USER ACCEPTANCE OF COMMERCIAL VEHICLE OPERATIONS (CVO) SERVICES

Task B
Critical Issues Relating To Acceptance of CVO Services By Interstate Truck and Bus Drivers
FINAL REPORT

NOTE TO READER:

THIS IS A LARGE DOCUMENT

Due to its large size, this document has been segmented into multiple files. All files separate from this main document file are accessible from links (blue type) in the table of contents or the body of the document.

USER ACCEPTANCE OF COMMERCIAL VEHICLE OPERATIONS (CVO) SERVICES
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Task B
Critical Issues Relating To Acceptance of CVO Services By Interstate Truck and Bus Drivers

FINAL REPORT

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Introduction

Penn + Schoen Associates has been commissioned by the Federal Highway Administration to conduct a study entitled "User Acceptance of Commercial Vehicle Operations (CVO) Services." The purpose of this study is to identify and evaluate critical issues relating to user acceptance of CVO services by interstate truck and bus drivers and to identify the CVO information needs of other interested parties.

This study consists of two distinct tasks. Task A, which is based on document reviews and a series of 50 in-depth interviews, fulfilled four primary objectives: 1) identified those issues relating to CVO services that are of potential impact or concern to interstate truck and bus drivers; 2) identified the information needs of other interested parties outside the U.S. Department of Transportation; 3) identified areas/topics that may deserve higher-level analysis during task B; 4) collect other information that will aid in the finalization of the workplan for Task B. The report of Task A findings has already been submitted to the Federal Highway Administration and is entitled "Identification of Concerns and Needs: Final Report of Findings From Document Reviews and In-Depth Industry Executive Interviews."

Task B is the subject of this report.

METHODOLOGY

A total of 1582 interviews were conducted with interstate truck and motor coach drivers. All interviews were conducted from February 23, 1995 to April 21, 1995 and were distributed as follows:

- 1134 in-person interviews with truck drivers
- 411 in-person interviews with motorcoach drivers
- 37 telephone interviews with participants in operation tests

The following is a detailed breakdown of the surveys:

Truck Drivers

A total 1134 interviews were conducted with truck drivers intercepted at fifteen truck stops across the United States. These truck stops were randomly selected and quotas were kept using a stratified systematic sampling methodology (probability proportional to size) based on commercial truck diesel fuel consumption by state for 1992. At each site, specially trained Penn + Schoen staff, supervising and working in conjunction with local field teams, intercepted drivers and conducted in-person interviews, entering the data directly into portable computers to ensure accuracy of results. (A list of sites where interviews were conducted can be found at the end of the document in Appendix C.)

Thirty seven interviews were conducted via telephone with truck drivers who had participated in CVO operational tests. An additional 38 truck drivers started the interview but did not qualify because they had not yet used the technology although it was installed in their vehicles.

Motorcoach Operators

A total of 411 in-person interviews were conducted with motorcoach drivers at seven sites across the United States. The intercept and interview procedure used for truck drivers was also employed for motorcoach operators. The interviews with motorcoach drivers were broken down as follows:

A total of 208 interviews were conducted with motorcoach drivers intercepted at line-run bus terminals in New York, New York and Los Angeles, CA.

203 interviews were conducted with motorcoach drivers intercepted at popular tourist attractions, which were selected in consultation with the Department of Transportation. Because interviews with charter drivers were conducted during the colder winter months, sites were selected that tend to have more charter bus trips during this time of the year:

- Orlando, FL
- Washington, DC
- Los Angeles, CA
- Las Vegas, NV

- Tables summarizing the number of interviews and the percent of the sample they represent, broken down by key demographic and other variables, can be found at the end of the document in Appendix A.

The margin of error for the entire sample of 1582 interviews is +/-2.5% at the 95% confidence level. The margin of error for the sample of 1171 truck drivers is +/-2.9% and for the sample of 411 motorcoach drivers is +/-4.8%. An additional 37 interviews were conducted with drivers who have been involved in either the I-75 or HELP/Crescent operational tests. The margin of error for this group is +/-I 6.1%.

On each chart or table, a notation of the margin of error (for single variables) or statistically significant findings at the 95% confidence level (for multiple variables) is indicated.

The following six CVO Services were tested among the respondents:

- *Commercial Fleet Management (CFM)*
- *Commercial Vehicle Eiecfronic Clearance (CVEC)*
- *Commercial Vehicle Adminisfrafive Processes (CVAP)*
- *Automated Roadside* Safety *inspection (ARSI)*
- *Hazardous Material incident Response Service (HMIR)*
- *On Board* Safety *Monitoring (OBSM)*

Each respondent was questioned about three of these technologies (those drivers who haul Hazardous Materials were introduced to four). As specified by the FHWA, all respondents received questions on Commercial Vehicle Electronic Clearance and Automated Roadside Safety Inspection, and the remaining technologies were rotated in. Only those drivers who haul Hazardous Materials received those questions on Hazardous Material Incident

Response Service. This rotation was used to ensure that the length of each interview would not exceed a length of 15 minutes.

Each technological service was evaluated using a combination of open and closed-ended questions. The services were measured across a range of attributes:

- √ *useful for me*
- √ *improves safety on the road*
- √ *reduces traffic congestion [at the station -- where applicable]*
- √ *makes my work easier*
- √ *reduces paperwork*
- √ *would give me an advantage over other drivers*
- √ *invasion of my privacy by company*
- √ *invasion of my privacy by government*
- √ *makes it easier to comply with existing regulations*
- √ *makes me more independent*
- √ *relies too much on computers/loss of human judgment*
- √ easy to *use/won't* require *too* much *training*
- √ *will work/I would rely on it*

The text of the questionnaire used to gather the data discussed in this report can be found at the end of the document (Appendix B).

Definition of Terms Used in this Report

Charter Drivers: Motorcoach drivers who usually drive charter routes

Commercial Vehicle Drivers: Refers to the entire sample of respondents, including both truck and bus drivers

Company Drivers: Truck drivers who identified themselves as working for a company

Independents/Independent Owner Operators: Those drivers who identified themselves as independent owner\operators

Line Run Drivers: Motorcoach drivers who usually drive line-run routes

Haz Mat Drivers: Truck drivers who haul loads of hazardous materials, dangerous explosives, or petroleum. Drivers who answered questions on hazardous material incident response service.

Motor Coach Driver/Operator: Any respondent whose primary job is driving **a** motor coach. Interchangeable with bus drivers.

Operational Test Drivers: Any driver who participated in a CVO operational test such as Advantage I-75, Help/Crescent, etc.

Truck Drivers: Any respondent whose primary job is driving a truck.

Note to the reader: Throughout the report, there are many references to "government" without distinction of which level of government is being referred to. This is because respondents did not differentiate between the levels of government and often referred to government as one entity.

EXECUTIVE SUMMARY

This study of CVO Services shows that on the whole, Commercial Vehicle drivers are receptive to and supportive of the use of CVO services on the road and in their vehicles. Technologies which received the most support were those that would “make my work easier,” are “useful for me” and “will work [in my vehicle] / I would rely on it.,,

However, there was some concern that certain of the technologies would be an invasion of driver privacy by either the government or the driver’s company, and also a concern that the systems would rely too much on computers and diminish the role of human judgment. Drivers were wary of services that promised too much and would leave them dependent on unproven, inexperienced technology. They wanted systems that would be reliable, workable, and useful on a consistent basis, and would not pose a threat to themselves, their vehicles, their privacy, or their livelihood.

On the whole, drivers tended to evaluate the CVO services from the perspective of their personal experience, rather than focusing on the bigger picture of the industry as whole. For example, independent owner operators, who have historically been more skeptical of technology and wary of intrusion by the government or companies, reacted more negatively toward the technologies than did other drivers. Therefore, when reviewing the results of this study it is important to pay particular attention to the analysis of subgroups, because their personal experience as a driver shaped their view of the technologies. In particular, there was significant differences between the following groups:

- Union vs. Non-union drivers
- Company drivers vs. Independent owner operators

- Younger vs. Older drivers
- Newer drivers vs. Drivers who have been driving for many years
- Truck drivers vs. Bus drivers

Driver acceptance of the installation of the technology in their vehicles is most closely linked with feelings that the technology is useful, reliable, and effective in making their jobs easier. Therefore, a primary focus of this study is to identify those drivers who stand to benefit the most from the technology, determine their initial reactions, and provide the government with actionable recommendations that they can use to make the drivers more favorable to CVO services.

The Executive Summary will seek to examine these issues and address important concerns relating to driver acceptance of CVO services.

OVERALL REACTIONS TO CVO SERVICES

A significant finding of the research is that truck and motorcoach drivers react very differently to CVO services.

Motorcoach operators generally view CVO technologies very favorably, with Commercial Fleet Management garnering the most positive reactions. At the other end of the spectrum is On Board Safety Monitoring, which was rated the least favorably by motorcoach operators. In the middle tier are Commercial Vehicle Electronic Clearance, Automated Roadside Safety Response, and Commercial Vehicle Administrative Processes, which were received favorably, but not as strongly as fleet management. Overall, motorcoach operators were favorably disposed to these technological services,

and gave solid levels of support to the installation in these services in their vehicles.

Truck drivers, on the other hand, had mixed feelings about the technologies. Hazardous Material Incident Response was rated very highly by drivers. In the middle tier we found positive reactions to Commercial Fleet Management and Commercial Vehicle Electronic Clearance. However, many truck drivers had negative reactions to three of the technologies: Commercial Vehicle Administrative Processes, Automated Roadside Safety Response, and On Board Safety Monitoring, which again was viewed least favorably.

What follows is an index summarizing the level of driver support versus level of driver resistance for the installation of these 6 technologies in their vehicles:

Index Of Favorability To Installation In Drivers' Vehicles

Ratio of Percent Strongly in Favor to ***Percent Completely Opposed***

CVO Service	Truck Drivers	Motorcoach Operators
HMIR	7.9 to 1	N/A
CFM	3.1 to 1	6.1 to 1
CVEC	2 to 1	3.3 to 1
ARSI	1.2 to 1	4.7 to 1
CVAP	1 to 1	3.8 to 1
OBSM	.70 to 1	2 to 1

The index shows the higher levels of support among motorcoach operators than among trucks drivers. Also evident is the extreme variation in reaction to the services within the population of truck drivers, ranging from very favorable reactions to HMIR to a mix of positive and strongly negative feelings about the lower tier technologies.

REACTIONS TO CVO SERVICES BY SEGMENT

Far from having monolithic opinions about CVO Services, commercial vehicle operators showed *significant variation by sub-group* in their attitudes toward the technologies. For example, ***truck drivers and motorcoach operators often react very differently to the services.***

Within these two populations, there are also important differences by segment. For example, among truck drivers, the following groups had significant differences of opinion about Commercial Fleet Management:

More supportive of CFM	More opposed to CFM
- Company drivers	- Independent owner operators
- Long haul drivers	- Short haul drivers
- Large fleet	- Small or medium fleet drivers
- New drivers	- Those who have been driving longer
- Drivers with new technology in their vehicles already	- Vehicles without technology

In fact, among 5 of the 6 technologies, important sub-group variation **was** seen among truck drivers in their reaction to the services.

Higher level analysis was conducted in order to isolate those segments of the population who are more or less favorable to the installation of CVO Services in their vehicles.

The entire sample was divided into three categories: “acceptors,” “skeptics,” or “rejecters”:

- Acceptors are those who are favorable toward the implementation of all of the technologies to which they were exposed
- Skeptics were favorable to the implementation of at least one, but not all of the technologies
- Rejecters were favorable to the implementation of none of the technologies.

Overall, the sample broke down as follows:

- Acceptors	46% of sample
- Skeptics	42%
- Rejecters	12%

Cluster and cross-tabular analysis point to certain segments of the industry that are more likely to accept the technologies. In particular, looking at the entire sample and all the technologies together, it was determined that the members of the following groups are more likely to be “acceptors” of these CVO technologies:

- Motorcoach operators
- Less experienced drivers
- Lower income
- Spend more than half an hour per day at weigh stations, inspection sites, or-filling out paperwork

Among truck drivers, the following additional groups are also more likely to be favorable to the installation of the technologies:

- Union drivers
- Company or private fleet drivers
- Drivers in large fleets
- Paid by the mile

Among motorcoach operators, the following additional groups are more likely to be favorable to the technologies:

- CB radio in motorcoach
- Drive predominantly in the South
- Charter drivers
- Daily route varies

The significant differentiation by segment does not mean, however, that no common patterns of driver acceptance of CVO technologies were seen. On the contrary, the research suggests that across the different technologies, drivers acceptance was based on very similar reasons.

FACTORS LEADING TO ACCEPTANCE OF CVO SERVICES

Higher level multiple regression and factor analysis were conducted to determine which factors were most associated with acceptance of CVO services. Although the different services elicited varied responses from drivers, higher level analysis was able to distill ***common themes that are associated with driver acceptance of the services overall.***

The characteristic which underlies positive feelings toward the technologies overall is *makes my work easier.* In other words, ***drivers were most likely to be***

***positively disposed toward the technologies if they felt that it would* make their work easier.**

Driver acceptance of the installation of technology in their vehicles is most closely /inked with feelings that the technologies are useful, effective, and reliable. Benefits such as increasing driver independence, reducing paperwork, reducing traffic and congestion, increasing safety, and helping eomply with regulations are on the whole *less important* to driver acceptance than the general feeling that the technologies are *useful for me* and *will work / I would rely on it.*

Thus the three most important attributes in making drivers favorable to and accepting of CVO services are:

- makes *my work easier*
- *will work/I would rely on it*
- *useful for me*

These findings are supported by the results of interviews conducted with participants in I-75 or HELP/Crescent operational tests. These respondents rated the technologies that they tested significantly higher than the rest of the population in terms of being *"useful for me"* and *"will work/I would rely on it."*

Variation between technologies does exist, but nevertheless, the overall ***most effective way to frame the technologies*** in order to produce driver acceptance would be ***in terms of the personal benefits enumerated above.***

On the other hand, the idea that these technologies are intrusive and are in fact an "invasion of privacy" was seen to be highly correlated to driver *rejection*

of the technologies. The two attributes most likely to produce driver rejection of the technologies are:

- *invasion of my privacy by company*
- *invasion of my privacy by government*

Typically, it is independent owner operators and drivers who have been driving for a long time who are most worried about government and company intrusion and supervision.

Also highly associated with this fear of intrusion is the feeling that the technology *"relies too much on computers/loss of human judgment."*

Looking at verbatim comments from drivers who are opposed to CVO services as well as the ratings drivers gave the technologies, one gets the sense that ***drivers react negatively to the technologies when they feel they would represent a threat of some kind.*** Some drivers worry that certain technologies would allow enforcement personnel or company representatives to monitor and penalize them; some others, for example, worry that their record keeping would be closely scrutinized and that they would be disciplined for minor infractions.

Thus, producing driver acceptance of CVO services could be most effectively accomplished by showing drivers that the technologies will make drivers work easier, and generally be useful and reliable, while finding a way to minimize the feeling that the technology will lead to increased control over them or an invasion of driver privacy by either the drivers' company or the government.

These findings suggest that it is may not be necessary to develop widely different approaches for marketing different technologies, as ***great uniformity***

was seen across the technologies in terms of what attributes are most closely related to driver acceptance of the technologies. On the other hand, targeting problematic sub-groups of the population who are more resistant to these technologies would most likely be beneficial in securing broad based support their introduction into the industry.

OPERATIONAL TEST PARTICIPANTS

From the interviews conducted with drivers who had participated in operational tests of the technologies, it emerged that ***actual experience working with CVO technologies will likely lead to greater driver acceptance.***

While the small number of interviews conducted with operational test participants means that these results are qualitative in nature, nevertheless participants were much more favorable toward Commercial Vehicle Electronic Clearance and Automated Roadside Safety Inspection than were drivers overall.

In particular, drivers who have engaged in operational tests were more likely to say that the technologies were *useful for me* and *will work/i would rely on it* and less likely to say they would cause an *invasion of privacy by the government* -- three factors which our higher level analysis showed were crucial to increasing driver acceptance of technologies.

Thus, this data suggests that placing technologies directly in the hands of users themselves, and allowing them to experience and experiment with the CVO services, would likely be an effective way to increase driver acceptance of the technologies and reduce driver fears and concerns about them.

IMPLICATIONS

The success of the operational tests suggests a possible role for the federal government in increasing the acceptance of CVO services. If the intent of the government is to foster the acceptance of these technologies, there is a real opportunity to help to do that by giving drivers an opportunity to experience the technologies first hand. ***Thus, supporting pilot programs that allow drivers to use the technologies would likely bring long term benefits in terms of increasing driver acceptance.***

Further, the research highlights the value of ***specifically targeting subgroups of the population*** which are more wary than average of the technologies. Trial programs could be designed that would be specifically tailored to the concerns of target groups. Such programs could be very valuable if they were able to ***allow drivers to experience the technologies in an un threa tening environment.***

SUMMARY OF REACTIONS TO CVO SERVICES

Reactions to CVO services varied widely, with some such as Hazardous Materials Incident Response and Commercial Fleet Management garnering very positive ratings from a significant majority of respondents, while others such as On Board Safety Monitoring were perceived to have liabilities by many respondents.

What follows is a brief discussion of drivers reactions to each technology and an examination of what they perceived as the benefits and drawbacks of each.

Commercial Fleet Managemenf (CFM)

Compared to the other CVO Services tested, Commercial Fleet Management was very well received by respondents. Looking at the ratio of those who are strongly in favor of the technology versus those who are completely opposed, truck drivers favored this technology by a 3:1 margin, and motorcoach operators by ***6:*** 1. ***Moforcoach drivers were especially favorable to this service because of its usefulness and potential to increase safety.***

Unlike many technologies which were seen to have significant benefits as well as serious liabilities, CFM was not burdened by substantial drawbacks. Overall, it was seen as:

- Useful
- Easy to use
- Helpful in complying with regulations
- Reliable

Among truck drivers in favor in installation, the largest percentage said they were in favor of the improved communications with their dispatcher.

Motorcoach operators also found fleet management to be among the most useful of all the services tested.

Those opposed to installation of Commercial Fleet Management in their vehicle viewed it as an invasion of their privacy and as relying too much on computers.

Automated Roadside Safefy inspection (ARSI)

Similar to other technologies, ARSI was received more favorably by motorcoach rather than truck drivers, Among truck drivers, the ratio of those strongly in favor of installation to those completely opposed was approximately 1 :1, while it was nearly 5:1 among motorcoach operators. ***Both truck and motorcoach drivers reported that automated roadside safety inspection service'wouid help improve safety and reduce traffic at the station, but compared to the other five CVO services tested, truck drivers were not particularly favorable towards automated roadside safefy inspection.***

The most frequently cited reason why truck drivers opposed the technology was because they felt that computers could not accurately inspect their truck, it was an invasion of privacy, and there would be too much government involvement.

