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March 31, 2004

By Hand Delivery

Marlene H. Dortch
Secretary
Federal Communications Commission
c/o 236 Massachusetts Avenue, N.E.
Suite 110
Washington, D.C. 20002

Re: Amendment of Parts 2 and 90 of the Commission's Rules to Provide for an Emergency Vehicle Signaling Service
DA 04-37; RM-10836

Dear Ms. Dortch:

Transmitted herewith on behalf of AlertCast Communications, LLC are an original and four copies of its "Reply Comments" filed in the above-referenced proceeding.

Should any questions arise concerning this matter, please communicate directly with the undersigned

Very truly yours,

DICKSTEIN SHAPIRO MORIN
& OSHINSKY LLP

Attorneys for
AlertCast Communications, LLC

By: _____
Andrew S. Kersting

Enclosure
cc: Certificate of Service (w/ encl.) (by hand & first-class mail)

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	DA 04-37
Amendment of Parts 2 and 90 of the	)	RM-10836
Commission's Rules to Provide for an	)	
Emergency Vehicle Signaling Service	)	
	)	

To Chief, Media Bureau

REPLY COMMENTS

AlertCast Communications, LLC ("AlertCast"), acting pursuant to Sections 1.415 and 1.419 of the Commission's rules, hereby submits these reply comments in the above-captioned proceeding concerning the Petition for Rulemaking ("Petition") filed by Alert Devices International Corporation ("AdiCorp") requesting changes to Parts 2 and 90 of the Commission's rules to permit the establishment of an Emergency Vehicle Signaling Service ("EVSS") in the 535-1705 kHz and 88-108 MHz frequency bands.

I. Introduction & Summary.

AlertCast supports ADiCorp's proposal for an EVSS. That service is desperately needed to help prevent the increasing number of fatalities and serious injuries that occur each year in accidents involving emergency vehicles on their way to the scene of an accident or other life-threatening emergency. The Communications Act of 1934, as amended (the "Act"), provides the Commission with ample authority to adopt an EVSS.

Despite that public need, and that statutory discretion, the present state of technology has not reached the point where it would be productive for the Commission to commence a rulemaking proceeding to consider establishing permanent rules for the licensing of an EVSS.

Instead, the Commission should support the developmental activities of ADiCorp, Midland Associates, Inc., AlertCast, and other companies that are actively engaged in pursuing an EVSS so that more research can be conducted through the approval of experimental authorizations to develop a more effective technical solution than the one proposed by ADiCorp. Additional testing of emergency alert low-power transmitters under controlled, real-world conditions will help maximize the benefits of an EVSS and minimize the adverse impact on existing broadcast services and the emergency alert service ("EAS"), which should retain its primary status.

The Commission should not be dissuaded from pursuing an EVSS because of parties who have challenged the emergency warning alert's ability to override the signal of a co-channel broadcast station and have raised questions concerning the "under-inclusiveness" and "over-inclusiveness" of ADiCorp's EVSS proposal. Nor should the Commission be deterred by those commenters who oppose the proposed EVSS because the Commission already has allocated alternative spectrum which one day may result in a service which would serve the same purpose. That alternative spectrum does not constitute a satisfactory substitute for the proposed EVSS.

Whatever the Commission's ultimate judgment on EVSS, there can be little doubt that carefully controlled experimental authorizations at this point will provide the best means to assess whether and how the Commission can help battle a growing and very deadly public problem.

II. Adoption of an NPRM Would Be Premature.

ADiCorp's Petition underscores an issue that is rapidly becoming an increasing public safety concern. As automobile manufacturers continue to improve the sound-proof quality of their vehicles, cars now are much more resistant to road noise than ever before. Motorists also are now able to enjoy a climate-controlled environment inside their car through either heat or air-conditioning that is almost entirely independent of the weather outside. As a

result, it has become increasingly difficult for motorists to hear the siren of a rapidly-approaching emergency vehicle. It is that much more difficult for a driver to hear a siren if the car stereo is playing at even a moderate volume level.

Unfortunately, the improved sound-proofing and climate control of passenger cars has led to an increase in accidents involving emergency vehicles on our nation's roadways. As reflected in Appendix A annexed hereto, during the 2000 calendar year alone there were estimated to be 5,949 accidents involving emergency vehicles that resulted in bodily injury and an additional 75 accidents that resulted in a fatality. There also were estimated to be an additional 10,572 accidents that resulted in property damage. During calendar year 2001, there were a total of 65 persons killed in accidents involving emergency vehicles while in emergency use. During 2002, there were a total of 77 fatalities in accidents involving emergency vehicles that were in emergency use.[1]

Despite the need for remedial action, ADiCorp's request for an NPRM is premature. There are still too many unknown variables to fashion a regulatory scheme that will resolve the problem without creating other burdensome costs, including possible disruption to commercial and noncommercial AM and FM broadcasts as well as to the EAS.

In this context, the obvious answer is experimental authorizations. Permitting further experimental testing of an EVSS in a controlled, real-world environment would enable both the radio industry and the Commission to advance their knowledge in this area without any negative consequences.

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[1] *See* U.S. Department of Transportation, National Highway Traffic Safety Administration, *Traffic Safety Facts 2001 & 2002, A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System* (relevant portions contained in Appendix B annexed hereto). The 2002 data is the most recent data available from the U.S. Department of Transportation.

Based on its discussions with broadcasters in the Sacramento, California area, AlertCast believes that experimental testing can be conducted without compromising the primary use of the broadcast spectrum. Broadcasters contacted by Alertcast have tentatively agreed that their cooperation is warranted, given the limited impact – both in terms of duration and geographic scope – an EVSS would have on their frequencies and the limited number of people that potentially would be affected at any given time, especially since their cooperation could yield substantial public interest benefits.

