

Another possible legislative solution to the product liability explosion is to preclude liability nationwide for certain types of damages caused by AVCS-related accidents. The Death on the High Seas Act, for example, precludes recovery of non-pecuniary losses, such as loss of society or loss of consortium, in maritime wrongful death actions.^{370/} To avoid unnecessary litigation, any such legislation should specifically enumerate the categories of damages (i.e., pain and suffering, funeral expenses, medical expenses, etc.) which are permissible.

A less drastic alternative would be a federal limitation on the amount an injured victim could recover for such non-economic damages, such as pain and suffering and emotional distress. California undertook this approach to medical malpractice claims in 1975 by enacting the Medical Injury Compensation Reform Act ("MICRA"),^{371/} which provides a cap of \$250,000 for non-economic damages in

365/ Id., 112 S.Ct. at 2623-2625.

366/ 42 U.S.C. § 2212.

367/ The National Swine Flu Immunization Program, P.L. 94-380, amending section 317 of the Public Health Service Act, 42 U.S.C. § 247(b).

368/ *Sparks v. Wyeth Laboratories, Inc.*, 431 F.Supp. 411 (W.D. Okl. 1977); *Wolfe v. Merrill National Laboratories, Inc.*, 433 F.Supp. 231, 236-37 (M.D. Tenn. 1977).

369/ *Wolfe v. Merrill Nat. Laboratories, Inc.*, 433 F.Supp. at 233.

370/ 46 U.S.C. § 762; *Breland v. Western Oceanic, Inc.*, 755 F.Supp. 718 (W.D. La. 1991).

371/ Cal. Civ. Code § 3333.2.

medical malpractice actions against health care providers. The courts held that this statute does not violate the plaintiffs equal protection guarantees because the statute was supported by a rational basis -- the insurance crisis engendered by the explosion of medical malpractice cases with stupendous damage awards.^{372/} Juries are not informed of the cap so that their awards will not be influenced by its existence,^{373/} and any reduction of damages for the plaintiffs comparative fault is made before the cap is applied.^{374/} Similarly, the Warsaw Convention^{375/} provides a limitation on the amount of damages an injured passenger on an international flight can recover from an airline because at the time the then-fledgling airline industry was perceived to need a boost.^{376/}

The advantage of this type of cap is the predictability it provides defendants. AVCS companies would know that no matter how many lawsuits are filed against them for AVCS-related accidents, their liability is limited.^{377/} On the other hand, severe injustice could be rendered if the cap is too low, particularly given the serious injuries which automobile accidents can inflict.^{378/}

F. Limitations On Punitive Damage Awards

While compensatory damages, as inexact as they may be, are based upon the principle that the injured victim deserves compensation for his or her injuries, punitive damages are intended merely to set an example and punish the tortfeasor for its wrongful conduct. Punitive damage awards consequently may be exponentially larger than the compensatory damages. Moreover, there is no requirement that any particular court consider the amount of punitive damages a particular company has been required to pay for the same conduct. Companies such as Johns-Manville Company, manufacturer of numerous asbestos-containing products, have been assessed substantial punitive damage awards in numerous cases, each case justifying the amount in part on the total net worth of the company.^{379/} As Johns-Manville's

372/ *Hoffman v. United States*, 767 F.2d 1431, 1436 (9th Cir. 1985); *Flores v. Natividad Medical Center*, 192 Cal.App.3d 1106, 1116, 238 CalRptr. 24 (1987); *Fein v. Permanente Medical Group*, 38 Cal.3d 137, 158 211 CalRptr. 368,695 P.2d 665 (1985) appeal dismissed, 474 U.S. 892, 106 S.Ct. 214, 88 L.Ed.2d 215 (1985).

373/ *Schiembeck v. Haight*, 7 Cal.App.4th 869, 9 Cal.Rptr.2d 716 (1992).

374/ *McAdory v. Rogers*, 215 Cal.App.3d 1273, 1281,264 Cal.Rptr. 71 (1989).

375/ 49 U.S.C. § 1502.

376/ *Transworld Airlines, Inc. v. Franklin Mint Corp.*, 466 U.S. 243, 104 S.Ct. 1776, 80 L.Ed.2d 273 (1984).

377/ Congress also might seek to limit the amount of money attorneys can collect when representing plaintiffs on a contingency fee basis, in order to assure victims a minimum recovery. A similar proposal is part of President Clinton's health care reform legislation pending before Congress.