On the other hand, those truck drivers in favor of using automated roadside safety inspection service said they were favorable because it of its benefits including:

- Save time
- Improve safety

Drivers who were engaged in I-75 or HELP/Crescent operational tests rated this service significantly higher than did the overall sample on the following attributes:

- *useful for me*
- *will work/I would rely on it*
- *would give me an advantage over other drivers*

These respondents were also significantly less likely to say that the technology exhibits weaknesses such as relying too much on computers or being an invasion of privacy by the government. Operational test participants were also significantly more likely to favor installation of ARSI in their vehicles.

Overall, motorcoach drivers were more favorable towards automated roadside safety inspection service than truck drivers. ***A majority of motorcoach drivers thought that this technological service would bring safety benefits on the road, help reduce traffic at the station, and be useful for them.***

Although the majority of motorcoach drivers were favorably disposed toward this technology and thought it would bring them benefits, a number of them think that this technological service is an invasion of privacy by the government, and that it relies too much on computers.

Hazardous Maferiais incident Response (HMIR)

Truck drivers were ***extremely favorable towards hazardous material incident response service,*** placing this technology in the top tier, above even Commercial Fleet Management. Respondents strongly favored installation by a margin of 8:1 over those strongly opposing it. By this measure and others, this technology was the ***most popular*** tested among truck drivers [this service was not tested among motorcoach operators.

In particular, a majority of truck drivers felt that hazardous material incident response would:

- Improve safety
- Be useful to them
- Work/they could rely on it
- Make it easier to comply with regulations
- Be easy to use

On the downside, approximately one in four respondents thought HMIR relied too much on computers and excluded human judgment.

On Board Safety Monitoring (OBSM)

Compared to the other CVO services tested, users were not particularly favorable towards on board safety monitoring. In fact, among both motorcoach and truck drivers, this was the *least popular* technology tested. ***While a majority of respondents were still able to recognize the pofentiai safety benefits of this service, the idea that the technology was too invasive and too reliant on computers made many respondents unwilling to accept this service.***

Among truck drivers, safety is the greatest perceived benefit of on board safety monitoring service. *in fact, on board safety monitoring was rated higher than* **any** *other CVO service -- except for hazardous material incident response service -- for its ability to improve safety on the road.*

However, many respondents feared that on board safety monitoring service would be an invasion of their privacy by the government, relied too heavily on computers, or would be an invasion of drivers' privacy by their

company. ***In fact, among truck drivers, there are more drivers completely opposed to on board safefy monitoring than drivers strongly in favor of if.***

Favorable impressions of OBSM seem to stem from driver perceptions that the system will monitor the cargo and the vehicle and improve safety. A number of strategies for mitigating driver opposition were suggested by the research. Many drivers felt that they would be more positive if the monitoring was not focused on the driver, but rather on the truck. Others also felt that the government should not be involved and that the information generated by the system should not go to enforcement personnel.

Although motorcoach operators also had mixed opinions of On Board Safety Monitoring, nevertheless the majority of motorcoach operators think this service would:

- Improve safety
- Be easy to use
- Make it easier to comply with regulations
- Be useful for them

Motorcoach operators strongly favored installation by a ratio of 2:1 over those completely opposed. This level of support is, however, the lowest for any technology tested among motorcoach operators.

Commercial Vehicle Electronic Clearance (CVEC)

Both truck drivers and motorcoach operators were favorable to CVEC. ***Among truck drivers, we o&served a 2:1 ratio of those strongly favoring installation of this service in their vehicles over those completely opposed,***

placing this technology -- along with Commercial Fleet Management -- above CVAP, OBSM, and ARSI but below Hazardous Materials Incident Response in terms of level support for installation versus amount of resistance. ***Motorcoach operators favored installation by a ratio of more than 3.1.***

Both motorcoach and truck drivers thought CVEC would have benefits such as its ability to reduce traffic at stations. Approximately 4. out of 5 truck drivers “strongly agreed” that CVEC would reduce traffic at weigh stations, and a majority felt it would make their work easier, be useful for them, and improve safety on the road. But many also feared that commercial vehicle electronic clearance would lead to an invasion of their privacy by the government and that it relied too heavily on computers.

Drivers who were engaged in I-75 or HELP/Crescent operational tests were more likely to find benefits in the technology such as being useful and reliable, and less likely to perceive it as an invasion of privacy. It is not surprising then that ***these respondents were more likely than the overall population to favor having* this *service installed in their vehicle.***

Motorcoach operators were less inclined than truck drivers to **say** *that commercial vehicle electronic clearance helps reduce traffic at the station, that it would make their work easier or be useful for them. However, motorcoach operators were more* **likely than** *truck* **drivers to** *report* **that CVEC would make it** *easier to comply with existing regulations and help reduce paperwork.*

Commercial Vehicle Administrative Processes (CVAP)

Commercial Vehicle Administrative Processes was among the least popular technologies with truck drivers, but was ranked higher among motorcoach operators.

Truck drivers were not particularly favorable towards commercial vehicle administrative processes, although approximately half the respondents agreed that CVAP would reduce paperwork and make it easier to comply with existing regulations. ***In fact, among truck drivers, equal numbers completely opposed installation and strongly favored if.***

However, approximately half of respondents felt that this service would be an invasion of privacy by the government, and lesser but still significant numbers thought that the service relies too heavily on computers and would be an invasion of privacy by companies. Moreover, ***fewer respondents than average felt that this service would be useful to them.***

Looking at the two separate components of the service, it is seen that truck drivers are somewhat more favorable to electronic purchase of credentials than automated mileage, fuel reporting or auditing.

In marked contrast to truck drivers, motorcoach drivers were very favorable towards commercial vehicle administrative processes. Overall, motorcoach operators supported installation by a ratio of 4:l. Many felt that it would ***reduce paperwork, make if easier to comply with regulations, be useful and give them an advantage over other drivers.*** A minority of respondents, however, felt that this service would be an invasion of privacy by companies or the government, and that it relies too much on computers.

A detailed examination of critical issues relating to user acceptance of CVO services and interstate truck and bus drivers follows.

GENERAL REPORT

I. COMMERCIAL FLEET MANAGEMENT (CFM)

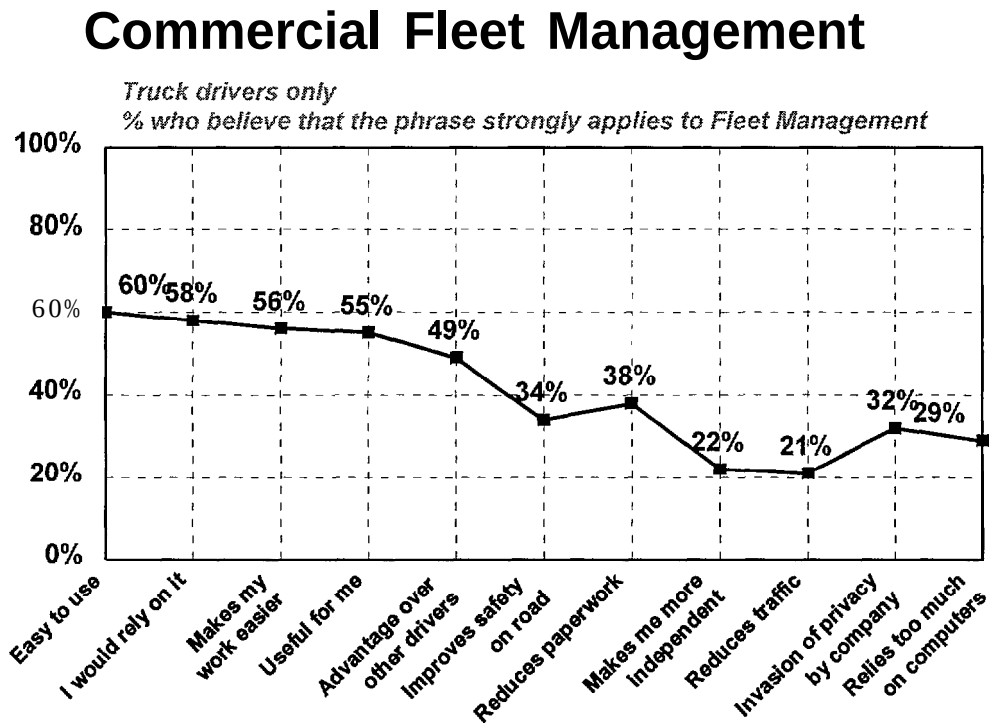
Overall, commercial vehicle drivers were favorable towards Commercial Fleet Management and the majority would look favorably on having it installed in their vehicles. Compared to the other five CVO Services tested, Commercial Fleet Management was very well received by respondents. if was seen as very useful, easy to use, very reliable, and able to make if easier for drivers to comply with regulations. This is particularly true among motorcoach operators, who found fleet management to be among the most useful of ail the services tested. Relative to the other services, most drivers did not think that negative attributes, such as relied too much on computers or invasion of privacy by the company, were particularly applicable.

TRUCK DRIVERS' OPINIONS OF COMMERCIAL FLEET MANAGEMENT

PERCEIVED BENEFITS OF COMMERCIAL FLEET MANAGEMENT

The majority of truck drivers were able to recognize some of the benefits that Commercial Fleet Management would have for them personally. Across a range of attributes, more than half of the respondents "strongly agreed" that Commercial Fleet Management would be easy to use, reliable, useful for them, and would make their work easier.

Chart I. 1– Attribute Ratings -- Truck Drivers Only



Margin Of error = +I- 4.3%
Penn + Schoen Associates, Inc. T84-94

Certain segments of truck drivers were particularly favorable towards Commercial Fleet Management. The following subgroups of drivers rated Commercial Fleet Management highly across the range of attributes:

- ***Company drivers were better able to recognize the strengths of fleet management than independent owner operators***

- ***Long haul drivers rate Commercial Fleet Management higher than short haul drivers, especially with regard to thinking if is useful***

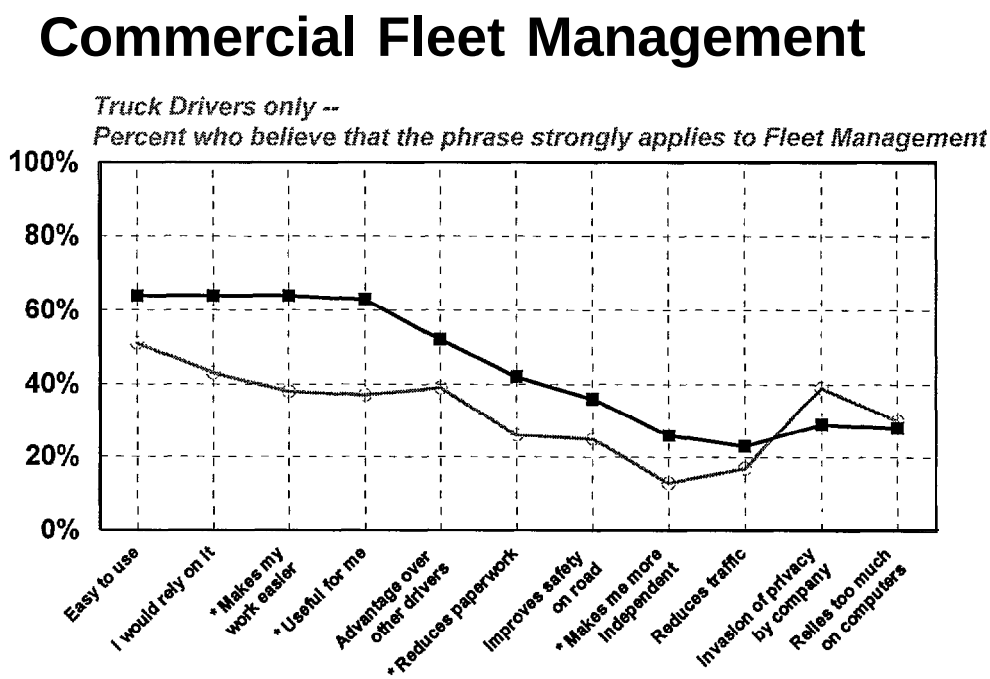
- ***Drivers who are part of a large fleet are more favorable towards CFM than small or medium fleet drivers***

- ***Drivers with some new technologies already installed in their trucks were more favorable towards this service than those drivers without new technologies in their vehicles***

- ***Drivers who are relatively new to the profession (<5 years) rate Commercial Fleet Management higher across the positive attributes than those drivers who have been driving for more than five years***

Overall, company drivers are more likely than independent owner operators to rate Commercial Fleet Management highly. More than three-fifths of company drivers believe that fleet management would be easy to use (64%), reliable (64%), and would make their work easier (64%). Also, 63% of company drivers strongly agree that this service would be useful for them, compared to the 37% of independents who think so.

Chart I.2-- Attribute Ratings -- Company vs. Independent



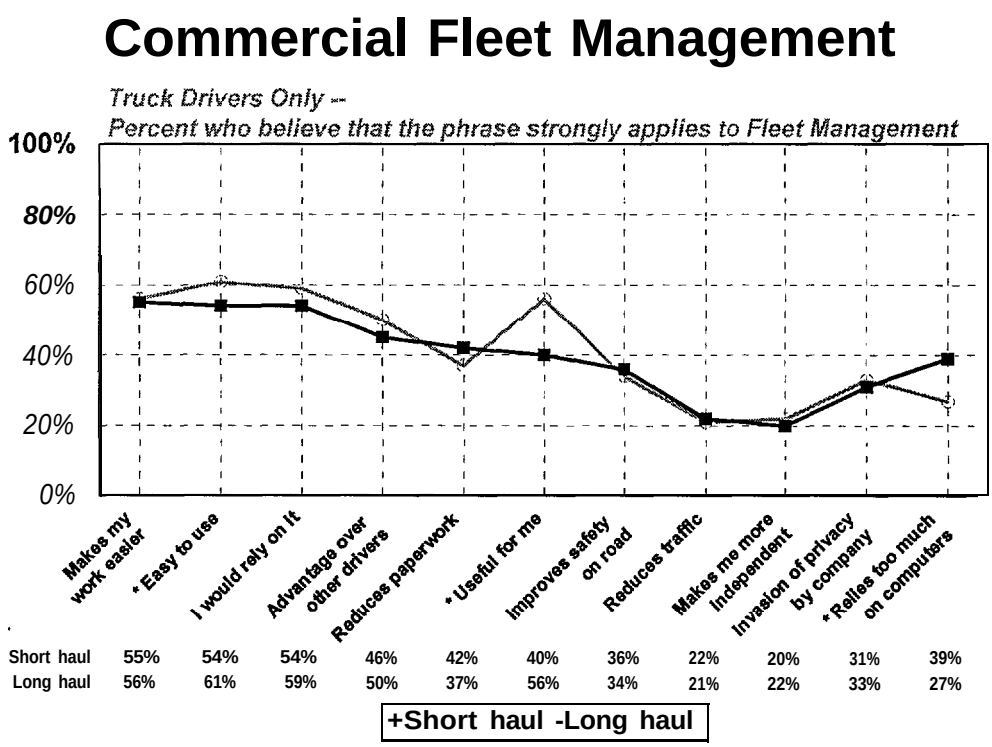
	Easy to use	I would rely on it	*Makes my work easier	*Useful for me	Advantage over other drivers	*Reduces paperwork	Improves safety on road	*Makes me more independent	Reduces traffic	Invasion of privacy by company	Relies too much on computers
Company drivers	64%	64%	64%	63%	52%	42%	36%	26%	23%	29%	26%
Independents	51%	43%	38%	37%	39%	26%	25%	13%	17%	39%	30%

+Company drivers *Independents

* = Statistically Significant
Penn + Schoen Associates, Inc. T84-94

Long-haul drivers (56%) are much more likely than short haul drivers (40%) to find Commercial Fleet Management useful for them. In addition, long haul drivers are somewhat more likely than short haul drivers to think that Commercial Fleet Management is easy to use, gives them an advantage over other drivers, and is reliable.

Chart 1.3 --Attribute Ratings -- Short haul vs. Long haul

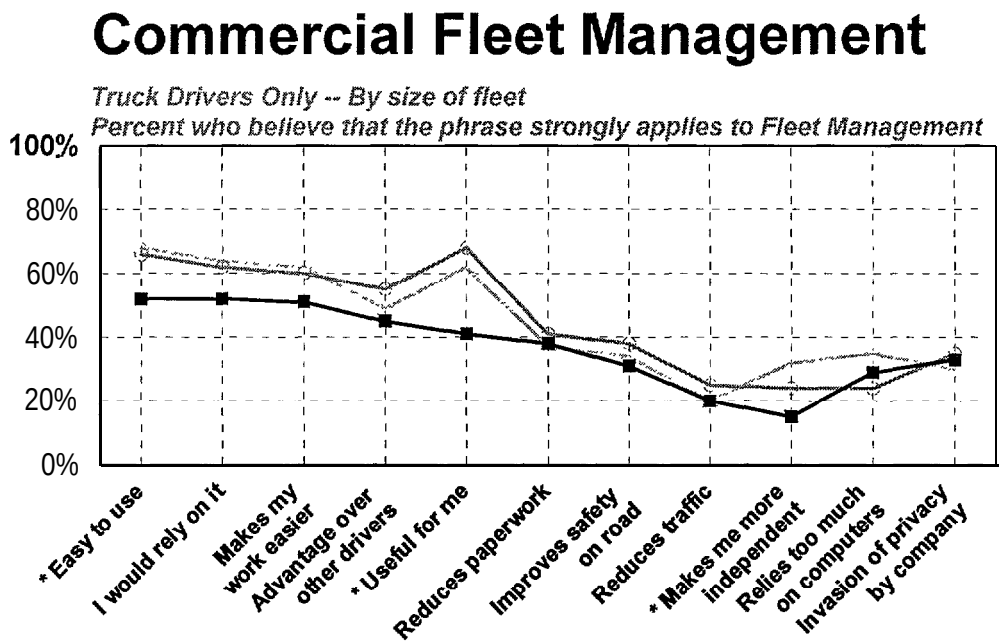


* = Statistically Significant
Penn + Schoen Associates, Inc. T84-94

Drivers have differing opinions of Commercial Fleet Management depending on the size of their fleet. Drivers who consider themselves part of a large or medium fleet are more favorable towards Commercial Fleet Management across the range of attributes than small fleet drivers. This variation between subgroups is especially significant on “useful for me” -- small

fleet drivers (41%) are much less likely than large (62%) and medium fleet (68%) drivers to think that CFM is useful for them.