Upon the conclusion of further testing and an analysis of those test results, ADiCorp and the other companies in this industry will be able to present the Commission with more refined technical proposals that can be subject to a more thorough and objective analysis. Upon the presentation of such proposals, the Commission will be in a better position to evaluate whether the public interest warrants consideration of permanent rules governing an emergency alert system similar to that proposed in ADiCorp's Petition and the technical parameters that should govern such an EVSS Until that time, the issuance of an NPRM would be premature.

III. ADiCorp's Proposal Is Not Precluded By the Act.

Leventhal Senter & Lerman ("LSL")[2] and the Society of Broadcast Engineers ("SBE") argue that ADiCorp's proposal to establish an EVSS would violate the Act and the Commission's rules because it would cause interference to existing broadcast stations. *See* LSL Comments at 2-5; SBE Comments at 1-2. LSL's and SBE's arguments are based primarily on Section 333 of the Act and Section 2.1 of the Commission's rules. 47 U.S.C. §333; 47 C.F.R. §2.1

[2] As indicated in its Comments (*see* LSL Comments at 1), LSL is a Washington, DC-based communications law firm which represents a number of entities that are licensed to operate AM and FM radio stations. Some of these licensees include subsidiaries of Infinity Broadcasting Corp. (a subsidiary of Viacom Inc.), Entercom Communications Corporation, and Citadel Communications Corp.

Section 333 of the Act states that "[n]o person shall willfully or maliciously interfere with or cause interference to any radio communications of any station licensed or authorized by or under this Act or operated by the United States Government." Section 2.1 of the Commission's rules defines "Interference" as "unwanted energy" which adversely affects a broadcast. If the Commission authorizes a minor disruption in a radio broadcast to serve public safety interests, the impact can hardly be described as "unwanted energy." Nor could the impact be described as "malicious." As ADiCorp explains in its Petition, the proposed EVSS is not designed to "intentionally jam" or obstruct another communication service. Petition at 11-12. Instead, the EVSS would consist of a brief warning alert to help save lives and reduce the significant number of serious injuries that result from accidents involving emergency vehicles.

It also bears emphasizing that Section 2.1 of the Commission's rules defines "harmful interference" as interference which "seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with these [international] Radio Regulations." 47 C.F.R. §2.1. The proposed EVSS does not constitute "harmful interference" within the meaning of Section 2.1 of the rules because it would not "seriously degrade or obstruct" the signal of any broadcast station. Indeed, the emergency alert warning signal is very brief, lasting only a few seconds, and is transmitted only in the immediate vicinity of an emergency vehicle as it speeds on its way toward the scene of an accident or other emergency. The emergency alert warning system also would not "repeatedly interrupt" a broadcast signal in any material way because *brief* alert messages, designed to help save the lives of those persons in the immediate path of an emergency vehicle (and in the vehicle itself), are hardly the sort of "repeated interruption" the Commission had in mind when it promulgated Section 2.1 of the rules

To the extent there is a limited interruption of a broadcast service, that interruption is anything but "harmful" in comparison to the harm that is attempted to be avoided by the rapidly-

moving emergency vehicle. Indeed, what is *harmful* are the substantial number of fatalities and serious bodily injuries that result each year from accidents involving emergency vehicles. As described in ADiCorp's Petition, the momentary disruption that would result from an EVSS would occur only in the immediate vicinity of the emergency vehicle, last only for a very few seconds, and affect only those few listeners who happen to be within that listening area at that particular moment. By any standard of measurement, that amount of momentary disruption is *de minimis*, if not negligible. Therefore, there is no merit to the argument that an EVSS should be precluded by Section 2.1 of the Commission's rules.

Even assuming, *arguendo*, that the proposed EVSS did "repeatedly interrupt" a radio service in apparent violation of Sections 2.105(c)(2) and 2.1 of the rules, Congress has given the Commission the discretion to determine the amount of interference that an EVSS can cause to radio communications. Section 302a of the Act provides in pertinent part as follows:

> (a) The Commission may, *consistent with the public interest, convenience, and necessity, make reasonable regulations* (1) governing the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to *cause harmful interference to radio communications* . . . .

47 U.S.C. §302a (emphasis added). Although Section 2.105(c)(2) of the Commission's rules provides that secondary services "shall not cause harmful interference to stations of primary services," Congress has given the Commission statutory authority to promulgate rules that, may result in "interference" if, as in the case of an EVSS, such interference is offset by substantial public benefits. Therefore, in the event the Commission were to find at some point in the future that an EVSS would cause "harmful interference" to existing broadcast stations within the meaning of Section 2.1 of the Commission's rules, the Commission could exercise its discretion under Section 302a of the Act to accommodate an EVSS.

LSL also argues that agreements between the United States and Canada and the United States and Mexico require coordination between the governments of those countries when a change is made in the use of broadcast spectrum near the borders of those countries.[3] That argument has no merit. Since the emergency vehicle signal alert will be transmitted only in a very limited area in the immediate vicinity of an emergency vehicle, the transmitter in an emergency vehicle could be pre-programmed so that it would become inoperable as soon as it comes within a specific distance of a certain geographic location(s) within either of those countries Thus, it is reasonable to believe that Canadian and Mexican concurrence could be obtained for an EVSS in much the same manner that it is currently obtained for other broadcast services near the border areas.