378/ Another approach exists in Indiana, which limits qualifying health care providers to paying \$100,000 to victims of medical malpractice. Ind. Code § 16-9.5-2-1, 16-9.5-2-2. The maximum compensation which a victim can receive is \$750,000, \$650,000 of which is paid from a pool funded by fees paid by the health care providers. *Id.*

379/ E.g., *Cathey v. Johns-Manville Sales Corp.*, 776 F.2d 1565, 1568 (6th Cir. 1985) (\$1.5 million punitive damage award), cert. denied, 478 U.S. 1021,106 S.Ct. 3335,92 L.Ed.2d 740 (1986); *Hansen v. Johns-Manville Products Corp.*, 734 F.2d 1036, 1039 (5th Cir. 1984) (\$1 million punitive damage award reduced to \$300,000 on appeal), cert. denied, 470 U.S. 1051,105 S.Ct. 1750, 84 L.Ed.2d 814 (1985).

decision to declare bankruptcy demonstrates, such multiple large punitive damage awards have a significant adverse impact on the companies.

Businesses have challenged such enormous verdicts as unconstitutionally depriving them of due process, so far without great success.^{380/} Recently, a plurality of the Supreme Court affirmed a \$10 million dollar punitive damage award even though the actual damages were a mere \$19,000.^{381/} A badly splintered court, however, had difficulty agreeing upon what standards should be applied to review punitive damage awards. Three justices declined to focus on the mathematical relationship between actual and punitive damages.^{382/} Justice Kennedy suggested focusing on the rationale for the particular punitive damages award in question, noting that evidence of the defendant's malice justified the massive award.^{383/} Justices Scalia and Thomas concurred in the result, but objected to creating any substantive due process right that punitive damages be reasonable.^{384/} Three justices dissented, criticizing the plurality for "erect[ing] not a single guidepost to help other courts find their way through this area."^{385/}

The case; TXO Productions Corp., was extremely disappointing for business, for it provides no relief from the threat of punitive damage verdicts greatly out of proportion to the actual damages suffered. While additional cases may eventually lead to some judicial restrictions on punitive damages,^{386/} it seems safe to predict that unless legislative solutions are adopted the threat of large punitive damage verdicts will continue.

Assuming punitive damage awards meet constitutional restrictions, the federal government can limit their applicability to AVCS in a number of ways. If state laws are preempted, federal law can establish a stringent standard for the imposition of exemplary damages. The plaintiff can be required to prove fraud, malice, or other egregious behavior rather than mere recklessness. The burden of proof can be heightened beyond the normal preponderance of the evidence to "clear and convincing evidence"^{387/} or even "beyond a reasonable doubt."^{388/} Alternatively, Congress could limit the award to a particular multiple of the compensatory damages, such as Connecticut's law restricting punitive damages in product liability actions to twice the amount of other damages.^{389/}

380/ *Pacific Mutual Life Ins. Co. v. Haslip*, 499 U.S. 1, 111 S.Ct. 1032, 1044-1045, 113 L.Ed.2d 1 (1991) (upholding punitive damages more than four times compensatory damages).

381/ *TXO Productions Corp. v. Alliance Resources Corp.*, ___ U.S. ___ 113 S.Ct 2711,125 L.Ed.2d 366 (1993).

382/ *Id.*, 113 S.Ct. at 2721-2722 (Rehnquist, Blackmun and Stevens, J.J.).

383/ *Id.*, 113 S.Ct. at 2725-2726 (Kennedy, J., concurring).

384/ *Id.*, 113 S.Ct. at 2726-2728 (Scalia, J. concurring).

385/ *Id.*, 113 S.Ct. at 2731-2732 (O'Connor, J., dissenting).

386/ See also, *William Dunn v. HOVIC, et al.*, No. 91-3837 (3d Cir. 1992) (pending due process challenge to repeated punitive damage awards).

387/ Ohio Rev. Code Ann. § 2307.80 (1989); Cal. Civ. Code § 3254.

388/ Colo. Rev. Stat. § 13-25-127(2).

389/ Conn. Gen. Stat. § 52-2406.

If these limitations are inadequate, the federal government could entirely prohibit awards of punitive damages. For instance, the Labor Management Relations Act of 1947 permits any person injured by reason of an unfair labor practice to sue for damages sustained,^{390/} and the courts have interpreted that language to limit damages to compensatory damages.^{391/}

G. Statutes Of Limitations

As the law currently stands, each state has its own statutes of limitations governing the time in which an injured person can bring a suit to recover damages for injuries sustained. In California, victims have only one year to bring suit,^{392/} whereas in Arkansas, they are allowed three years.^{393/} In Arizona, a strict liability claim can be brought for twelve years,^{394/} whereas in Texas and Ohio, the litigant is barred after only two years.^{395/} Given these variations, plaintiffs are encouraged to forum shop for jurisdictions with the longer statutes of limitations. To prevent forum shopping and add predictability, the United States could enact a uniform statute of limitations to govern personal injury or property damage actions, whatever the cause of action, brought in any state based on the use of AVCS services or products.