Chart I. 4 --Attribute Ratings -- Small fleet vs. Medium fleet vs. Large fleet



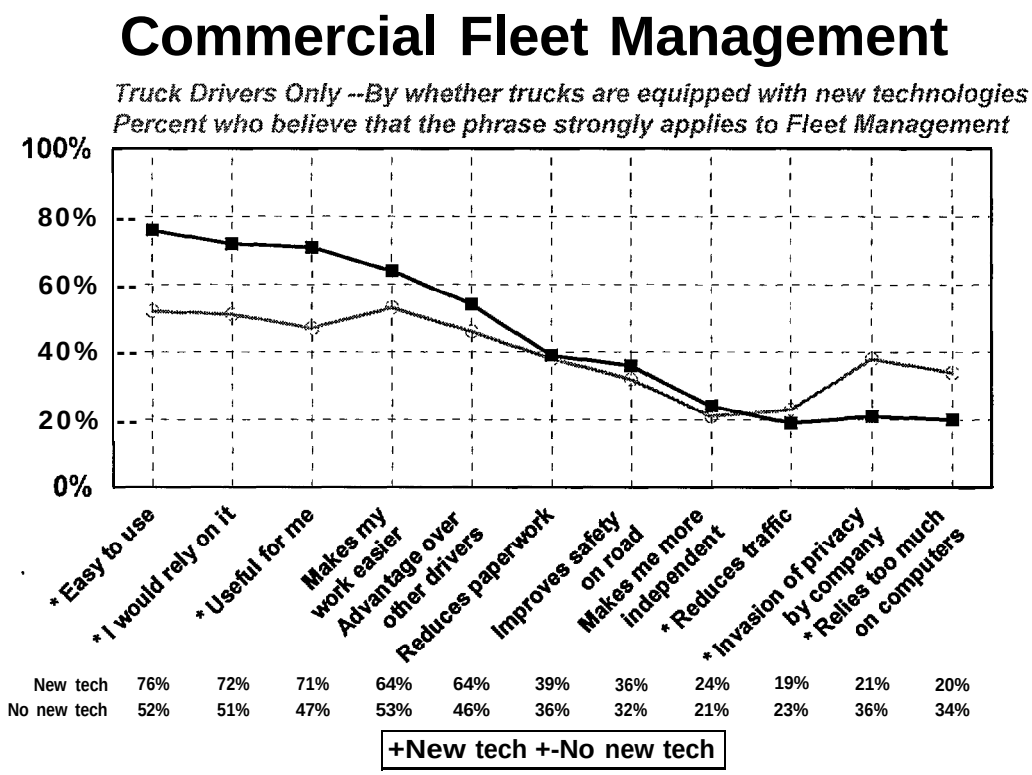
	* Easy to use	I would rely on it	Makes my work easier	Advantage over other drivers	* Useful for me	Reduces paperwork	Improves safety on road	Reduces traffic	* Makes me more independent	Relies too much on computers	Invasion of privacy by company
Small	52%	52%	51%	45%	41%	38%	31%	20%	15%	29%	33%
Medium	66%	62%	60%	55%	66%	41%	30%	25%	24%	24%	35%
Large	68%	64%	62%	49%	62%	37%	34%	20%	32%	35%	30%

+Small +-Medium ---Large

* = Statistically Significant
Penn + Schoen Associates, Inc. T84-94

Across the range of attributes, truck drivers who have already had new technologies installed in their trucks are more favorable towards Commercial Fleet Management than those drivers without new technologies. Drivers already familiar with technologies in their vehicles are more likely to think that fleet management would be easy to use, would work (is reliable), would be useful for them, and would make their work easier.

Chart I. 5 -- Attribute Ratings -- Drivers with technology vs. Drivers without technology

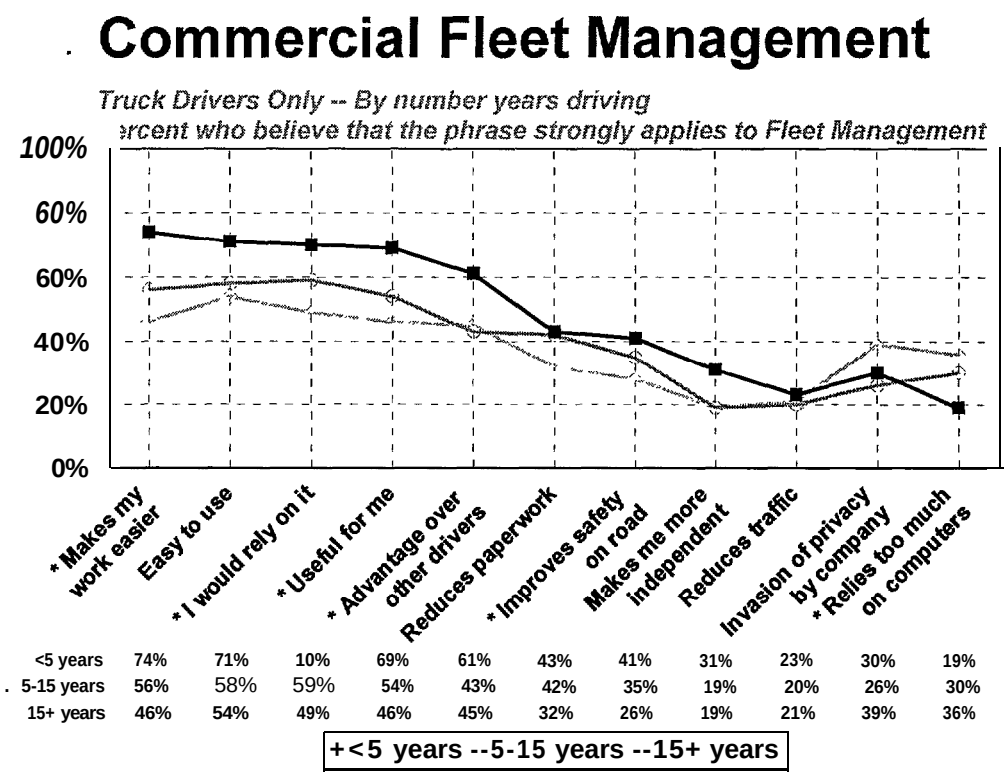


* = Statistically Significant
Penn + Schoen Associates, Inc. T84-94

Truck drivers' perceptions of Commercial Fleet Management also varied by the number of years the respondent has been a truck driver. *Those drivers who have been driving for a shorter amount of time (less than 5 years) seem better able to recognize the positive aspects of fleet management than drivers who have been driving for longer periods of time.* In fact, three out of four drivers

(74%) who have been driving for less than five years strongly agree that Commercial Fleet Management would make their work easier compared to the 46% of those who have been driving for more than fifteen years. This segment of respondents also strongly believes this service would be easy to use, reliable, useful for them, and would provide them with an advantage over other drivers.

Chart I. 6 --Attribute Ratings -- By number of years driving



* = Statistically Significant
Penn + Schoen Associates, Inc. T84-94

PERCEIVED WEAKNESSES OF COMMERCIAL FLEET MANAGEMENT

Although truck drivers overall are very favorable to CFM compared to other services, they did cite certain weaknesses of Commercial Fleet Management. As Chart 1.1 (see above) illustrates, truck drivers perceive the following weaknesses of this service:

- ***One in three respondents (32%) think that Commercial Fleet Management is an invasion of their privacy by their company***

- ***Twenty nine percent (29%) of truck drivers think that Commercial Fleet Management relies too heavily on computers***

- ***Commercial fleet management is not rated particularly high for its ability to reduce traffic (21%) or to increase drivers' independence (22%)***

The following segments of truck drivers are more likely to recognize the potential weaknesses of Commercial Fleet Management.

- ***As indicated in Chart 1.2, independents rate commercial fleet significant/y lower than company drivers across the range of positive attributes. Also independent owner operators (39%) are more likely than company drivers (29%) to think that CFM is an invasion of drivers' privacy by their company***

- ***Short haul drivers (39%) are more likely than long haul drivers (27%) to think that Commercial Fleet Management relies too heavily on computers (see Chart 1.3 above)***

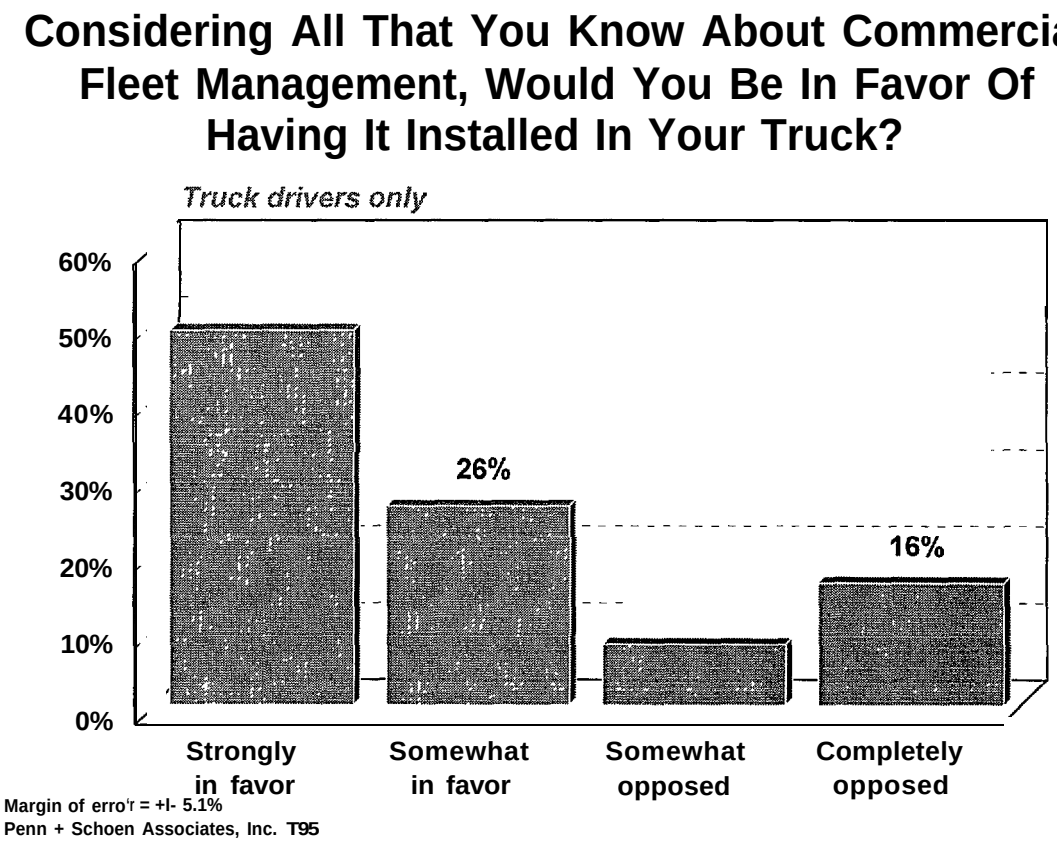
- ***Drivers without technologies in their vehicles (34%) are more likely than drivers with technologies (20%) to think that Commercial Fleet Management relies too heavily on computers. These drivers without technology (38%) are also more likely than drivers with technology (21%) to think that this service would be an invasion of privacy by the company. In addition, drivers with no technology rated CFM lower across the range of positive attributes. (see Chart 1.5 above)***

- ***Drivers who have been driving for more than fifteen years are more likely to recognize the weaknesses of Commercial Fleet Management. Drivers for fifteen or more years (36%) are almost twice as likely as newer drivers (19%) to think that Commercial Fleet Management is too reliant on computers. In addition, drivers for more than fifteen years are more likely to think that CFM is an invasion of drivers' privacy by the company. (see Chart 1.6 above)***

ATTITUDES TOWARDS COMMERCIAL FLEET MANAGEMENT

After Hazardous Materials Incident Response, CFM was the next best technology for truck drivers: three-quarters (75%) of truck drivers look favorably towards Commercial Fleet Management and would be in favor of having it installed in their vehicles. Approximately half of truck drivers (49%) were "strongly in favor" of installation, while an additional quarter of truck drivers were "somewhat in favor." However, 24% of respondents were opposed to installation.

Chart I. 7-- Truck drivers only -- Favorability towards installation



Favorability towards using Commercial Fleet Management varied among subgroups of truck drivers. Company drivers (60%), who were more positive toward Commercial Fleet Management on the attributes, were more than twice

as likely as independent owner operators (25%) to strongly favor installation of fleet management in their vehicles. Independents (42%), on the other hand, are more than twice as likely as company drivers (19%) to oppose installation of this service.

Table 1.1-- Favorability and Opposition To Installation of Commercial Fleet Management

Considering all that you know about Commercial Fleet Management, would you be in favor of having it installed in your truck?

Statistically significant

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	49	75	16	24
Company	60	88	14	19
Independent	25	58	25	42

Small fleet drivers (24%), who are more likely to recognize the weaknesses of Commercial Fleet Management, are more than twice as likely as large (9%) and medium (12%) fleet drivers to “completely oppose” installation of Commercial Fleet Management. Large fleet drivers (34%), on the other hand, are more likely to strongly favor installation of Commercial Fleet Management than small fleet drivers (34%).

Table I.2 -- Favorability and Opposition To Installation of Commercial Fleet Management

Considering all that you know about Commercial Fleet Management, would you be in favor of having it installed in your truck?

Statistically significant

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	49	75	16	24
Small fleet	34	67	24	33
Medium fleet	56	81	12	19
Large fleet	66	83	9	17

Overall, drivers with technology already installed in their vehicles represent the segment of truck drivers most favorable towards installation of Commercial Fleet Management in their vehicles -- 72% strongly favor installation while 87% are strongly + somewhat in favor. Those drivers currently without technologies in their vehicles are less likely to strongly favor installation (38%).

Table I. 3 -- Favorability and Opposition To Installation of Commercial Fleet Management

Considering all that you know about Commercial Fleet Management, would you be in favor of having it installed in your truck?

Statistical/y significant

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck	49	75	16	24
Technology in truck	72	87	8	13
No technology in truck	38	70	20	30

Drivers who have been driving for less than five years were more inclined to favor installation of CFM Of those drivers who have been driving for less than five years, 68% strongly favor installation compared to the 36% of drivers who have been driving for more than fifteen years. Conversely, those drivers who have been driving for more than fifteen years (23%) are almost four times more likely than those drivers who have been driving for less than five years (6%) to completely oppose installation.

Table I. 4 -- Favorability and Opposition To Installation of Commercial Fleet Management

Considering all that you know about Commercial Fleet Management, would you be in favor of having it installed in your truck?

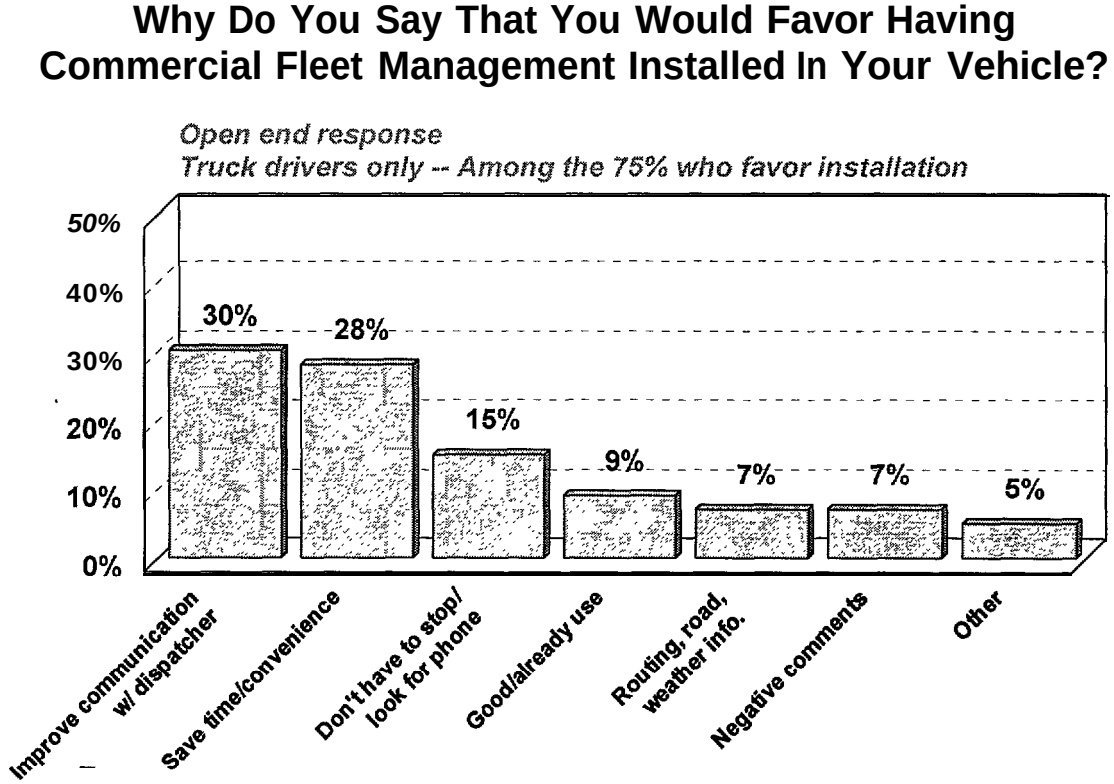
Statistical/v significant

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck	49	75	16	24
<5 years driving	68	87	6	13
5-15 years driving	51	77	15	22
15+ years driving	36	67	23	33

REASONS DRIVERS ARE IN FAVOR OF USING FLEET MANAGEMENT

When drivers were asked in their own words why they favor installation of Commercial Fleet Management, respondents recognized that the CVO Service would be beneficial to them by improving communications with the dispatcher (30%) saving time (28%), and by eliminating the need to pull over and use the phone (15%). Nine percent of respondents favored the technological service because they had already used it.