IV. An EVSS Would Have a Negligible Impact on EAS.

The concerns expressed by some commenters that an EVSS would threaten the viability of EAS are overstated. As demonstrated below, a properly designed EVSS would affect only the listeners in the immediate vicinity of the emergency vehicle and would not interrupt the monitoring of local primary stations by other broadcast stations.

As a threshold matter, it should be remembered that not all EAS systems operate in the same manner. Many operate in a chain-like manner in which broadcast stations rely upon local primary stations within a particular geographic area and relay the signals of those primary stations to other stations down the chain. In other areas of the country, EAS operates in the UHF or microwave spectrum bands, in which case the proposed EVSS would have no effect on the existing EAS. For example, it is AlertCast's understanding that in the state of Washington most, if not all, broadcast stations monitor a UHF-based distribution system and receive their EAS

[3] *See* LSL Comments at 5, citing http://www.fcc.gov/ib/sand/agree/ (listing agreements with Canada and Mexico concerning AM and FM broadcasting).

notifications simultaneously. Thus, because EAS notifications in Washington state are distributed on UHF frequencies and are not dependent upon a relay notification system, the proposed EVSS would have no effect upon a broadcast station's ability to either monitor or relay EAS alerts in that state.

Even in those areas where EAS operates through the monitoring of local primary stations, current technology will permit an EVSS to operate so that it will not interfere with a broadcast station's ability to monitor local primary stations. The geographic coordinates of the EAS receivers of all radio and TV stations in the area in which an emergency vehicle operates can be programmed into an EVSS transmitter so that the emergency alert transmitter in that vehicle will become inoperable as soon as it gets within a pre-determined distance of an EAS receiver (*e.g.*, 1500 feet). With the assistance of area broadcasters, EVSS transmitters can be pre-programmed to operate so that they will not affect a radio (or TV) station's ability to receive EAS alerts from local monitoring stations. Therefore, there is no merit to the claim of the National Association of Broadcasters ("NAB") that "listeners in nearby counties would be deprived of . . . time-sensitive information because [another] broadcast station could not monitor the LP station." *See* NAB Comments at 23.

There is a theoretical possibility that a radio station could air an EAS alert at the same time an emergency vehicle is transmitting an emergency alert signal to nearby motorists. [4] However, because the alert warning signals transmitted by an emergency vehicle will be very brief and EAS alerts are very infrequent, the possibility that the two types of emergency alert warnings will be aired at the same time is extremely remote. Nevertheless, even assuming, *arguendo*, that such messages are aired at or about the same time so that an EVSS alert precludes

[4] This assumes, of course, that it is the EVSS alert itself that precludes the motorist from hearing the EAS alert and not the emergency vehicle's siren.

a motorist in the immediate vicinity of an emergency vehicle from being able to hear an EAS alert, once the emergency vehicle has moved beyond the motorist, there is a strong likelihood that, if, in fact, the EAS alert had any significance, it is likely to be repeated, and the motorist will have another opportunity to hear the EAS alert. Indeed, if the EAS system is to operate with any effectiveness, it will be necessary for broadcast stations to air more than one or two EAS alerts lasting more than a few seconds and to air them more then a few seconds apart. Otherwise, if a listener misses the first EAS announcement, there is a high probability the listener will miss the second announcement as well unless the announcements are aired over a broader time span.

It would not matter even if the Commission were to assume (which it should not) that every motorist in the immediate vicinity of an emergency vehicle were precluded from hearing an EAS alert due to an EVSS alert message, and would not receive a subsequent EAS alert announcement concerning the same subject matter. The percentage of people involved in that scenario would certainly be infinitesimal. The reasons are self-evident. The percentage of a station's listening audience that would be close enough to a rapidly approaching emergency vehicle to receive the emergency alert warning system would almost always be *de minimis* if not negligible. To attempt to break that small percentage down even further in an effort to determine those select few listeners who *might* be precluded from hearing an EAS alert solely due to a very brief EVSS alert – and not hear a subsequent EAS alert regarding the same subject matter – is too small to calculate.

In sum, then, an EVSS would not interfere with a broadcast station's ability to monitor local primary stations and would have, at most, a negligible impact upon EAS.

V. The ERP of an EVSS Transmitter Can Adjust Automatically to Account for the Signal Strength of the Affected Radio Station.

The NAB, SBE, and LSL all argue that the signal of an EVSS is not likely to be as effective as the emergency vehicle moves closer to the transmitter site of the affected radio station. *See* NAB Comments at 7; SBE Comments at 3; LSL Comments at 7, citing Engineering Statement of Cavell, Mertz & Davis ("Engineering Statement") at 3.

One of the apparent differences between ADiCorp's proposed EVSS and AlertCast's emergency vehicle alert warning system (and perhaps those of other companies as well) is that the power level on any specific frequency in the Alertcast system adjusts automatically based on the signal strength of the affected radio station operating on the same co-channel frequency. Unlike ADiCorp's proposal, AlertCast's emergency vehicle alert warning system does not "transmit slightly off-center in the broadcast channel" (ADiCorp Petition at 10), but would operate in the center of the co-channel frequency band. As a result, AlertCast's system has the capability to determine the strength of the co-channel radio station's signal and attenuate the signal strength of its transmitter to account for changes that occur in the distance between the emergency vehicle and the affected radio station's transmitter site (*i.e* , the strength of the affected station's signal). For that reason, the concern expressed by some of the commenters regarding the signal strength of the EVSS in relation to the proximity of the emergency vehicle to the affected station's transmitter site has, to a large extent, already been addressed by the present technology. AlertCast believes, however, that it could improve upon its technology and further refine its signal attenuation system if it was permitted to conduct field tests under real-world conditions to ensure that the effective radiated power ("ERP") of its transmitter was no stronger than necessary and yet still strong enough to achieve its intended purpose.