H. Joint And Several Liability

Joint and several liability can also be modified by federal law. In California each defendant in an action for personal injury, property damage or wrongful death, is liable only for the amount of non-economic damages allocated to him in direct proportion to that defendant's percentage of fault.^{396/} Non-economic damages are defined in that law as constituting pain and suffering, emotional distress, loss of society and companionship, loss of consortium, and injury to reputation and humiliation.^{397/} Adopting a similar law nationwide would have the effect of limiting the potential liability of IVHS contributors whose responsibility for a given accident is relatively small, while ensuring that innocent victims receive compensation for lost wages, funeral expenses, and medical expenses even if one or more of the joint tortfeasors becomes insolvent.

Another issue ripe for legislative intervention is the collateral source rule. In many states the plaintiff is entitled to double recovery because evidence of payments received from sources "collateral" to the wrongdoer, such as money paid by insurers, pension plans, medical plans, Social Security, and federal or state disability programs,

390/ 29 U.S.C. § 187(b).

391/ E.g., *Austin Co. v. International Broth of Elec. Workers, Local No. 707*, 665 F.Supp. 614,617 (N.D. Ill. 1987). The Consumer Products Safety Act, 15 U.S.C. § 2072, also limits damages for violations of that Act to "sustained damages," which likewise excludes punitive damages. *Baas v. Hoyer*, 766 F.2d 1190, 1196 (8th Cir. 1985).

392/ Cal. Code Civ. Proc. § 340(3).

393/ Ark. § 16-56-105.

394/ Ariz. Stat. § 12-55 1.

395/ Tex. Civ. P. Rem. Code § 16.003; Ohio Rev. Stat. § 2305.10.

396/ Cal. Civ. C. § 1431.2.

397/ Id., § 1431.2(b)(2).

is inadmissible.^{398/} However, some states exempt Social Security or Medicaid payments from the collateral source rule.^{399/} One permits introduction of payments of Social Security, state or federal disability payments, workers' compensation benefits, and medical or dental benefits in actions against health care providers for professional negligence.^{400/} Congress could expressly provide that payments received from some or all of these sources would be deducted from any recovery for injuries received in an AVCS accident, thereby precluding double recoveries.

I. **Indemnification By Federal Government**

Statutory indemnification provided by the federal government could provide an important limitation on the potential liability of manufacturers and designers of AVCS technology and products and encourage them to become involved in the development of AVCS. Such indemnification could take at least two different forms.

First, the federal government could follow the model of 49 U.S.C. section 1519 which indemnifies any person who publishes a chart or map for use in aeronautics from any claim, or a portion of a claim, which arises out of such person's depiction on such map of any defective or deficient flight procedure or airway, if such flight procedure or airway was promulgated by the FAA, accurately depicted, and not obviously defective.^{401/} Similarly, the federal government could enter into agreements to indemnify entities involved in the development, manufacture and sale of AVCS products from any claim or portion of a claim that arises out of an AVCS product, unless the claim arises from a manufacturing defect. Before undertaking such a broad indemnity obligation, the government might require that AVCS products undergo tests to determine whether they are reliable and safe. The government might also require that the products conform to certain specifications provided by the government or that the products have certain operational characteristics that the government deems necessary in order to effectuate a national policy on AVCS development.

Second, Congress could provide for certain levels of federal reimbursement to private entities involved with AVCS for liability payments that exceed a defined amount. The private entity would still be responsible for maintaining insurance coverage from a private company up to a limit established by statute. The government would agree to indemnify the private entity for damages exceeding the required amount of insurance up to a designated amount. Congress has provided such an indemnification scheme for nuclear power facilities^{402/} and for satellite owners and launch companies.^{403/}

398/ E.g., *Helfend v. Southern Calif. Rapid Transit Dist.*, 2 Cal.3d 1, 10-1185 Cal.Rptr. 173,465 P.2d 61 (1970); Minn. Stat. § 548.36(l).

399/ Minn. Stat. § 548.36(1) (exempting Social Security and pension benefits); Fla. Stat. § 768.76 (exempting Medicaid payments).

400/ Cal.Civ. Code § 3333.1 (a).

401/ A search found no cases yet decided under§ 1519.

402/ Price-Anderson Act, 42 U.S.C. § 2210. There have been no nuclear accidents that have required the federal government to provide indemnity to nuclear facilities.