Chart I. 8 -- Open end – Favorability towards installation



Margin of error = +I- 5.9%
Penn + Schoen Associates, Inc. T96

In the drivers' own words, they would be in favor of installation of Commercial Fleet Management for some of the following reasons:

- *"Does cut down on phone time for routing; can punch in destination; cuts down on pulling in and having to stop. Gives drivers more time to sleep and drive"*

- *"Helps save time and convenience; helps with delivery changes. A good communication device. Have something solid as proof to what was said about a certain situation"*

- *"My biggest fear is breaking down and not being able to communicate with anyone -- this would help. I used one previously and it was great. You can get directions and routing"*

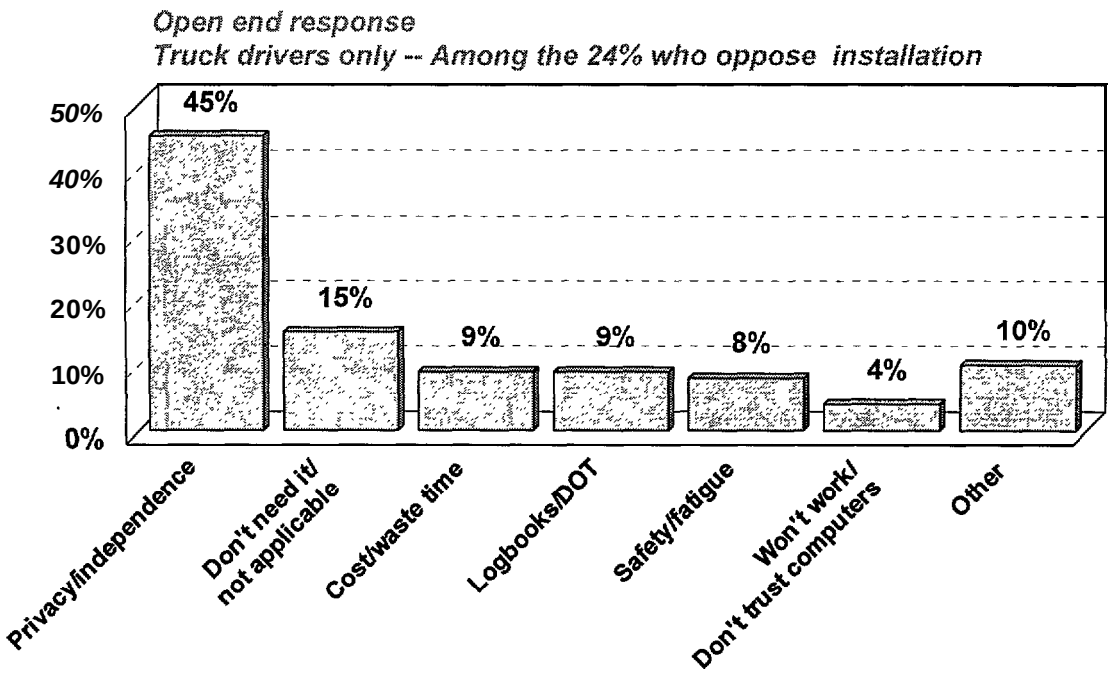
- *"I already have a system similar to it called Qualcomm and I like it"*

REASONS DRIVERS ARE OPPOSED 7-O FLEET MANAGEMENT

The 24% of truck drivers who are opposed to having Commercial Fleet Management installed in their vehicle were asked to explain why. As the following chart indicates, almost half of these truck drivers (45%) were opposed to this service because they thought it would be an invasion of their privacy or would decrease their independence.

Chart I. 9 -- Open end -- Opposition to installation

Why Do You Say That You Are Opposed To Having Commercial Fleet Management Installed In Your Vehicle?



Margin of error = +I- 10.3%
Penn +Schoen Associates. Inc. T97

Some of the drivers responded that they were opposed to Commercial Fleet Management for the following reasons:

- √ *"A driver is the only one who knows how capable he is to drive. The computer shouldn't tell the driver what to do since the driver is there and is the only one who knows the conditions. A man 2000 miles* away *doesn't know what is going on. Anything that distracts the driver is unsafe. It is not good to* **have** *the driver pull over in order to read the computer screen and then send a message back."*

- √ *"costs would outweigh the benefits. I already* **have** *weather channels. I need to stop occasionally. "*

- √ *"I don't think dispatchers need to know where I* **am** *at all times. "*

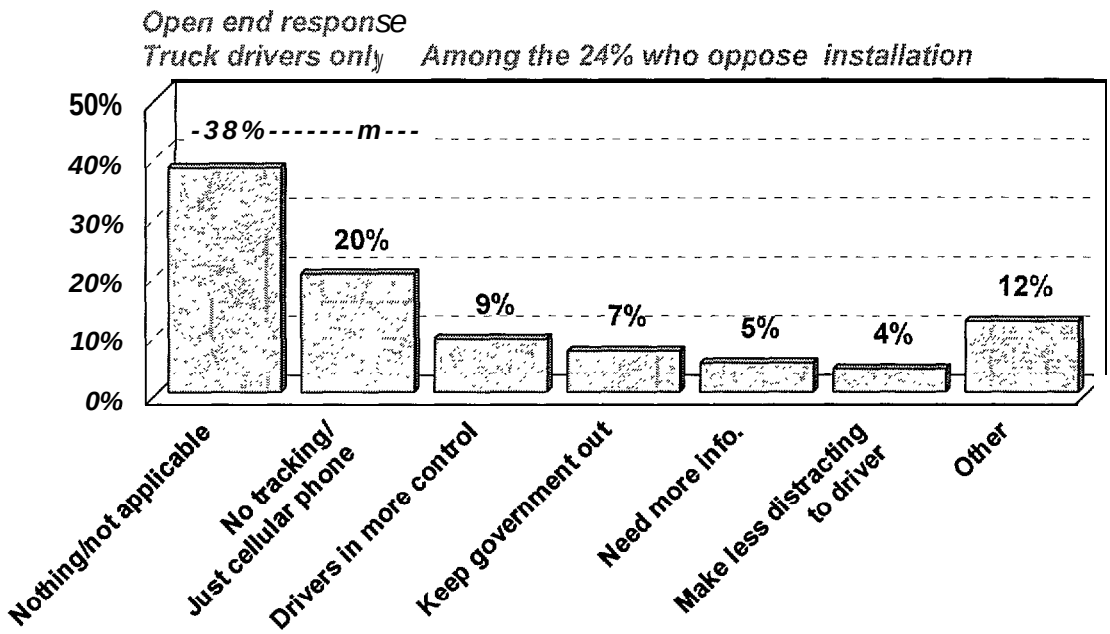
- √ *"They are a hazard -- divert attention from the road."*

- √ *"Satellites* **can** *trace where you are and I am not always where my log book says I am. I would be in favor of cellular phones for emergencies."*

These 24% of drivers who are opposed to installation of automated roadside safety inspection service were then asked if anything about the service could be changed to make them more favorable towards it. More than one in three respondents (38%) said that nothing could be changed to increase favorability. One in five respondents (20%) would be more favorable to the service if it did not consist of a tracking device and instead was more like a cellular phone. In addition drivers wanted to be sure drivers would be in control (9%) and the government would not interfere (7%).

Chart l. 10 -- Open end -- Opposition to installation

What About Commercial Fleet Management Could Be Changed To Make You More Favorable Towards This Technology?



Margin of error = +I- 10.3%
Penn + Schoen Associates, Inc. T98

Drivers' offered the following verbatim responses as to what about the technology could be changed to make drivers more favorable:

- *"Don't like the idea that dispatcher can* call *you anytime (even when you are on break) -- too much computerized"*
- *"If the government did not have access to the contents"*
- "Only problem is that the company knows where you are at all times"

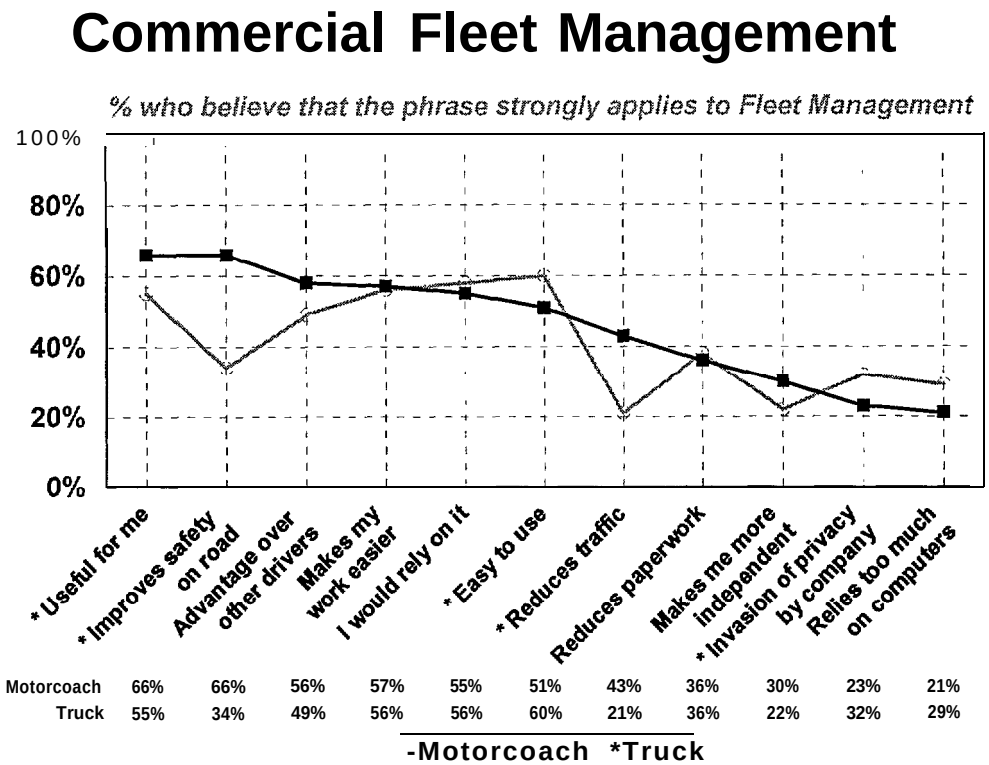
ATTITUDES AND OPINIONS OF MOTORCOACH OPERATORS

PERCEIVED BENEFITS OF COMMERCIAL FLEET MANAGEMENT

Similar to what was found among truck drivers, Commercial Fleet Management was received positively by motorcoach drivers. In fact, these drivers are more favorable to the installation of CFM than any of the other technologies. Nevertheless, they perceive Commercial Fleet Management somewhat differently than truck drivers. Motorcoach operators are much more likely than truck drivers to think that Commercial Fleet Management improves safety on the road, reduces traffic, is useful for the driver, and gives them an advantage over other drivers.

As the following chart indicates, two-thirds (66%) of motorcoach operators felt that Commercial Fleet Management would be useful for them and would improve safety on the road. In addition, more than half of the respondents thought that this service would give them an advantage over other drivers (58%), make their work easier (57%), would work and would be reliable (55%) and would be easy to use (51%).

Chart 1.11 --Attribute Ratings -- Truck drivers vs. Motorcoach drivers



* = Statistically significant
Penn + Schoen Associates, Inc. T84-94

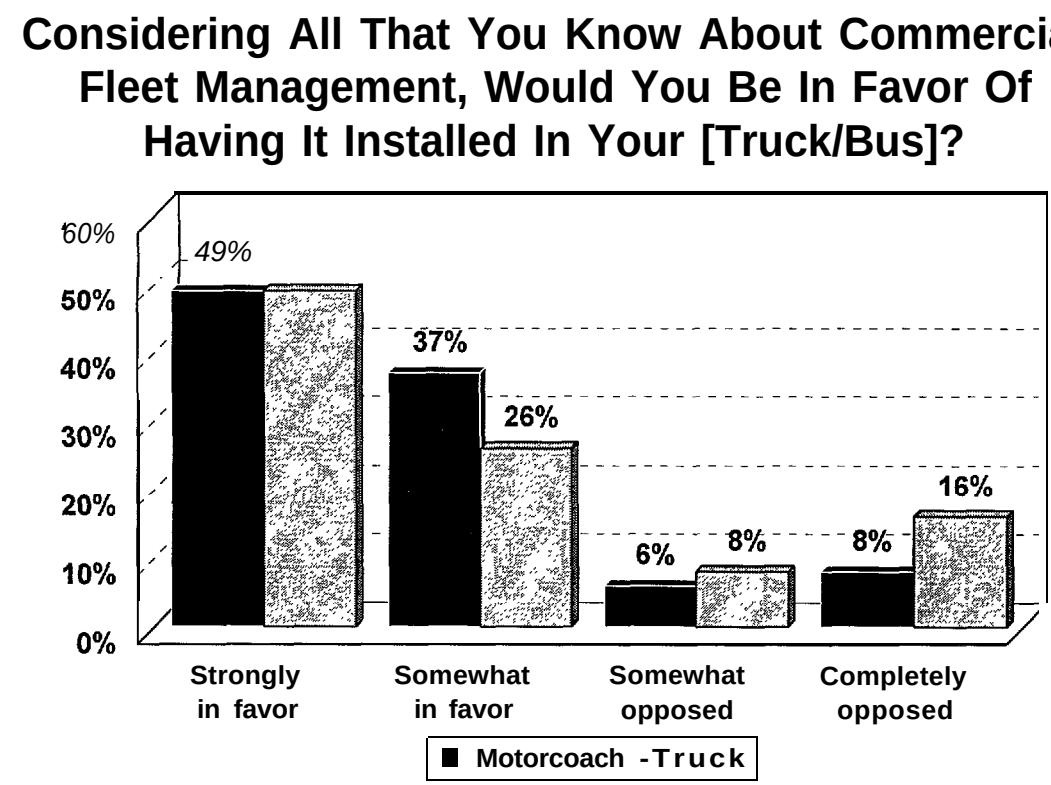
PERCEIVED WEAKNESSES OF FLEET MANAGEMENT

Motorcoach operators are less likely than truck drivers to perceive weaknesses in Commercial Fleet Management. However, 23% of respondents perceive Commercial Fleet Management as an invasion of their privacy by the company, and 21% see it as too reliant on computers. In addition, this technological service is rated relatively low for its ability to increase the independence of the drivers (30%).

ATTITUDES ABOUT COMMERCIAL FLEET MANAGEMENT

More than eight in ten (87%) motorcoach operators favored installation of Commercial Fleet Management in their vehicle compared to the 75% of truck drivers who favored installation. In addition, only 14% of motorcoach drivers were opposed to installation compared to the 24% of truck drivers who were opposed.

Chart 1.12 -- Motorcoach drivers only -- Favorability towards installation

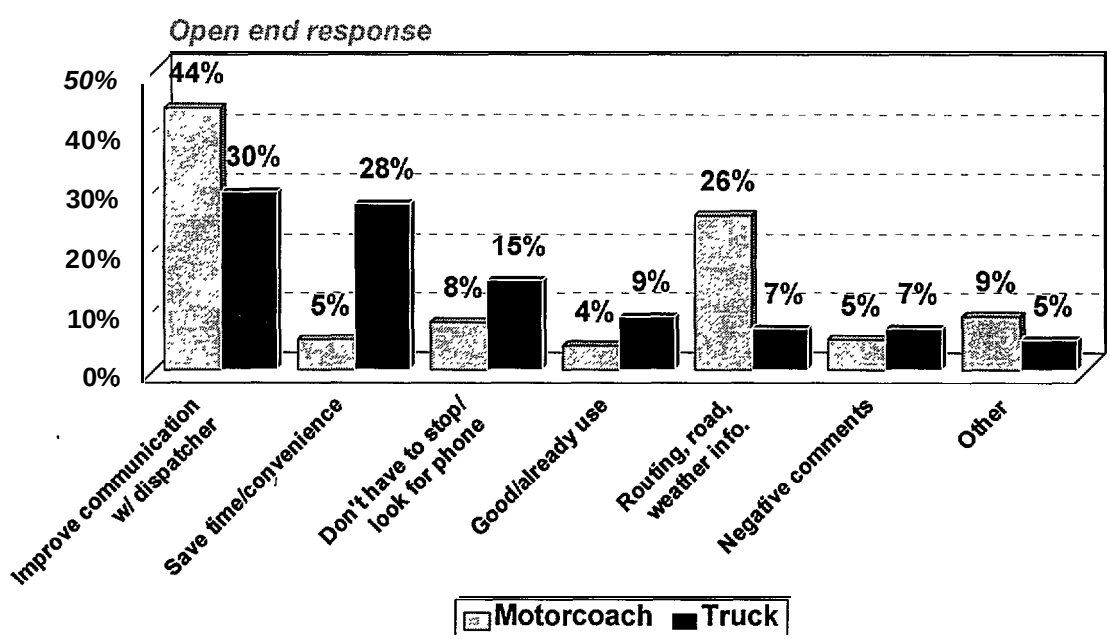


Statistically significant
Penn + Schoen Associates, Inc. T95

REASONS MOTORCOACH OPERATORS ARE OPPOSED TO CFM

The 86% of drivers who were in favor of having Commercial Fleet Management installed in their vehicles were asked to explain why. The largest percentage of respondents, 44%, said that they were in favor of the improved communications with their dispatcher. One-quarter (26%) of motorcoach drivers favored the routing, road, and weather information.

Chart I. 13 -- Open end -- Favorability towards installation of CFM



Statistically Significant
Penn + Schoen Associates. Inc. T96

II. COMMERCIAL VEHICLE ELECTRONIC CLEARANCE (CVEC)

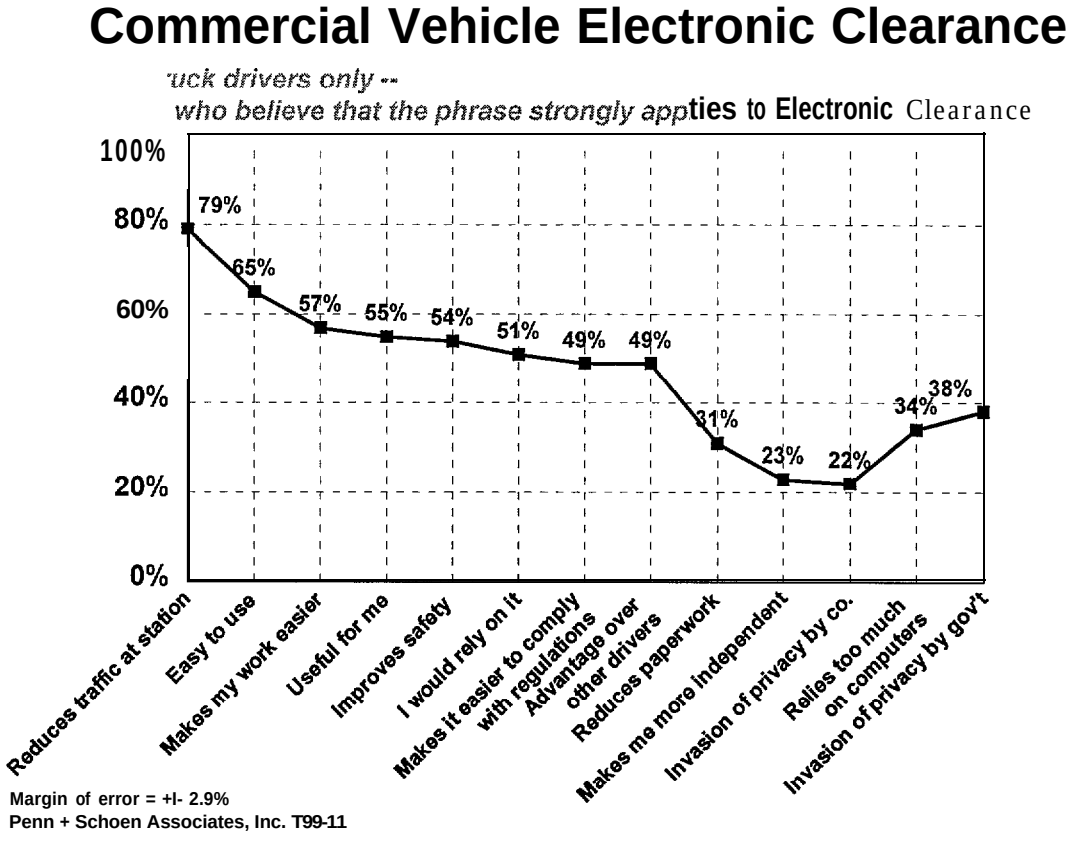
In terms of driver favorability to installation of the technologies in their vehicles, Commercial Vehicle Electronic Clearance falls right in the middle: drivers are not as opposed to CVEC as they are to other technologies, but neither are they as supportive as they are of some, such as Commercial Fleet Management. Both motorcoach and truck drivers recognized some benefits of Commercial Vehicle Electronic Clearance, especially its ability to reduce traffic at stations. However, there also seemed to be a fear among respondents that Commercial Vehicle Electronic Clearance would lead to an invasion of their privacy by the government and that it would rely too heavily on computers.