SBE also argues that ADiCorp's proposed signal would not extend far enough under most conditions to be useful. *See* SBE Comments at 3. AlertCast agrees that a higher ERP may well be necessary to enable an EVSS to serve its intended purpose, but it is difficult to determine

with any specificity what an appropriate power level should be due to the wide variety of conditions that confront emergency vehicles in a real-world environment. For example, although one power level may be sufficient under most conditions for a slow-moving emergency vehicle in a crowded, downtown urban environment where traffic is not moving, it may require considerably more power to be effective for a state patrol moving at speeds of 80-90 miles per hour on an interstate highway in a rural area where there is substantially less traffic but it is moving at considerable greater speeds. This is another reason that experimental authorizations to conduct testing under real-world conditions is so critical to further technological advancement in this area.

VI. The "Under-inclusive"/"Over-inclusive" Arguments Should Be Rejected.

Several commenters have opposed the adoption of an EVSS on grounds that it is "under-inclusive," *i.e.*, that the proposed service would be ineffective with respect to those drivers who happen to be listening to a compact disc, talking on their cell phone, or have their radio turned off. These commenters should not stop there. An EVSS also would be less effective with respect to those drivers who do not have a radio in their car, have a hearing disorder, or hear the alert warning signal but either choose to ignore the warning alert or proceed ahead with the intent of attempting to stay ahead of an emergency vehicle.

The EVSS proposal described in ADiCorp's Petition is not intended to serve as a panacea for all emergency vehicle-related accidents. Instead, it is intended to help reduce the substantial number of fatalities and serious injuries that continue to result from those type of accidents. The mere fact that the proposed EVSS will not eliminate all emergency vehicle-related accidents is not a legitimate basis upon which to reject the proposed new service. This is especially true when consideration is given to the views of the many public safety officials who have viewed demonstrations of AlertCast's alert warning system at various conventions across

the country over the past few years and who would use an EVSS on a daily basis. They believe that the system would save countless lives if it were permitted to be implemented.

Ironically, the NAB, SBE, and LSL argue that the proposed EVSS is "overinclusive" because it would impact radio listeners who are not in their cars and, therefore, have no reason to hear the warning alert. *See* NAB Comments at 12-17; SBE Comments at 4; LSL Comments at 7, citing Engineering Statement at 3-4. It is of course true that EVSS may reach some listeners in office buildings and other off-street locations who cannot collide with an emergency vehicle on the streets. The data in some of the comments to support that concern appear to be exaggerated.

Based on the use of an AlertCast low power transmitter, AlertCast's engineers have determined that, if an emergency vehicle (*e g.*, an ambulance) were traveling at the rate of 40 miles per hour (58.6 feet per second), the ambulance would transmit an alert warning signal to a distance of approximately 800 feet omni-directionally under ideal conditions (*i.e.*, with no interference). If a car were stopped at an intersection, under a best-case scenario, the car would begin to receive the ambulance's emergency alert signal approximately 13.66 seconds before the ambulance arrives at the intersection and would continue to hear the signal for approximately 13.66 seconds after the ambulance leaves the intersection and continues down the road. That is a total of approximately 27.32 seconds of listening. Assuming that a fixed receiver were located in an office building adjacent to the corner of that same intersection, a listener conceivably would be able to receive the ambulance's alert signal for that same period of time, even though the fixed receiver obviously would not be nearly as close to the ambulance as the car. Unlike ADiCorp's transmitter, the AlertCast emergency alert signal does not operate off-center from the affected co-channel radio station. As a result, AlertCast does not believe that its alert signal would affect a fixed receiver for any longer than the car, *i.e.*, 27.32 seconds. In fact, due to the greater distance between the ambulance and the fixed receiver, AlertCast believes that the fixed receiver would be subject to the ambulance's emergency alert signal for considerably less than

27.32 seconds, depending on the specific distance between the ambulance and the fixed receiver.[5]

The Commission's evaluation of an EVSS, however, should not turn on the precise number of seconds which someone may hear an emergency alert. The question, instead, is whether the small risk of some very brief interruption is a small price to pay for the lives that will be saved and the injuries that will be avoided through an EVSS. Stated another way, receipt of those few emergency alert warnings (to the extent they may be received) is a small price to pay if it means saving even one human life.

VII. The Alternative Spectrum that Has Been Allotted for Safety Warning Systems and Dedicated Short Range Communications Service Does Not Constitute a Satisfactory Substitute for an EVSS.

NAB and LSC argue that an EVSS should not be adopted because the Commission has allotted alternative spectrum for radar detectors and similar devices which will not interfere with AM and FM broadcast stations.[6] *See* NAB Comments at 26-29; LSL Comments at 9-10. These comments are unpersuasive, however, because only a very small percentage of people in this country use radar detectors, and it is entirely speculative as to when, if ever, that the recently-authorized Dedicated Short Range Communications ("DSRC") Service will become an effective, reliable means of communication between drivers and rapidly-moving emergency vehicles.

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[5] The extent of the fixed receiver's ability to receive the emergency alert signal from the ambulance, however, is another reason that testing of an emergency vehicle alert warning system under real-world conditions in a variety of both urban and rural environments is so important to the further development of this technology.

[6] *See Amendment of the Commission's Rules Regarding Short-Range Communication Services in the 5.850-5.925 GHz Band (5.9 GHz Band)*, FCC 03-324 (released February 10, 2004).