403/ Commercial Space Launch Act, 49 U.S.C. §§ 2601-263. The indemnity provided by the government has apparently encouraged companies to proceed with the development and

Some kind of indemnification by the federal government may be necessary for the development of AVCS because of the potential for catastrophic accidents. Indeed, the promise of indemnity by the federal government may be the best way to encourage entities to participate in the development of an automated highway system and other devices which assist the driver. There must, however, be a strong enough consensus in favor of having AVCS technology developed and implemented to overcome the natural disinclination to adopt such potentially expensive measures in a time of high deficits, particularly if unaccompanied by tort reform.

J. Mandatory Alternative Dispute Resolution

One of the central concerns of companies involved in AVCS will be the potentially high cost of litigating claims arising from AVCS products. High defense costs, including attorneys' fees, are a significant expense which will be taken into account by companies deciding whether to become involved in AVCS.^{404/} It is therefore important to explore alternative procedures for resolving disputes that can lower litigation costs and streamline the process of resolving claims.

Congress could, for instance, provide that claims arising from AVCS products be submitted to binding arbitration under the rules of the American Arbitration Association or a similar group. All those who purchase AVCS products could be required to agree that they will submit any claims arising from their use of the product to binding arbitration. Courts would likely uphold such an arbitration agreement absent coercion, since arbitration clauses are highly favored.^{405/} A better solution would be for Congress to mandate arbitration for all claims arising from AVCS technology or products, so that bystanders and passengers also would be bound to pursue arbitration. Congress could cite the compelling need for expeditious and inexpensive dispute resolution in the context of AVCS in order to justify taking such cases out of the court system.^{406/}

Mandatory arbitration could provide several advantages, including: quicker results: shorter and less costly trial proceedings (e.g., the Rules of Evidence

launching of private satellites. K. Syverud, *Liability and Insurance Implications of IVHS Technology*, University of Michigan Law School, SAE Technical Paper 901507 (1990). At least one court has upheld the Act's mandatory waivers. *Martin Marietta Corp. v. INTELSAT*, 763 F.Supp. 1327 (D. Md. 1991).

404/ It is doubtful whether the federal government would be willing to reimburse companies for the costs of litigating claims arising from AVCS, even if the government provides some indemnity for damages.

405/ See, e.g., *Moses H. Cone Memorial Hospital v. Mercury Const. Corp.*, 46 U.S. 1,24, 103 S.Ct. 927, 941-942, 74 L.Ed.2d 765 (1983).

406/ States have required mandatory arbitration in certain circumstances. For instance, in California, a party potentially liable for a clean-up of released hazardous substances may be able to request mandatory arbitration under certain circumstances. Cal. Health & Safety Code, §§ 25356.2-25356.3. Also in California, lawsuits for \$375,000 or less by a public works contractor against a local agency must be referred to mediation and, if not resolved, submitted to non-binding judicial arbitration; a party demanding a trial *de novo* may be ordered to pay attorneys' fees if it receives a less favorable judgment. Cal. Public Contract Code, § 20104.4; see Cal. Public Contract Code, § 10240.

may be relaxed); an ability to select the arbitrator and determine his or her qualifications; greater privacy; and finality. On the other hand, arbitrators may be more likely to compromise and split liability; there is limited discovery or pretrial law and motion, unless expressly provided for by the parties or by the statute creating mandatory arbitration: there is no jury: speedy resolution does not always occur; and there are limited grounds for judicial review from a judgment confirming an arbitration award.

Other alternative dispute resolution procedures that are worth exploring in this context are mediation, which involves a neutral third party who seeks to help parties settle claims (but who cannot issue a final judgment), and private judging, which is similar to arbitration except that there may be a right to full appellate review.^{407/}

Alternative dispute resolution procedures provide the advantage of a potentially less expensive and more efficient way of resolving claims arising from AVCS products. On the other hand, they would deprive those who suffer injury as a result of AVCS products and technology of recourse to the court system, which provides a long-standing and well established mechanism for resolving disputes from automobile accidents. Thus, proposals for alternative dispute resolution could spark opposition from consumer groups and plaintiffs' lawyers concerned about fairness.

IV. CONCLUSION

AVCS will result in a shift of vehicle control from the driver to sophisticated electronics systems designed to pilot the vehicle and avoid collisions. This shift of control from driver to machine might result also in a shift in liability for accidents from the driver to the manufacturers, designers and sellers of AVCS. The prospect of liability for catastrophic accidents resulting from a failure of AVCS will likely deter entities from becoming involved with AVCS and impede its development unless the federal government adopts some or all of the legislative measures discussed above. Those measures could drastically diminish the inhibiting effect of potentially enormous tort liability and encourage the development and implementation of AVCS.

407/ See, e.g., Cal. C. Civ. Proc. § 636 (providing for a reference of a case to a court-appointed referee).