TRUCK DRIVERS' OPINIONS OF ELECTRONIC CLEARANCE

PERCEIVED BENEFITS OF ELECTRON/C CLEARANCE

On the attribute ratings, truck drivers were favorable towards Commercial Vehicle Electronic Clearance and especially realized its potential for reducing traffic at weigh stations. Approximately 4 out of 5 respondents (79%) "strongly agreed" that CVEC would reduce traffic. In addition, more than half the drivers were able to recognize the direct benefits electronic clearance could have for them and their daily work routine: 57% agreed that it would make their work easier, 55% said that it would be useful for them, and 54% said it would improve safety on the road.

Chart II.1 -- Attribute Ratings -- Truck drivers only

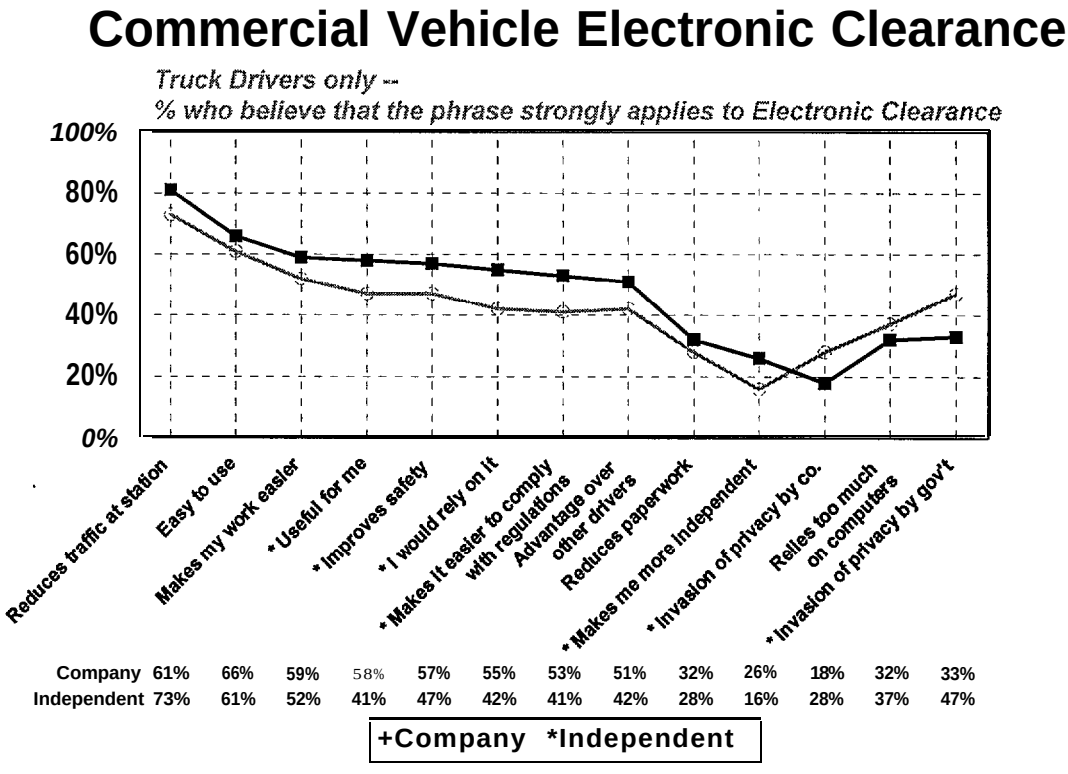


Certain segments of truck drivers were more likely than others to recognize the strengths of Commercial Vehicle Electronic Clearance system. Specifically, the following subgroups of respondents were more likely to recognize the strengths of CVEC:

- √ ***Company drivers***
- √ ***Haz Mat drivers***
- √ ***Drivers who are part of a large fleet***
- √ ***Drivers who are relatively new to the profession (<5 years)***

Commercial Vehicle Electronic Clearance was perceived more favorably by company drivers than independent owner operators across the range of attributes. Company drivers were more likely to think that Commercial Vehicle Electronic Clearance would improve their work life (useful, reliable, easy) and conditions on the road or at the station (traffic, safety).

Chart II. 2-- Attribute Ratings -- Company drivers vs. Independent Owner Operators



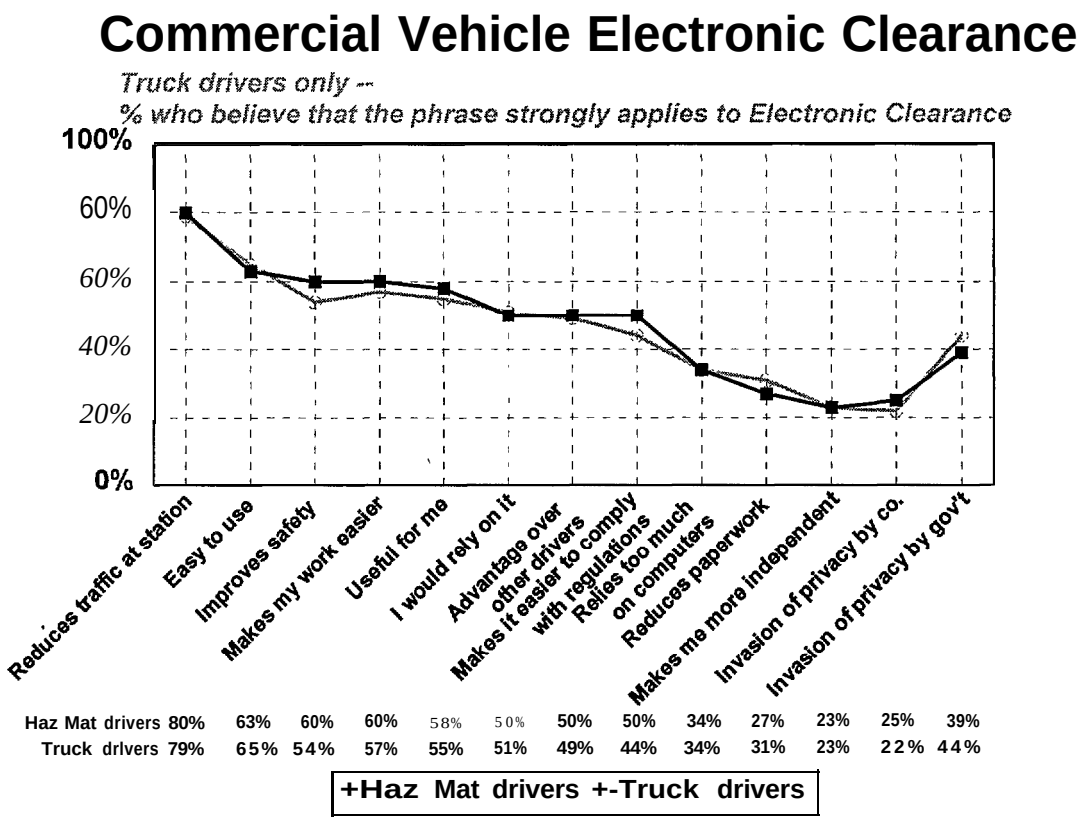
* = Statistically significant
Penn + Schoen Associates, Inc. T99-11

Drivers who haul hazardous material commodities perceived Commercial Vehicle Electronic Clearance somewhat differently than truck drivers overall.

Hazardous material drivers were somewhat more likely to recognize the following potential benefits of Commercial Vehicle Electronic Clearance:

- Improves safety on the road
- Makes it easier to comply with government regulations

Chart II. 3 --Attribute Ratings -- Haz Mat Drivers



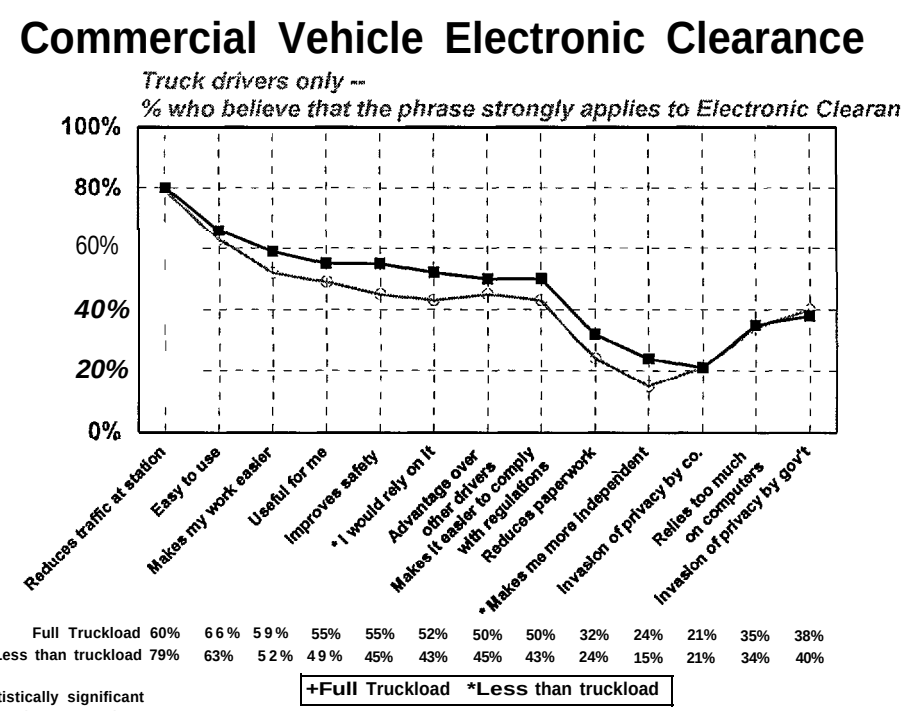
Penn + Schoen Associates, Inc. T99-11

Although full truckload and less than truckload drivers are both equally likely to think that Commercial Vehicle Electronic Clearance would reduce traffic at the station and would be easy to use, their attitudes and perceptions differed on the usefulness of the service.

As the following chart indicates, full truckload drivers are more likely than LTL drivers to think that the following attributes "strongly apply" to Commercial Vehicle Electronic Clearance.

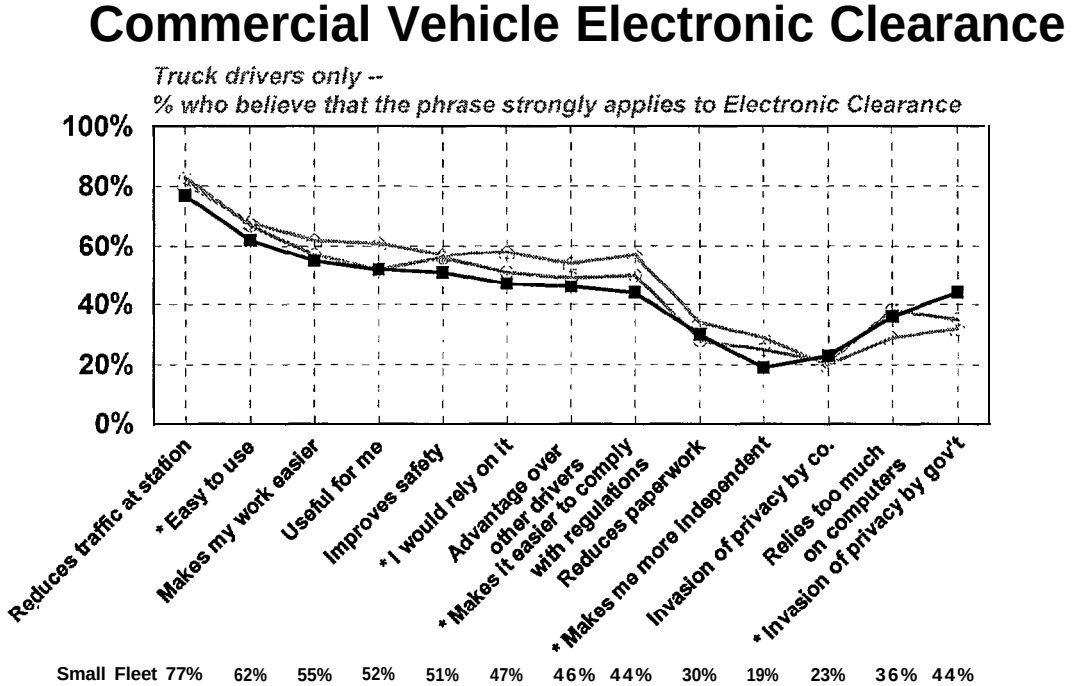
- *Improves safety (Full truckload 55% vs. LTL 45%)*
- *Makes drivers' work easier (59% vs. 52%)*
- *Useful for me (55% vs. 49%)*
- *Makes it easier to comply with government regulations (50% vs. 43%)*
- *Will work/Drivers can rely on it (52% vs. 43%)*
- Makes *drivers more independent (24% vs. 15%)*

Chart II. 4 -- Attribute Ratings -- Full truckload vs. Less than truckload



Across the range of attributes, large fleet drivers were better able to recognize the strengths of Commercial Vehicle Electronic Clearance than medium and small fleet drivers. Large fleet drivers were substantially more likely than small and medium fleet drivers to believe that CVEC is useful for the driver, will work and can be relied on, makes it easier to comply with existing regulations, and makes drivers more independent.

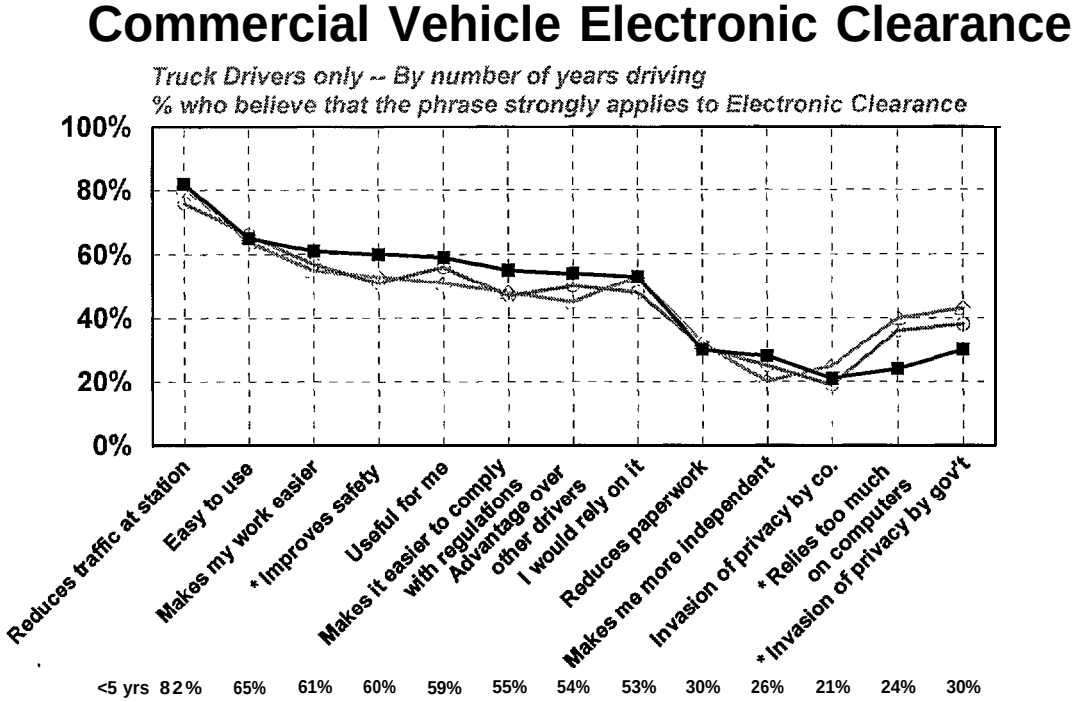
Chart II. 5 -- Attribute Ratings -- Small fleet vs. Medium fleet vs. Large fleet



The number of years the respondent has been a truck driver impacts driver acceptance of Commercial Vehicle Electronic Clearance. Drivers who have been driving for less than five years were somewhat more receptive to electronic clearance than those drivers who have been driving for longer periods of time. Drivers who have been driving for less than five years were more likely to think that the following attributes “strongly apply” to CVEC:

- *Useful for the driver*
- *Improves safety on the road*
- Makes *my work easier*
- *Gives them an advantage over other drivers*
- *Makes it easier to comply with existing regulations*

Chart II. 6 --Attribute Ratings -- By number of years driving



* =Statistically significant
Penn + Schoeri Associates, Inc. T99-11

PERCEIVED WEAKNESSES OF CVEC

Respondents perceived the following weaknesses for Commercial Vehicle Electronic Clearance system. As indicated in charts II.1 to II.6 above, respondents gave CVEC weak ratings in the following areas:

- ***Thirty eight percent (38%) of respondents thought that CVEC would be an invasion of privacy by the government***

- ***More than one in three respondents (34%)* thought *that Commercial Vehicle Electronic Clearance relied too heavily on computers***

- ***Twenty two percent of respondents thought that CVEC was an invasion of their privacy by companies***

- ***Less than one in four respondents (23%) thought that this technological service would increase driver's independence***

Different segments of truck drivers are more likely to recognize the relative weaknesses of Commercial Vehicle Electronic Clearance. The following segments of truck drivers are the most likely to perceive the relative weaknesses of Commercial Vehicle Electronic Clearance system:

Independent owner operators are much more likely than company drivers to associate certain weaknesses with Commercial Vehicle Electronic Clearance (See chart 11.2 above)

- *Independent owner operators (28%) are much more likely than company drivers (78%) to think Commercial Vehicle Electronic Clearance system is an invasion of privacy by the companies*

- *Almost half (47%) of independent owner operators think that Commercial Vehicle Electronic Clearance is an invasion of privacy by the government compared to on/y a third (33%) of company drivers*

- *Independents (37%) are somewhat more likely than company drivers to think that CVEC relies too heavily on computers*

Drivers who consider themselves part of a small fleet are less favorable towards* CVEC *than medium or large fleet drivers.