As a threshold matter, it should be emphasized that the use of a radar detector is illegal in the Commonwealth of Virginia and the District of Columbia. Thus, the microwave-based Safety Warning System ("SWS") is not a viable option for passenger vehicles in either of those jurisdictions. More importantly, approximately only six percent (6%) of the country's licensed drivers either own or lease a radar detector.[7] In addition, the SWS signal cannot be picked up by all radar detectors, especially some of the older models. Therefore, the actual percentage of cars that are able to receive the SWS signal is less than 6%. This is far too small a percentage to have any meaningful impact with respect to helping reduce the substantial number of accidents involving emergency vehicles.

The suggestion that the recently-authorized DSRC service may provide a viable alternative to EVSS is entirely speculative. There is no guarantee that DSRC service will ever come to fruition. Unless mandated by law, automobile manufacturers will not install the necessary wireless communications systems in new cars any time soon in the absence of demand. At the same time, until the systems are widely available, there will not be much demand among consumers. Thus, even assuming, *arguendo*, that the DSRC service would provide a means of communicating between drivers and emergency vehicles at some point in the future, it will likely take at least 5-10 years before automobile manufacturers begin installing the new communications systems in even more expensive new cars.[8]

The DSRC service has other limitations. Unlike the proposed EVSS – which would have virtually an immediate, across-the-board impact because nearly every car is equipped with a

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[7] John Fetto, *Your Questions Answered*, American Demographics, July 1, 2003, at 6 (relying on New York City-based Simmons Market Research).

[8] Some industry observers believe that the cost of the "information-serving kiosk" will have to drop substantially from its current cost of anywhere from $25,000 to $100,000 depending on the complexity. *See, e g., A web address for every car?*, The Economist, Technology Quarterly, September 6, 2003, at 14.

car stereo – the DSRC service would take substantially longer to become effective because it can be implemented only over a considerable time period as the new communications systems are gradually installed in new cars. Due to their expense, the communications systems are likely to be installed initially only in the more expensive new cars and gradually, over a period of several years, may be installed in more mid-priced cars. It is doubtful that this 802.11 protocol-based communications system will ever be installed in every new car. For these reasons, the proposed DSRC service does not constitute a satisfactory substitute for an EVSS.

Conclusion

For the reasons stated herein, Alertcast respectfully requests that the Commission defer adopting an NPRM for an EVSS and authorize ADiCorp, AlertCast and other companies to actively explore an EVSS through experimental authorizations.

Respectfully submitted,

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By: _____
Lewis J. Paper
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March 31, 2004

APPENDIX A

APPENDIX A

Estimates of Non-Fatal Crashes Involving Emergency Vehicles*
(Emergency Use Only)

Year	Vehicle Type	Injury	Property Damage Only	Total
1991	Police	3,376	5,522	8,898
	Ambulance	337	1,055	1,391
	Fire Truck/Car	533	1,515	2,048
1992	Police	3,225	7,073	10,298
	Ambulance	752	2,462	3,215
	Fire Truck/Car	368	997	1,365
1993	Police	3,039	5,136	8,175
	Ambulance	1,514	1,937	3,451
	Fire Truck/Car	551	1,299	1,850
1994	Police	2,583	5,376	7,959
	Ambulance	548	697	1,244
	Fire Truck/Car	933	858	1,791
1995	Police	3,739	6,800	10,539
	Ambulance	683	2,526	3,208
	Fire Truck/Car	679	1,103	1,782
1996	Police	3,049	6,347	9,397
	Ambulance	518	1,799	2,317
	Fire Truck/Car	318	1,445	1,763
1997	Police	3,469	6,541	10,010
	Ambulance	1,347	1,096	2,442
	Fire Truck/Car	652	2,315	2,967
1998	Police	3,566	6,309	9,875
	Ambulance	1,756	927	2,683
	Fire Truck/Car	680	1,741	2,421
1999	Police	4,247	7,215	11,462
	Ambulance	902	1,491	2,393
	Fire Truck/Car	526	2,853	3,379
2000	Police	4,132	6,292	10,424
	Ambulance	1,213	2,596	3,809
	Fire Truck/Car	604	1,684	2,288

* Source: National Highway Traffic Safety Administration ("NHTSA") (original data appended hereto). As indicated in the attached NHTSA data, the estimated crashes are not actual counts, but estimates of the actual counts. The estimates are calculated from data obtained from a representative sample of crashes nationwide collected through NHTSA's General Estimates System. The NHTSA advises that estimates should be rounded to the nearest 1,000. Those

estimates which are less than 500 indicate that the sample size was too small to produce a meaningful estimate, and, thus, according to the NHTSA, should be rounded to zero.

This table does not reflect the number of crashes that emergency vehicles were involved in when they were not in emergency use or it is not known whether the emergency vehicle was in emergency use.

According to the NHTSA, crashes may be counted more than once. For example, if a police vehicle and an ambulance are both involved in the same crash, the crash is counted twice; once for the police vehicle and once for the ambulance.

Estimated Number of Emergency Vehicles Involved in Fatal Crashes*
(Emergency Use Only)

Year	Number of Crashes	Percent of All Crashes
1990	74	41.3%
1991	85	42.5%
1992	96	48.0%
1993	81	46.3%
1994	86	57.3%
1995	70	40.2%
1996	77	52.0%
1997	75	51.0%
1998	68	53.5%
1999	50	49.0%
2000	75	44.4%

* Source: NHTSA (original data appended hereto). This table does not reflect the number of estimated crashes that occurred when emergency vehicles were not in emergency use.