- *Small fleet drivers (44%) are more likely than medium (35%) or large (32%) fleet drivers to think that Commercial Vehicle Electronic Clearance is an invasion of their privacy by the government*

- *Thirty six percent of small fleet drivers are likely to think that CVEC relies too heavily on computers compared to 29% of large fleet drivers*

Drivers who have been driving for more than fifteen years are more likely than those who are relatively new to the profession to distrust Commercial Vehicle Electronic Clearance

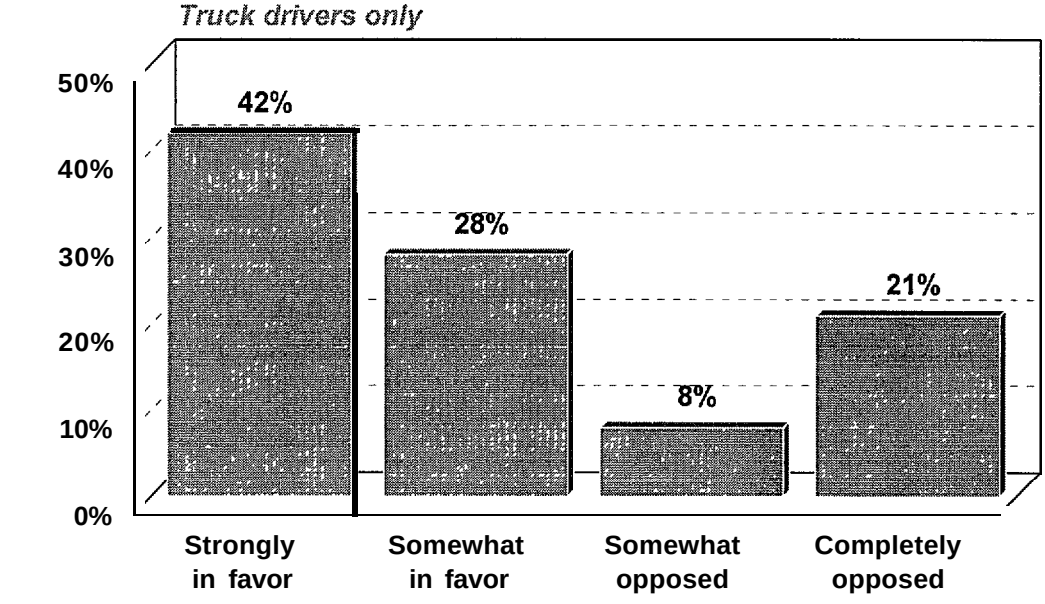
- ***Drivers*** *who have been driving for more than fifteen years (43%) are significantly more likely to strongly agree that CVEC is an invasion of privacy by the government than drivers who have been driving for less than five years*

- *Two-fifths (40%) of drivers who have been driving for more than fifteen years think that CVEC relies too much on computers compared to the 24% of drivers who have been for less than five years*

DEMAND FOR COMMERCIAL VEHICLE ELECTRONIC CLEARANCE

Seven out of every ten truck drivers are in favor of having Commercial Vehicle Electronic Clearance system installed in their trucks, and of that, 42% claim to be strongly in favor. However, more than one in five respondents (21%) are completely opposed to installation, and a total of 29% of truck drivers are completely or somewhat opposed.

Chart 11.7 --Truck drivers only -- Favorability towards installation



Margin of error = +I- 2.9%
Penn + Schoen Associates, Inc. T112

Company drivers are much more supportive of the installation of Commercial Vehicle Electronic Clearance than independent operators. As the following chart indicates, company drivers (48%) are much more likely than independents (29%) to strongly be in favor of having CVEC installed in their vehicle. Conversely, independents (29%) are more than one and a half times as likely as company drivers (17%) to completely oppose installation.

Table II.1 -- Favorability and Opposition To Installation of Electronic Clearance

Considering all that you know about Commercial Vehicle Electronic Clearance System, would you be in favor of having it installed in your truck?

Statistically significant

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	42	70	21	29
Company	48	74	17	24
Indeaendents	29	61	29	39

Drivers who haul hazardous materials (49%) are more likely to strongly favor installation of Commercial Vehicle Electronic Clearance than truck drivers overall (42%).

Table II. 2-- Favorability and Opposition To Installation of Electronic Clearance

Considering all that you know about Commercial Vehicle Electronic Clearance System, would you be in favor of having it installed in your truck?

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	42	70	21	29
Haz Mat Drivers	49	73	20	27

. Full truckload drivers (43%) are more likely to strongly be in favor of installation of CVEC than less than truckload drivers (37%). Both segments, however, are relatively equal in their opposition to the service.

Table II. 3-- Favorability and Opposition To Installation of CVEC

Considering all that you know about Commercial Vehicle Electronic Clearance, would you be in favor of having it installed in your truck?

Industry Segment	*Strongly In favor*	*Strongly in + Somewhat in favor*	*Completely Opposed*	*Somewhat + Completely Opposed*
Truck drivers overall	47	70	21	29
Full truckload	43	70	21	29
Less than truckload	37	68	23	31

Large fleet drivers (50%) -- who are better able to recognize the benefits of Commercial Vehicle Electronic Clearance -- are more likely to strongly be in favor of Commercial Vehicle Electronic Clearance than small (37%) or medium fleet (42%) drivers. Small fleet drivers, on the other hand, are more likely than large and medium fleet drivers to be completely opposed to the technology.

Table II. 4-- Favorability and Opposition To Installation of CVEC

Considering all that you know about Commercial Vehicle Electronic Clearance, would you be in favor of having it installed in your truck?

Statistically *significant*

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	42	70	21	29
Small fleet	37	66	25	34
Medium fleet	42	71	21	28
Large fleet	50	75	16	24

As the below table indicates, three fourths of drivers who have been driving for five years or less are in favor of having CVEC installed in their vehicles compared to the 65% of drivers who have been driving for more than 15 years. In comparison; drivers who have been driving for more than fifteen years are more likely to completely oppose (33%) installation than those drivers who have been driving for less than five (24%).

Table II. 5-- Favorability and Opposition To Installation of CVEC

Considering all that you know about Commercial Vehicle Electronic Clearance, would you be in favor of having it installed in your truck?

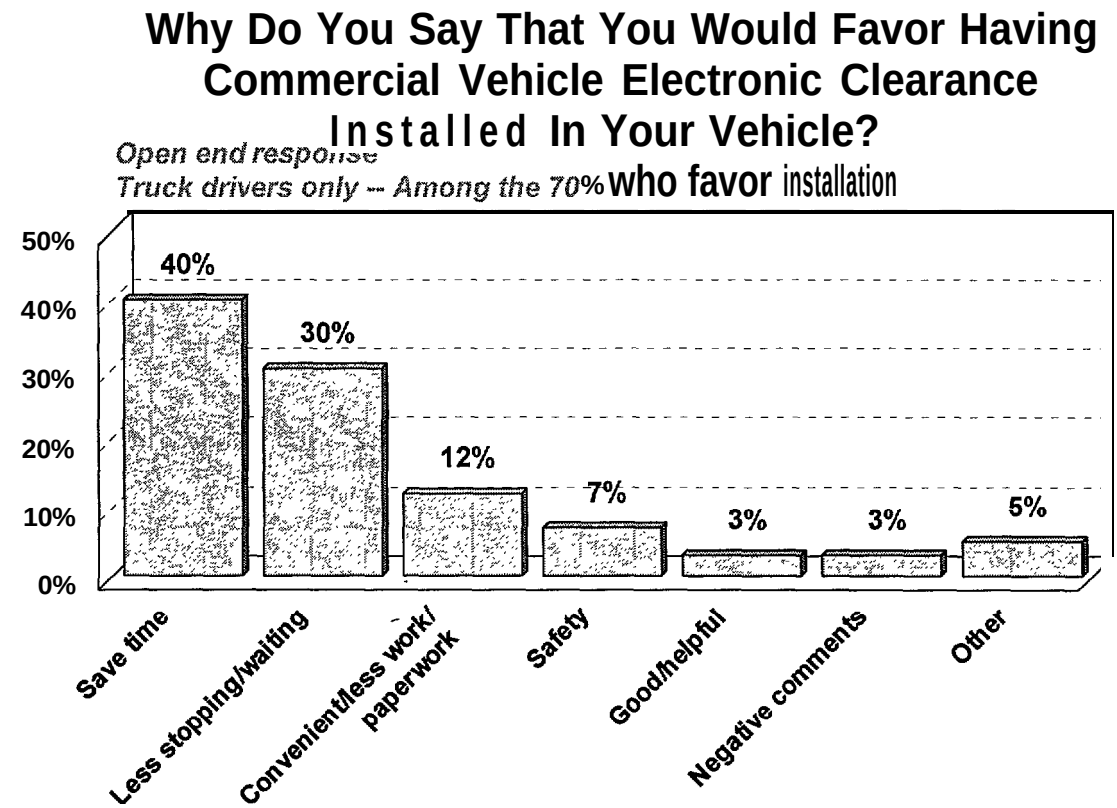
Statistically *significant*

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck	42	70	21	29
<5 years driving	46	75	18	24
5-15 years driving	43	71	18	29
15+ years driving	39	65	26	33

REASONS DRIVERS ARE IN FAVOR OF USING ELECTRONIC CLEARANCE

When drivers were asked in their own words why they favor CVEC, 40% responded that it would save them time and 30% favor the service because it would reduce stopping and waiting at the weigh stations.

Chart II. 8 -- Open end -- Favorability towards installation



Margin of error = +/- 3.5%
Penn + Schoen Associates, Inc. T113

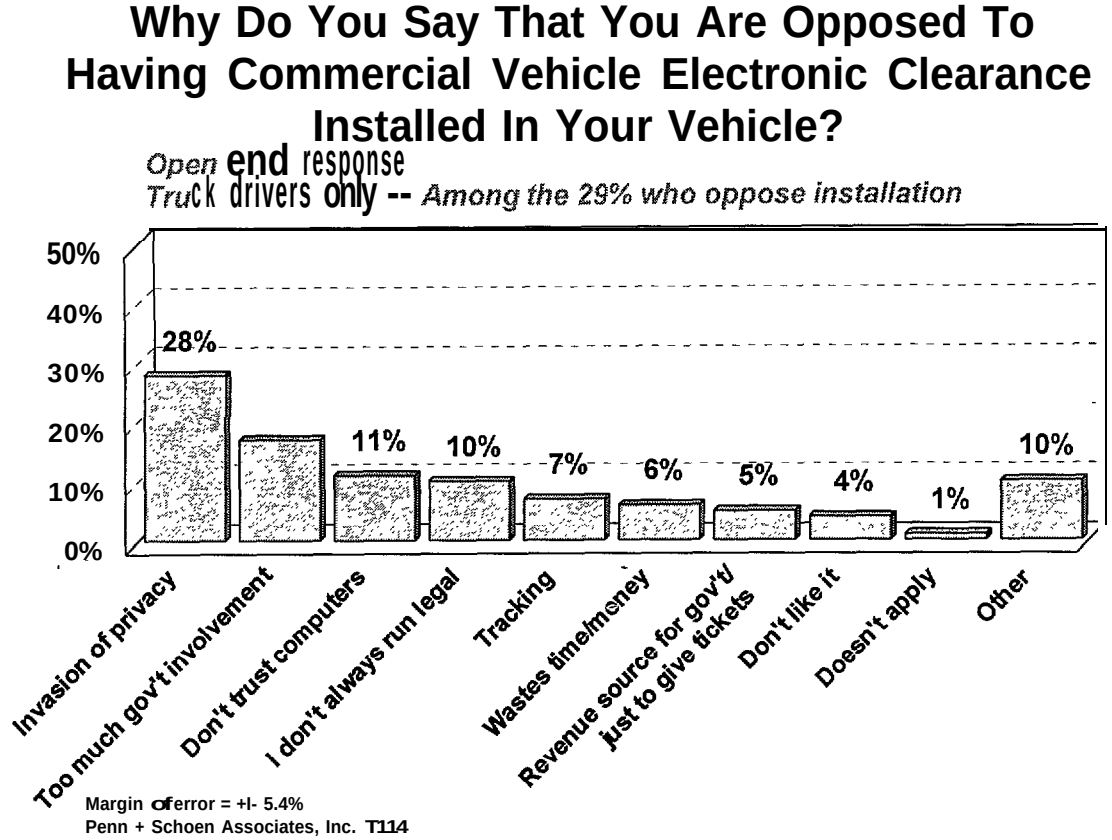
Below are some verbatim answers as to why these drivers are in favor of having Commercial Vehicle Electronic Clearance installed in their vehicle:

- *"Already seen it in use and like it very much"*
- *"Anything that will save me time and stopping will make me more independent and do the job more efficiently"*
- *"As far* as *scales are concerned, sometimes you are backed up to the* **highway,** *so it would save a lot of time."*
- *'Be a time saver for the driver and the company. It would be a big safety help since it wouldn't* **cause** *traffic jams on the highway. Anytime you stop* **and** *start a big truck it costs you time* **and** *money -- so this would help reduce costs. "*

REASONS DRIVERS ARE OPPOSED TO ELECTRONIC CLEARANCE

The 29% of drivers who are opposed to having Commercial Vehicle Electronic Clearance installed in their vehicles were asked why they felt that way. As the following chart indicates, these drivers were particularly concerned that CVEC would be an invasion of their privacy (28%) and would lead to too much government involvement (14%).

Chart il. 9 – Open end -- Opposition to installation



The following statements represent some of the verbatim responses of drivers when asked why they were opposed to having this system installed in their vehicles:

- *"I feel like it would be another way the government is taking away my responsibility to operate that motor vehicle. Just another way of a computer taking over my life. Independence to me* has *nothing to do with the government. "*

- *"Because they would know everything you* are *doing, and* you can't *always run legal. "*

- *'Certain times you don't* want *to be weighed,* and *with this they get you every time."*

- *"Don't feel that the government needs to be inside my vehicle -- it's like my home. "*

- *"Computers have* a *tendency to go hay wire* at *times -- should not rely totally on computers. "*

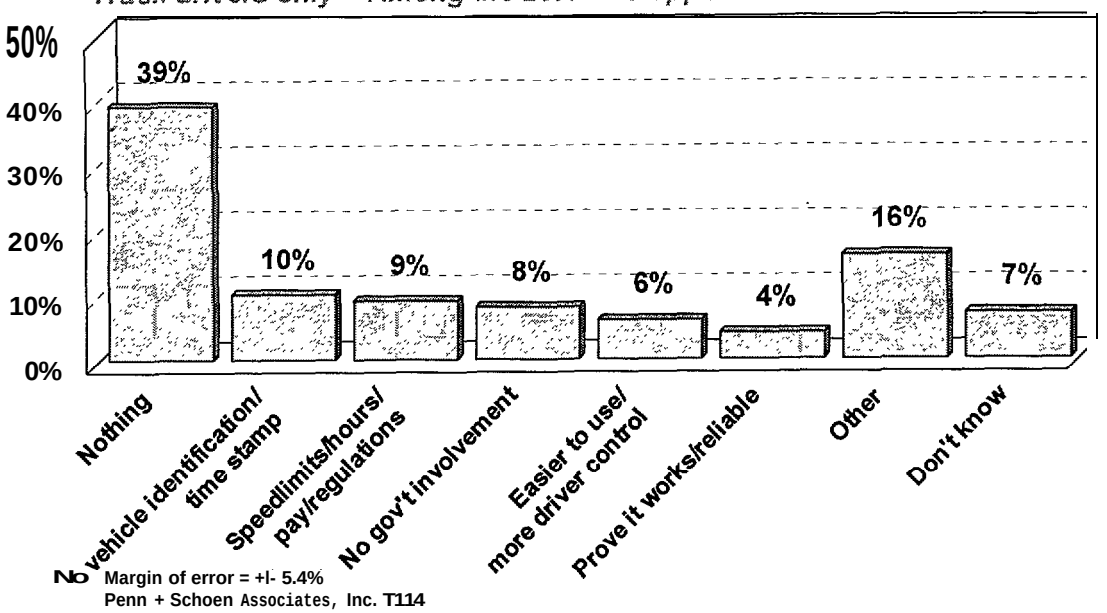
- *"I don't like to depend on anything that's computerized. You can see it at fuel desks -- you have to wait up to an hour sometimes* because *the computer went down. "*

These drivers, who are opposed to installation of Commercial Vehicle Electronic Clearance were then asked if anything about the system could be changed to make them more favorable towards it. Thirty eight percent of the respondents said that nothing could be changed to increase favorability. Other respondents wanted to do away with vehicle identification (9%) and government involvement (7%). Additionally, some respondents wanted to feel confident that the system would work (5%) and would be easy to use (5%).

Chart II. IO -- Open end **-- Opposition to installation**

What About Commercial Vehicle Electronic Clearance Could Be Changed To Make You More Favorable Towards This Technology?

Open end response
Truck drivers only -- Among the 29% who oppose installation



Margin of error = +l- 5.4%
Penn + Schoen Associates, Inc. T114

Respondents who opposed CVEC gave the following verbatim responses to describe what about the technology could be changed to make them more favorable towards it:

- √ *"If they would not use it for giving tickets"*
- √ *"Don't register the time we cross scales"*
- √ *"Just to keep it voluntary"*
- √ *"Take the government out of it"*
- √ **"Remove** *the vehicle identification* **part so that we** *couldn't be tracked"*
- √ *"If it* **was** *used properly and not against you"*
- √ *"Make all* **scales** *alike so that you know what to do"*

DRIVERS ENGAGED IN OPERATIONAL *TESTS*

The data suggests that respondents who have been involved in either the I-75 or HELP/Crescent operational tests were in general more favorable to ***CVO services in several important areas.***

Compared to the total sample, these respondents were more favorable to the service across the range of attributes, in particular on the following key measures:

- *useful for me (73% for operational test participants versus 55% overall)*
- *will work// would rely on it (68% versus 51%)*

These respondents were also less likely to associate the following negative attributes with this service:

- *invasion of my privacy by government (19% for operational test* **participants versus 38% overall)**
- *relies too much on computers/loss of human judgment (19% versus 34%)*

Thus respondents who had participated in an operational test of this technology were more likely to find benefits in the technology, and less likely to perceive weaknesses. It is not surprising then that ***these respondents were more likely than the overall population to favor having this service installed in their vehicle.***

ATTITUDES AND OPINIONS OF MOTORCOACH OPERATORS

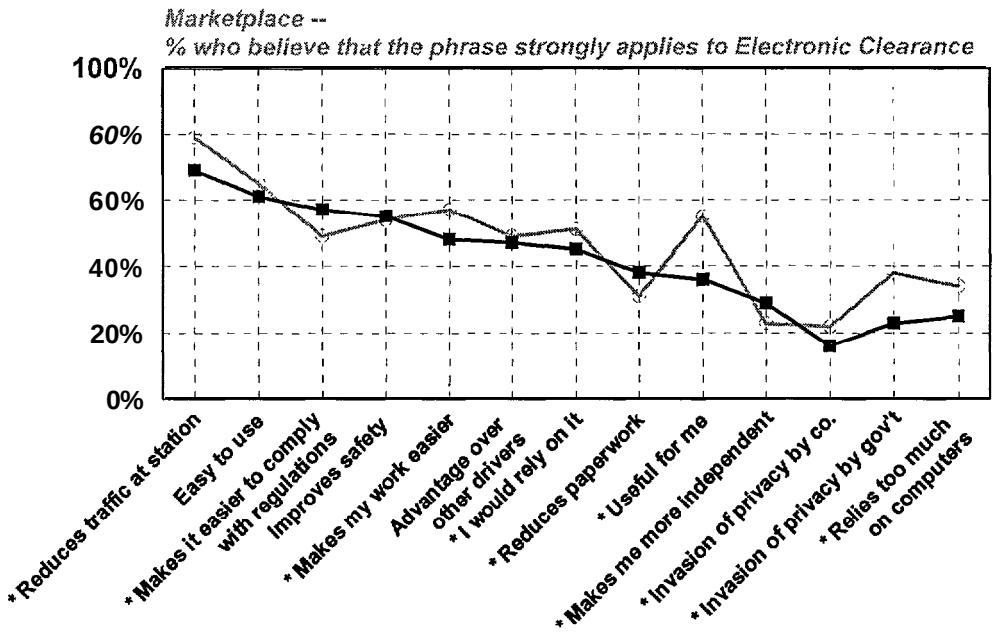
PERCEIVED BENEFITS OF ELECTRONIC CLEARANCE

Motorcoach operators viewed Commercial Vehicle Electronic Clearance differently than truck drivers. Motorcoach operators were less inclined than truck drivers to say that Commercial Fleet Management helps reduce traffic at the station or that it would make their work easier. In addition, only a relatively small number of respondents who thought that electronic clearance would be useful for them: more than half of truck drivers (55%) felt that “useful for me” strongly applied to electronic clearance as opposed to the 36% of motor coach carriers who felt that this attribute strongly applied.

On the other hand, motorcoach operators (57%) were more likely than truck drivers (49%) to believe that Commercial Vehicle Electronic Clearance would make it easier to comply with existing regulations. Motorcoach operators (38%) were also more likely than truck drivers (31%) to believe that CVEC would help reduce paperwork.

Chart II. 11 -- Attribute Ratings -- Motorcoach drivers vs. Truck drivers

Commercial Vehicle Electronic Clearance



Motorcoach	69%	61%	57%	55%	48%	47%	45%	38%	36%	29%	16%	23%	25%
Truck	79%	65%	49%	54%	57%	49%	51%	31%	55%	23%	22%	38%	34%

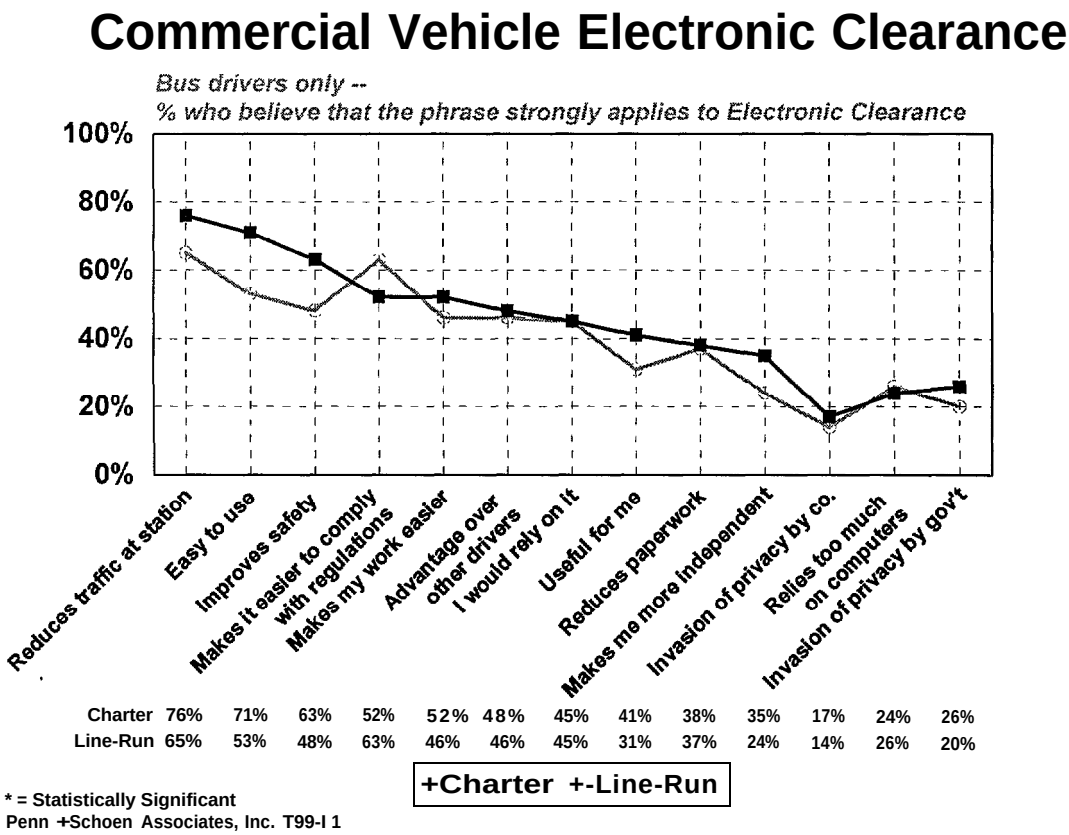
+Motorcoach +-Truck

* = Statistically significant
Penn + Schoen Associates, Inc. T99-11

As the following chart indicates, charter and line-run motorcoach operators differed in their perceptions of Commercial Vehicle Electronic Clearance. Charter drivers are most likely to rate electronic clearance highly on its ability to reduce traffic at the station (76%) its ease of use (71%), and its ability to improve safety (63%).

Line-run drivers also are most strongly inclined to believe that Commercial Vehicle Electronic Clearance will reduce traffic at the station (65%). However, unlike charter drivers, they are much more likely to say that this service makes it easier to comply with existing regulations (63%).

Chart II. 12 --Attribute Ratings --Charter vs. Line Run



* = Statistically Significant
Penn +Schoen Associates, Inc. T99-I 1

PERCEIVED WEAKNESSES OF ELECTRONIC CLEARANCE

Approximately one-quarter of motorcoach drivers thought that Commercial Vehicle Electronic Clearance had inherent weaknesses: 23% thought that this service was an invasion of privacy by the government, 25% thought that it relied too heavily on computers, and 16% thought it was an invasion of privacy by the companies.

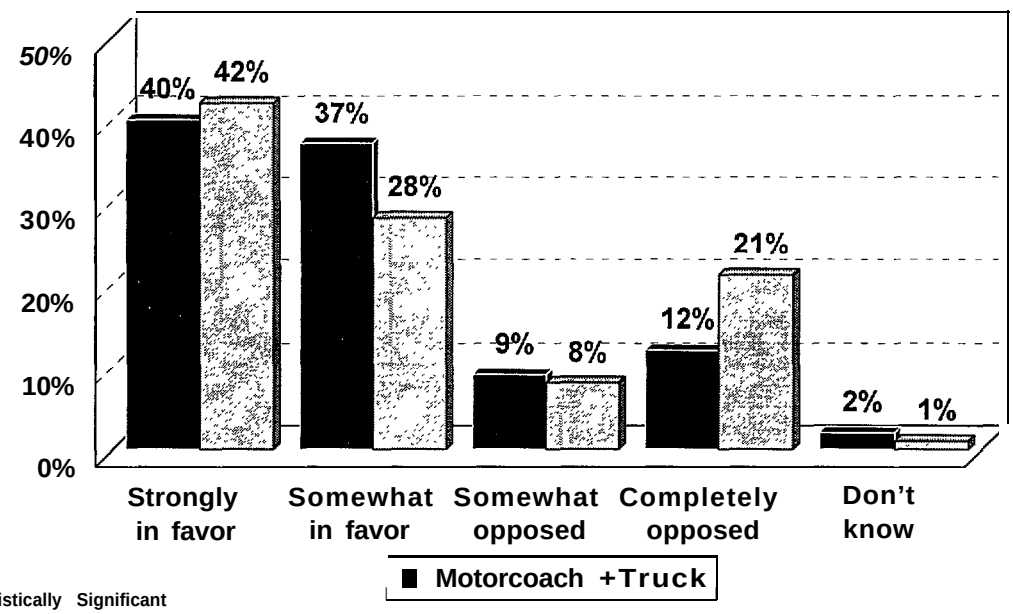
Charter drivers are somewhat more likely than line-run operators to think that Commercial Vehicle Electronic Clearance is an invasion of privacy by the government: 26% of charter drivers think that this service is an invasion of privacy by the government compared to 20% of line-run drivers. In addition, 17% of charter drivers and 14% of line-run operators thought that Commercial Vehicle Electronic Clearance was an invasion of privacy by the company. Twenty-four percent (24%) of charter drivers and 26% of line-run drivers thought that CVEC relies too heavily on computers.

DEMAND FOR COMMERCIAL VEHICLE ELECTRONIC CLEARANCE

Thus, as the following chart indicates, although only one in three motorcoach drivers “strongly agreed” that Commercial Vehicle Electronic Clearance was useful for them, more than three in four respondents favored installation of the service in their vehicle. In fact, motorcoach drivers were more favorable towards installation than were truck drivers. As the following chart indicates, 70% of truck drivers would be in favor of having electronic clearance installed in their vehicles while 29% would be opposed to the idea. Comparatively, among motorcoach drivers, 77% would be in favor of installation while only 21% would be opposed.

Chart It.13 Motorcoach drivers only -- Favorability towards installation

Considering All That You Know About The Electronic Clearance System, Would You Be In Favor Of Having It Installed In Your [Bus/Truck]?



Statistically Significant
Penn + Schoen Associates, Inc. T112

As the following table indicates, line-run and charter motor coach drivers are about equally favorable towards the installation of Commercial Vehicle Electronic Clearance system: 79% of charter drivers favor installation compared to 77% of line-run operators.

Table 11.6~- Favorability and Opposition To Installation of CVEC

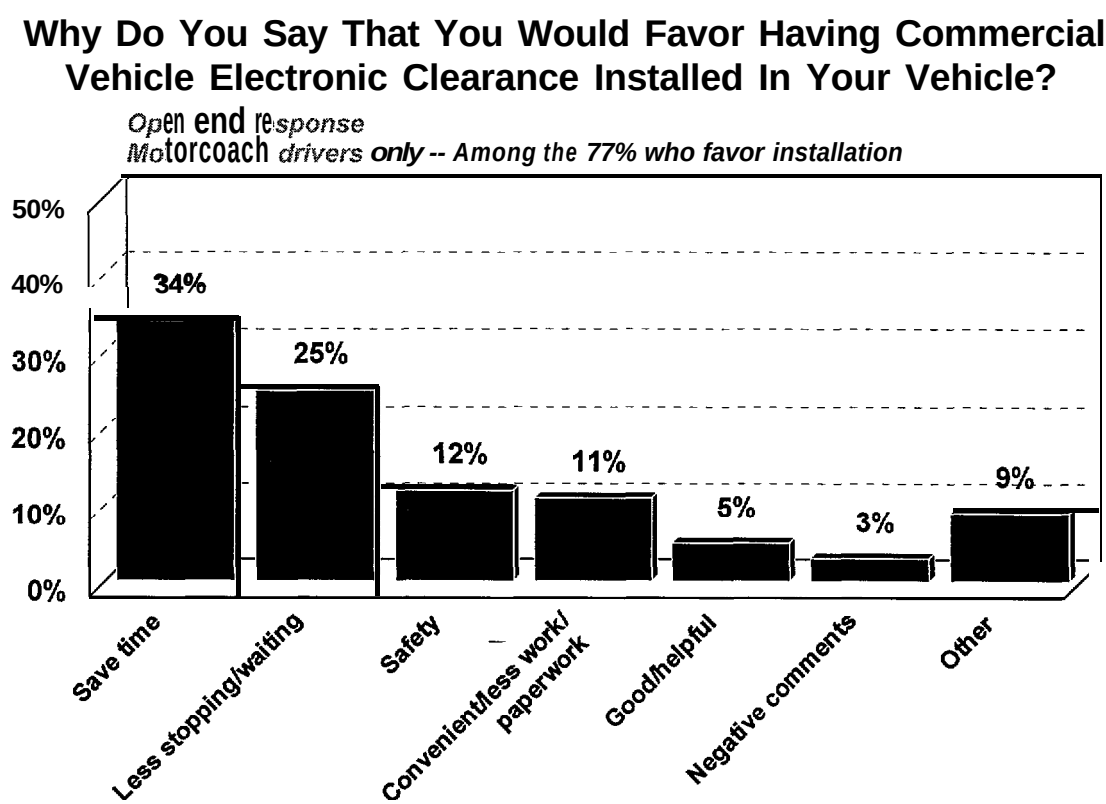
Considering all that you know about Commercial Vehicle Electronic Clearance, would you be in favor of having it installed in your truck?

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Motorcoach	40	77	12	21
Charter Motorcoach	39	79	11	21
Line Run Motorcoach	41	77	11	20

REASONS MOTORCOACH OPERATORS ARE IN FAVOR OF USING CVEC

When motorcoach drivers were questioned as to why they are in favor of having Commercial Vehicle Electronic Clearance installed in their vehicles, 34% said because the service would save them time and 25% said because it would mean less stopping and waiting.

Chart II. 14 – Favorability towards installation

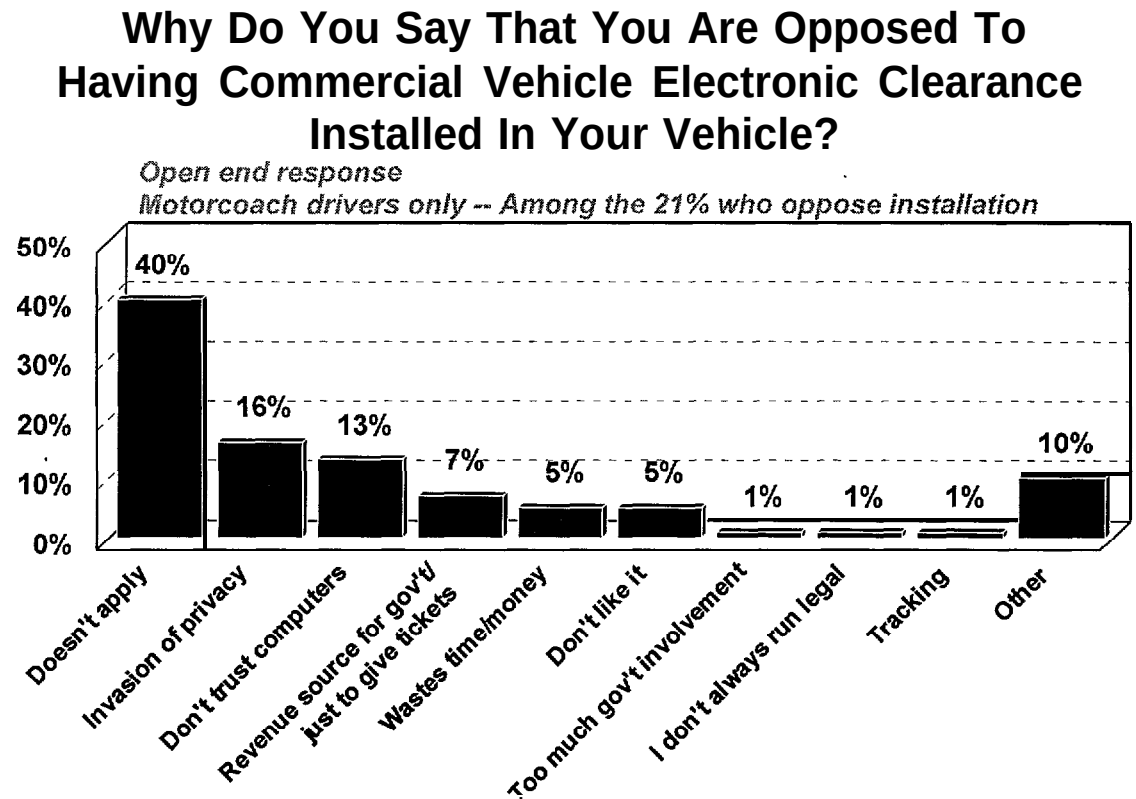


Margin of error = +I- 5.5%
Penn + Schoen Associates, Inc. T113

REASONS MOTORCOACH OPERATORS OPPOSE CVEC

Twenty one percent of motorcoach respondents oppose installation of Commercial Vehicle Electronic Clearance in their vehicles. As the following chart indicates, four-tenths of motorcoach drivers (40%) were opposed to Commercial Vehicle Electronic Clearance because they felt that it didn't apply to them, 16% felt that it would be an invasion of their privacy, and 13% don't trust computers.

Chart II. 15 -- Open end -- Opposition to installation



Margin of error = +I- 10.5%
Penn + Schoen Associates, Inc.T114

III. COMMERCIAL VEHICLE ADMINISTRATIVE PROCESSES *(CVAP)*

Compared to the other five CVO services tested, Commercial Vehicle Administrative Processes service was also* in the *middle in terms of acceptance by motorcoach drivers. Among truck drivers, however, appeal and attitudes were relatively low: among the six services tested, CVAP was ranked relatively low across the attributes, and it was the second least favorite technology in terms of drivers' favorability towards using it.

Overall, commercial vehicle drivers were able to recognize the benefit Commercial Vehicle Administrative Processes could have on alleviating the burden of paperwork. Motorcoach and truck drivers' attitudes and perceptions towards Commercial Vehicle Administrative Processes were somewhat disparate. Motorcoach drivers were much stronger proponents of this technological service than truck drivers.