Estimate of Non Fatal Crashes Involving Emergency Vehicles
by Year, Emergency Vehicle and Emergency Use
GES 1991-2000

NOTE: CRASHES MAY BE COUNTED MORE THAN ONCE ACROSS THE EMERGENCY VEHICLE
FOR EXAMPLE: A POLICE VEHICLE, AND AN AMBULANCE MAY BOTH BE INVOLVED IN THE CRASH AND THE CRASH IS COUNTED TWICE
ONCE FOR THE POLICE VEHICLE AND ONCE FOR THE AMBULANCE

YEAR		Injury				Property Damage Only				Total			
		Emergency Use				Emergency Use				Emergency Use			
		Not In Emergency Use	Unknown, If Emergency Use	In Emergency Use	Total	Not In Emergency Use	Unknown, If Emergency Use	In Emergency Use	Total	Not In Emergency Use	Unknown, If Emergency Use	In Emergency Use	Total
1991	Police	3,576	302	3,376	7,255	4,771	485	5,522	10,696	8,347	785	8,898	17,950
	Ambulance	997	0	337	1,334	416	0	1,055	1,470	1,413	0	1,391	2,804
	Fire Truck/Car	10	20	533	563	296	10	1,515	1,823	308	30	2,048	2,387
1992	Police	1,728	149	3,225	5,101	5,942	0	7,073	13,015	7,670	149	10,298	18,117
	Ambulance	404	0	752	1,156	0	278	2,462	2,740	406	278	3,215	3,896
	Fire Truck/Car	110	0	368	479	1,430	109	997	2,536	1,541	109	1,365	3,015
1993	Police	3,198	79	3,039	6,316	6,991	332	5,136	12,459	10,189	411	8,175	18,775
	Ambulance	409	0	1,514	1,923	278	0	1,937	2,215	687	0	3,451	4,138
	Fire Truck/Car	367	14	551	932	1,084	0	1,299	2,383	1,451	14	1,850	3,315
1994	Police	2,908	64	2,583	5,555	7,833	188	5,376	13,397	10,741	252	7,939	18,952
	Ambulance	970	0	548	1,517	1,149	0	697	1,845	2,118	0	1,244	3,363
	Fire Truck/Car	29	23	933	984	1,593	423	858	2,875	1,622	446	1,791	3,859
1995	Police	2,779	147	3,739	6,665	6,951	332	6,800	13,683	9,330	479	10,539	20,349
	Ambulance	265	27	683	975	605	0	2,526	3,130	870	27	3,288	4,186
	Fire Truck/Car	661	0	679	1,340	581	268	1,103	1,952	1,242	268	1,782	3,292
1996	Police	4,707	0	3,049	7,757	5,508	406	6,347	12,262	10,216	406	9,397	20,019
	Ambulance	729	0	518	1,247	1,279	5	1,799	3,083	2,008	5	2,337	4,338

(Continued)

Note: The 'Estimate of Crashes' numbers are not actual counts, but estimates of the actual counts. The estimates are calculated from data obtained from a nationally representative sample of crashes collected through NHTSA's General Estimates System (GES). Estimates should be rounded to the nearest 1,000. Estimates less than 500 indicate that the sample size was too small to produce a meaningful estimate and should be rounded to 0.

Estimate of Non Fatal Crashes Involving Emergency Vehicles
by Year, Emergency Vehicle and Emergency Use
GES 1991-2000

NOTE: CRASHES MAY BE COUNTED MORE THAN ONCE ACROSS THE EMERGENCY VEHICLE
FOR EXAMPLE: A POLICE VEHICLE AND AN AMBULANCE MAY BOTH BE INVOLVED IN THE CRASH AND THE CRASH IS COUNTED TWICE
ONCE FOR THE POLICE VEHICLE AND ONCE FOR THE AMBULANCE

YEAR		Injury				Property Damage Only				Total			
		Emergency Use				Emergency Use				Emergency Use			
		Not In Emergency Use	Unknown, If Emergency Use	In Emergency Use	Total	Not In Emergency Use	Unknown, If Emergency Use	In Emergency Use	Total	Not In Emergency Use	Unknown, If Emergency Use	In Emergency Use	Total
1996	Fire Truck/Car	139	0	318	456	960	418	1,445	2,823	1,900	418	1,763	3,281
	Police	4,179	98	3,469	7,745	8,255	0	6,541	14,797	12,434	98	10,010	22,542
	Ambulance	110	0	1,347	1,457	2,218	0	1,096	3,314	2,328	0	2,442	4,770
1997	Fire Truck/Car	299	12	652	963	640	0	2,315	2,956	939	12	2,967	3,918
	Police	4,230	3	3,566	7,798	9,808	91	6,309	16,208	14,038	94	9,875	24,006
	Ambulance	451	0	1,756	2,207	1,383	0	927	2,310	1,834	0	2,683	4,517
1998	Fire Truck/Car	89	12	680	781	667	0	1,741	2,407	756	12	2,421	3,188
	Police	4,036	576	4,247	8,859	10,570	2,256	7,215	20,042	14,606	2,832	11,462	28,900
	Ambulance	903	47	902	1,852	771	958	1,491	3,220	1,674	1,005	2,393	5,072
1999	Fire Truck/Car	152	9	526	686	1,297	1,458	2,853	5,608	1,448	1,467	3,379	6,294
	Police	4,431	1,335	4,132	9,898	12,168	3,251	6,292	21,712	16,600	4,586	10,424	31,610
	Ambulance	881	99	1,213	2,123	1,102	695	2,596	4,393	1,913	794	3,809	6,516
2000	Fire Truck/Car	145	118	604	867	1,043	529	1,684	3,256	1,188	646	2,288	4,123

Note: The 'Estimate of Crashes' numbers are not actual counts, but estimates of the actual counts.
The estimates are calculated from data obtained from a nationally representative
sample of crashes collected through NHTSA's General Estimates System (GES).
Estimates should be rounded to the nearest 1,000. Estimates less than 500 indicate
that the sample size was too small to produce a meaningful estimate and should be rounded to 0.

Count of Emergency Vehicles Involved in Fatal Crashes
by Year and Emergency Use
Fatality Analysis Reporting System(FARS) 1990-1999 -Final & 2000 ARF

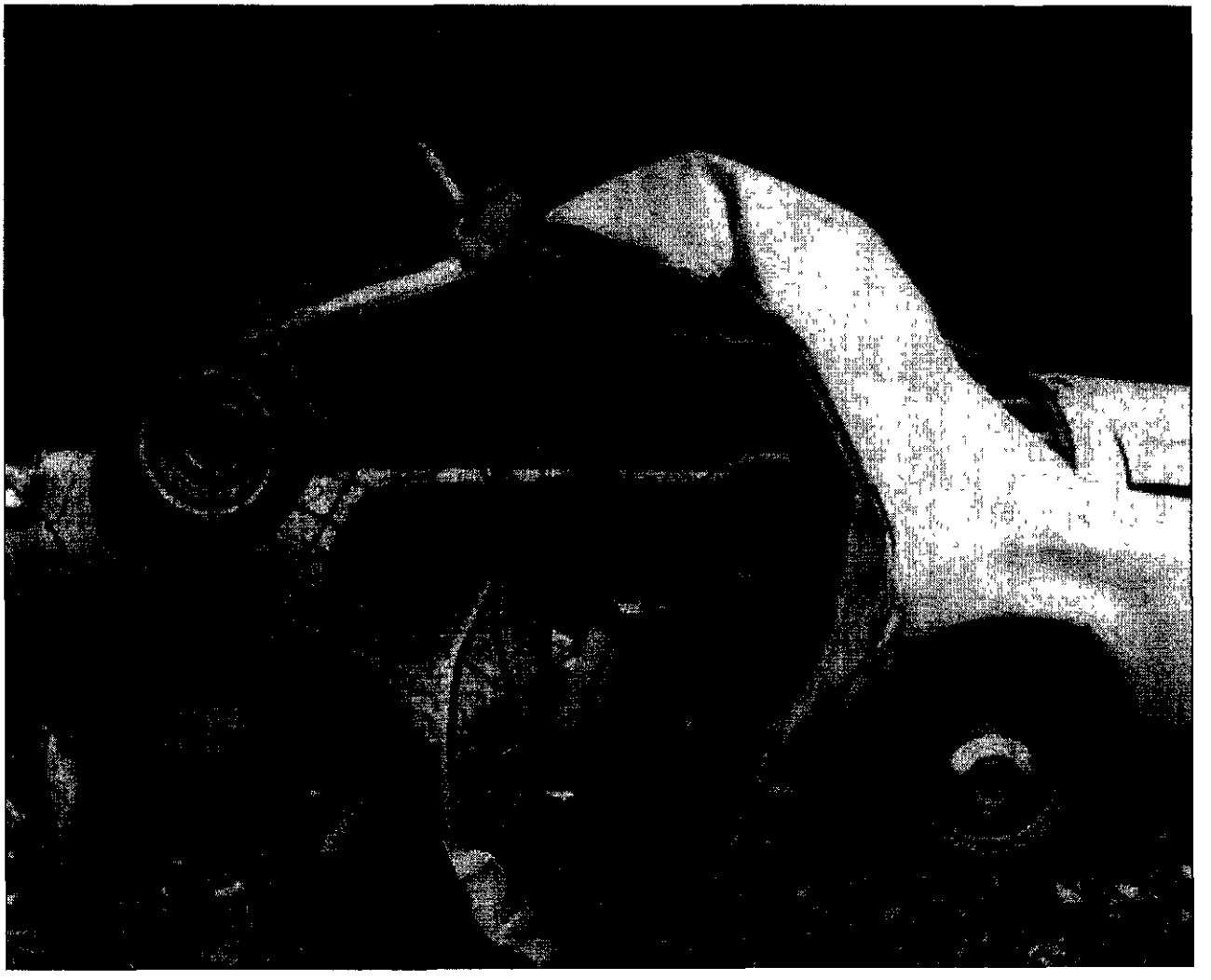
YEAR	Emergency Use				Total	
	Not in Emergency Use		In Emergency Use			
	Number	Percent	Number	Percent	Number	Percent
1990	105	58.7	74	41.3	179	100.0
1991	115	57.5	85	42.5	200	100.0
1992	104	52.0	96	48.0	200	100.0
1993	94	53.7	81	46.3	175	100.0
1994	64	42.7	86	57.3	150	100.0
1995	104	59.8	70	40.2	174	100.0
1996	71	48.0	77	52.0	148	100.0
1997	72	49.0	75	51.0	147	100.0
1998	59	46.5	68	53.5	127	100.0
1999	52	51.0	50	49.0	102	100.0
2000	94	55.6	75	44.4	169	100.0

APPENDIX B

Traffic Safety Facts 2001 & 2002

U S Department
of Transportation
**National Highway
Traffic Safety
Administration**

Traffic Safety Facts 2002



A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System

Table 61
Persons Killed in Construction/Maintenance Zones, by Roadway Function Class and Person Type

Roadway Function Class	Person Type					
	Driver	Passenger	Pedestrian	Pedalcyclist	Other Nonmotorist	Total
Principal Arterial						
Interstate	179	143	38	1	0	**361**
Freeway/Expressway	44	19	7	0	2	**72**
Other	193	80	35	4	1	**313**
Minor Arterial	105	39	24	3	0	**171**
Collector	84	35	10	2	1	**132**
Local Road or Street	71	24	20	4	0	**119**
Unknown	8	5	0	0	0	**13**
Total	**684**	**345**	**134**	**14**	**4**	**1,181**

Table 62
Persons Killed in Crashes Involving Emergency Vehicles, by Person Type, Crash Type, and Vehicle Type

Person Type	Crash Type				Total	
	Single Vehicle		Multiple Vehicle			
	Total	In Emergency Use*	Total	In Emergency Use*	Total	In Emergency Use*
Ambulance						
Ambulance Driver	0	0	0	0	**0**	**0**
Ambulance Passenger	1	0	2	1	**3**	**1**
Occupant of Other Vehicle	0	0	16	8	**16**	**8**
Pedestrian	2	0	1	1	**3**	**1**
Pedalcyclist	0	0	0	0	**0**	**0**
Total	**3**	**0**	**19**	**10**	**22**	**10**
Fire Truck						
Fire Truck Driver	3	2	0	0	**3**	**2**
Fire Truck Passenger	1	1	1	1	**2**	**2**
Occupant of Other Vehicle	0	0	6	3	**6**	**3**
Pedestrian	1	1	0	0	**1**	**1**
Pedalcyclist	0	0	0	0	**0**	**0**
Total	**5**	**4**	**7**	**4**	**12**	**8**
Police Vehicle						
Police Vehicle Driver	13	5	12	7	**25**	**12**
Police Vehicle Passenger	1	0	2	2	**3**	**2**
Occupant of Other Vehicle	0	0	69	35	**69**	**35**
Pedestrian	18	7	4	3	**22**	**10**
Pedalcyclist	0	0	0	0	**0**	**0**
Total	**32**	**12**	**87**	**47**	**119**	**59**

*Refers to a vehicle traveling with physical emergency signals in use (red lights blinking, sirens sounding, etc.)

U.S Department
of Transportation
**National Highway
Traffic Safety
Administration**

Traffic Safety Facts 2001

A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System

Table 61
Persons Killed in Construction/Maintenance Zones, by Roadway Function Class and Person Type

Roadway Function Class	Person Type					
	Driver	Passenger	Pedestrian	Pedalcyclist	Other Nonmotorist	Total
Principal Arterial						
Interstate	182	104	34	2	2	**324**
Freeway/Expressway	43	14	14	0	1	**72**
Other	152	62	36	5	1	**256**
Minor Arterial	94	28	32	2	1	**157**
Collector	77	28	11	1	0	**117**
Local Road or Street	58	32	6	2	0	**98**
Unknown	35	13	6	1	0	**55**
Total	**641**	**281**	**139**	**13**	**5**	**1,079**

Table 62
Persons Killed in Crashes Involving Emergency Vehicles, by Person Type, Crash Type, and Vehicle Type

Person Type	Crash Type				Total	
	Single Vehicle		Multiple Vehicles			
	Total	In Emergency Use*	Total	In Emergency Use*	Total	In Emergency Use*
Ambulance						
Ambulance Driver	0	0	1	1	**1**	**1**
Ambulance Passenger	5	3	4	3	**9**	**6**
Occupant of Other Vehicle	0	0	16	8	**16**	**8**
Pedestrian	1	0	1	0	**2**	**0**
Pedalcyclist	1	1	0	0	**1**	**1**
Total	**7**	**4**	**22**	**12**	**29**	**16**
Fire Truck						
Fire Truck Driver	2	2	0	0	**2**	**2**
Fire Truck Passenger	2	2	0	0	**2**	**2**
Occupant of Other Vehicle	0	0	13	6	**13**	**6**
Pedestrian	3	0	1	1	**4**	**1**
Pedalcyclist	0	0	0	0	**0**	**0**
Total	**7**	**4**	**14**	**7**	**21**	**11**
Police Vehicle						
Police Vehicle Driver	13	4	15	3	**28**	**7**
Police Vehicle Passenger	3	1	4	3	**7**	**4**
Occupant of Other Vehicle	0	0	67	21	**67**	**21**
Pedestrian	21	5	2	1	**23**	**6**
Pedalcyclist	1	0	0	0	**1**	**0**
Total	**38**	**10**	**88**	**28**	**126**	**38**

*Refers to a vehicle traveling with physical emergency signals in use (red lights blinking, sirens sounding, etc.).

CERTIFICATE OF SERVICE

I hereby certify that on this 31st day of March, 2004, a copy of the foregoing "Reply Comments" was hand delivered or mailed first-class, postage prepaid, to the following:

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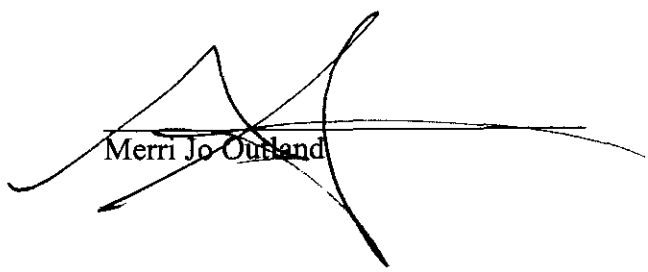

* Hand Delivered