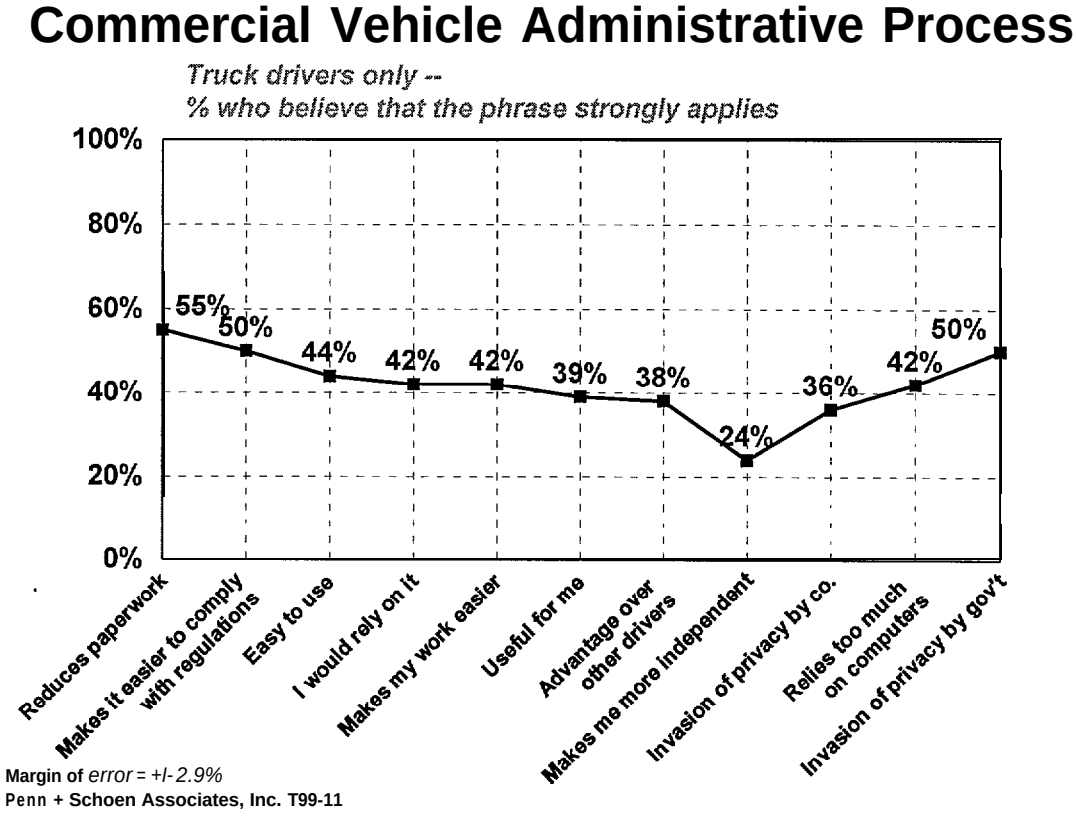
TRUCK DRIVERS' OPINIONS OF CVAP

PERCEIVED BENEFITS OF CVAP

Across the range *of positive attributes, truck drivers were not particularly favorable towards Commercial Vehicle Administrative Processes.* However, some benefits of Commercial Vehicle Administrative Processes were recognized.

Fifty five percent (55%) of truck drivers strongly agreed that Commercial Vehicle Administrative Processes would reduce paperwork. In addition, one in two respondents (50%) believed that Commercial Vehicle Administrative Processes would make it easier to comply with existing regulations.

Chart III. 1 -- Attribute Ratings -- Truck Drivers Only



Compared to the other CVO services tested, ***variation between subgroups seems to be less defined on this particular service.*** Opinions and attitudes towards this technological service seem to be more universally distributed among truck drivers.

As the following chart indicates, company drivers and independent owner operators rate Commercial Vehicle Administrative Processes virtually the same across the range of positive attributes, including:

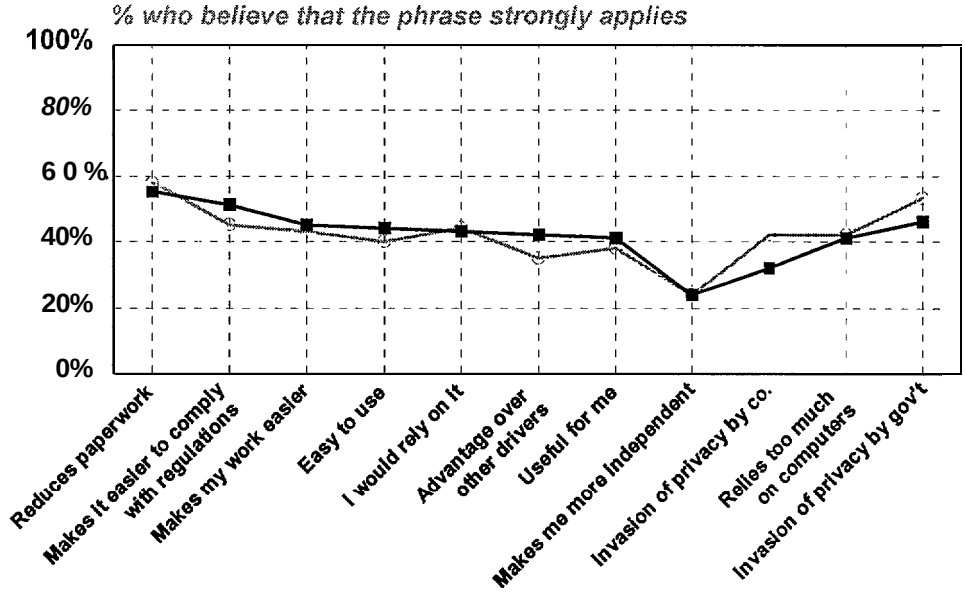
- *Useful for me*
- *Makes my work easier*
- *Reduces paperwork*
- *Makes me more independent*
- Easy *to use*
- *I would rely on it*

Company drivers, however, are somewhat more likely than independents to think that CVAP will give them an advantage over other drivers and will make it easier to comply with existing regulations.

Chart III. 2 Attribute Ratings -- Company vs. Independent

Commercial Vehicle Administrative Process

Truck Drivers Only --
% who believe that the phrase strongly applies



Company	55%	51%	45%	44%	43%	42%	41%	24%	32%	41%	46%
Independent	58%	45%	43%	40%	44%	35%	38%	24%	42%	42%	53%

+Company *Independent

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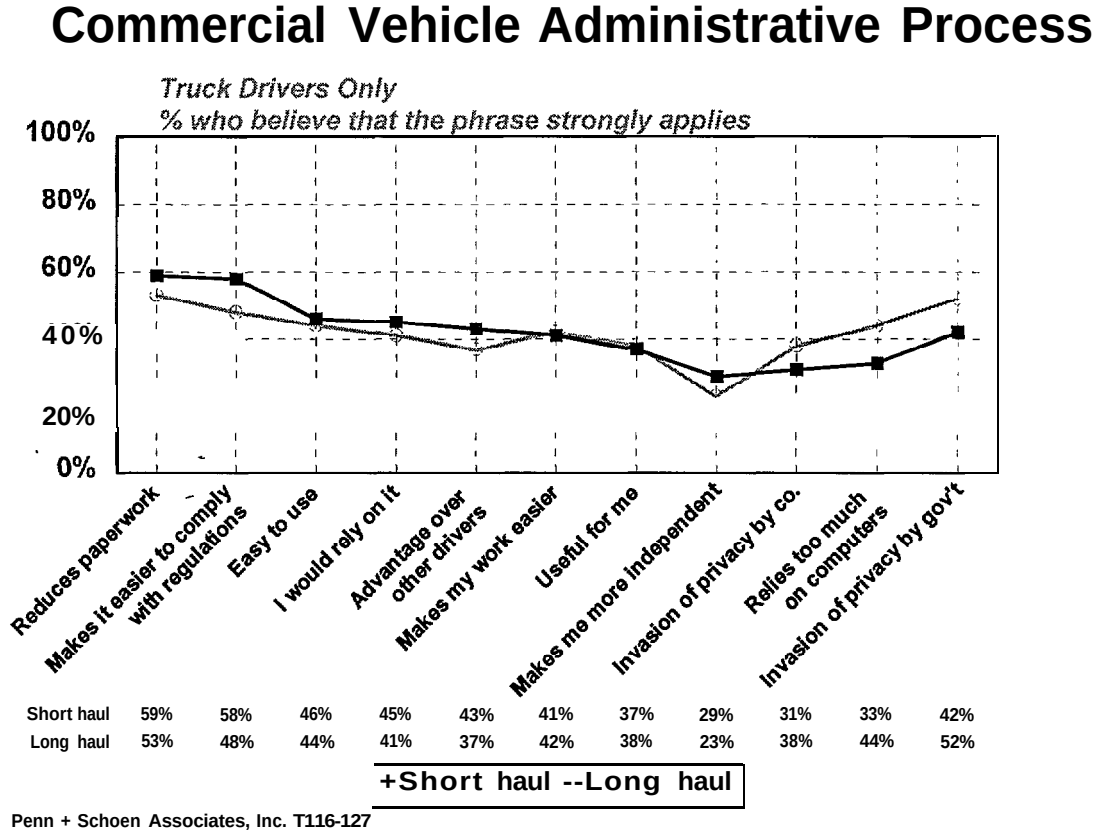
Short haul and long haul drivers had somewhat differing opinions on the benefits of Commercial Vehicle Administrative Processes. Across the range of attributes, short haul drivers are somewhat more favorable towards Commercial Vehicle Administrative Processes than long haul drivers. Short haul drivers are more likely than long haul drivers to think that this technological service makes it easier to comply with existing regulations, reduces paperwork, gives them a competitive advantage, and makes them more independent.

Chart III. 3-- Attribute Ratings -- Short haul vs. Long haul



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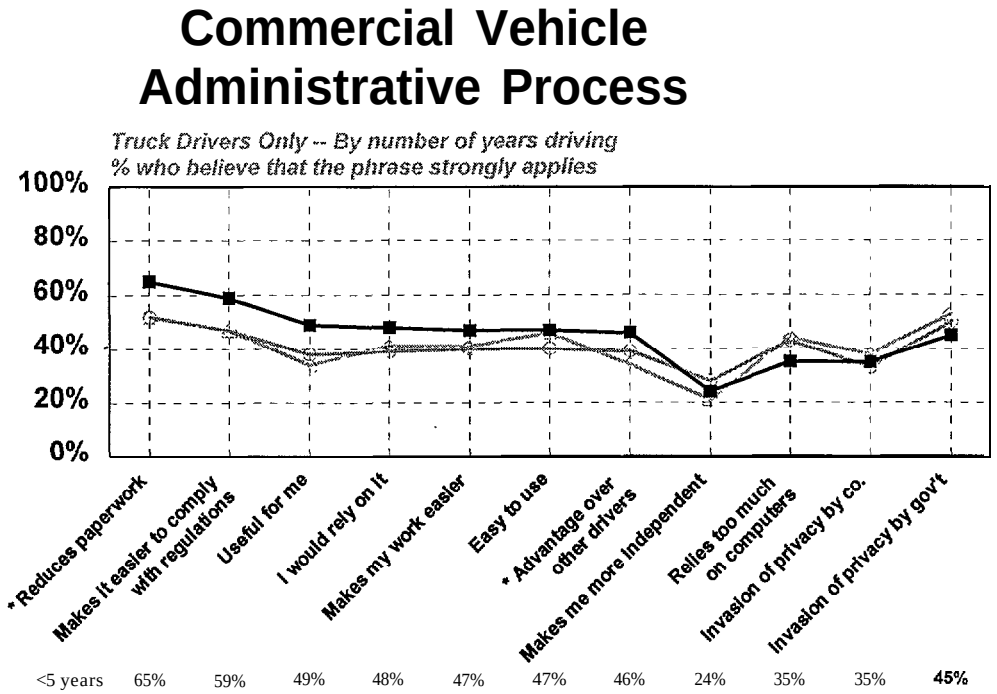
Truck drivers' perceptions of Commercial Vehicle Administrative Processes varied by the number of years *the respondent has been* a *truck driver.* Those drivers who have been driving for a shorter amount of time (less than 5 years) seem more receptive to this technological service than drivers who have been driving for longer periods of time.

Iri fact, drivers relatively new to the profession (49%) are almost one and a half times as likely as older drivers (34%) to strongly agree that Commercial Vehicle Administrative Processes is useful for them. In addition, drivers who have been driving for less than five years are more likely to strongly agree that this service makes their work easier, reduces paperwork, gives them an advantage over other drivers, and makes it easier to comply with existing regulations.

Chart III. 4 -- Attribute Ratings --By number of years driving



	* Reduces paperwork	Makes it easier to comply with regulations	Useful for me	I would rely on it	Makes my work easier	Easy to use	* Advantage over other drivers	Makes me more independent	Relies too much on computers	Invasion of privacy by co.	Invasion of privacy by gov't
<5 years	65%	59%	49%	48%	47%	47%	46%	24%	35%	35%	**45%**
5-15 years	52%	47%	38%	39%	40%	40%	39%	28%	43%	33%	**50%**
15+ years	52%	47%	34%	41%	41%	46%	34%	21%	44%	38%	**53%**

+<5 years --5-15 years –– 15+ years

*** = Statistically Significant**
Penn + Schoen Associates, Inc. T116-125

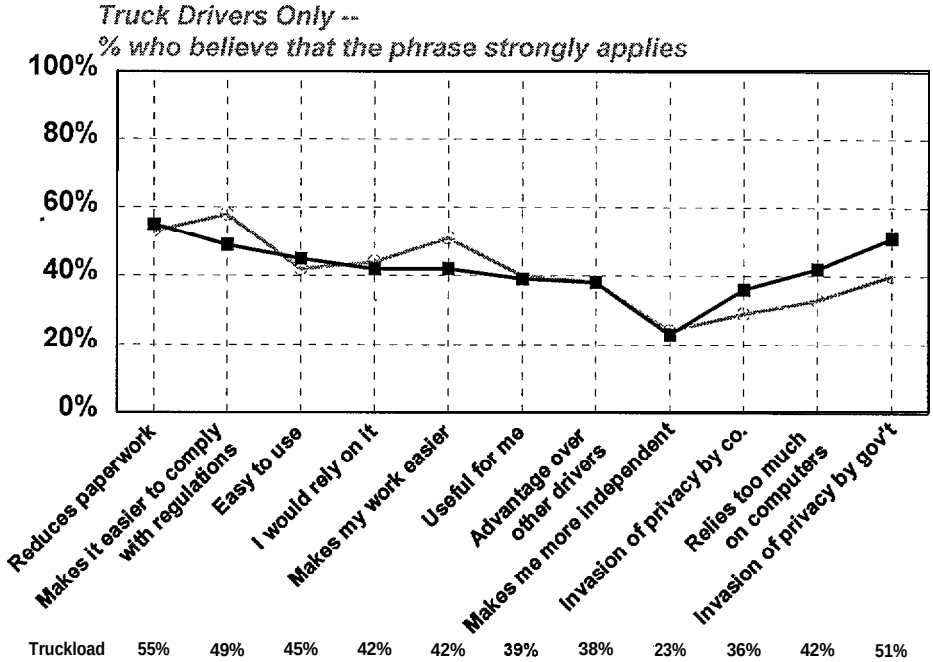
Full truckload and LTL drivers are both equally able to recognize that Commercial Vehicle Administrative Processes reduces paperwork, is easy to use, and is reliable. Less than truckload drivers, however, are more likely than truckload drivers to recognize the benefits that CVAP could have for them, including:

- *58% of LTL drivers strongly agree that CVAP* **makes** *it* **easier to** *comply* with existing **regulations compared to 49%** *of* **truckload users**

- *57% of LTL drivers strongly agree that CVAP will make their work easier compared to 42% of full truckload drivers*

Chart III. 5 -- Attribute Ratings -- Full truckload vs. Less than truckload

Commercial Vehicle Administrative Process



Truckload	55%	49%	45%	42%	42%	39%	38%	23%	36%	42%	51%
Less than truckload	53%	58%	42%	44%	51%	40%	38%	24%	29%	33%	40%

+-Truckload --Less than truckload

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PERCEIVED WEAKNESS OF CVAP

Overall, many respondents were able to perceive weaknesses with Commercial Vehicle Administrative Processes service. Chart III.1 above illustrates the following weaknesses of Commercial Vehicle Administrative Processes:

- *A potential obstacle to truck driver acceptance of Commercial Vehicle Administrative Processes is a fear that this technological service is an invasion of privacy by government.* ***In fact, one out of every two (50%) respondents "strongly agreed" that this service would be an invasion of their privacy by the government***

- *Forty-two percent of respondents thought that Commercial Vehicle Administrative Processes relied too heavily on computers and that there was a loss of human judgment*

- *More than one in three respondents (36%) thought that CVAP would potentially lead to* **an** *invasion of privacy by companies*

- *Although slightly more than half of the truck drivers did recognize that commercial administrative processes would reduce their amount of paperwork and make it easier to* **deal** *with existing regulations, less than half of the respondents felt that the remaining positive attributes "strongly applied" to Commercial Vehicle Administrative Processes. More than 60% of drivers did NOT strongly* **agree** *that CVAP would be useful for them.*

The following segments of truck drivers are somewhat more likely to recognize the potential weaknesses of Commercial Vehicle Administrative Processes:

Independent owner operators are much more likely than company drivers to think that Commercial Vehicle Administrative Processes infringes on theirprivacy. (See chart III.2 above)

- *More than half (53%) of independents think CVAP is an invasion of privacy by the government -- 46% of company drivers agree*

- **Forty-fwo** *percent* **of independents think thaf CVAP is an invasion** *of the drivers' privacy by the company, while only 36% of independents think so*

Long haul drivers are less favorable towards Commercial Vehicle Administrative Processes than short haul drivers.

- *Forty-four percent of long haul drivers think that Commercial Vehicle Administrative Processes relies too much on computers compared to the 33% of short haul drivers who think so*

- *More than half of long haul drivers (52%) think that CVAP would be an invasion of privacy by the government. 42% of short haul drivers think this*

- *Long haul drivers (38%) are more like/y fhan short haul drivers to think that CVAP is* **an** *invasion of privacy by the government (31%)*

- *Long haul drivers are even less likely fhan short haul drivers fo think that CVAP increases a driver's independence*

Respondents who have been driving more than fifteen years responded more negatively towards Commercial Vehicle Administrative Processes than **those who** ***have been driving for shorter periods of time.***

- *Drivers who have been driving for more than fifteen years are more likely than those drivers who have been driving for less than five years to think that CVAP is an invasion of privacy by the government (53% and 45% respecfiveiy)*

- *15+* **year** *drivers are more likely (44%) than <5 year drivers (35%) to think that CVAP relies too much on computers*

Truckload drivers are more likely than less than truckload drivers to have negative perceptions of CVAP.

- *More than half (51%) of full truckload drivers think that invasion of privacy by government strongly applies to CVAP. Comparatively 40% of the iess* **than** *truckload drivers think this attribute applies.*

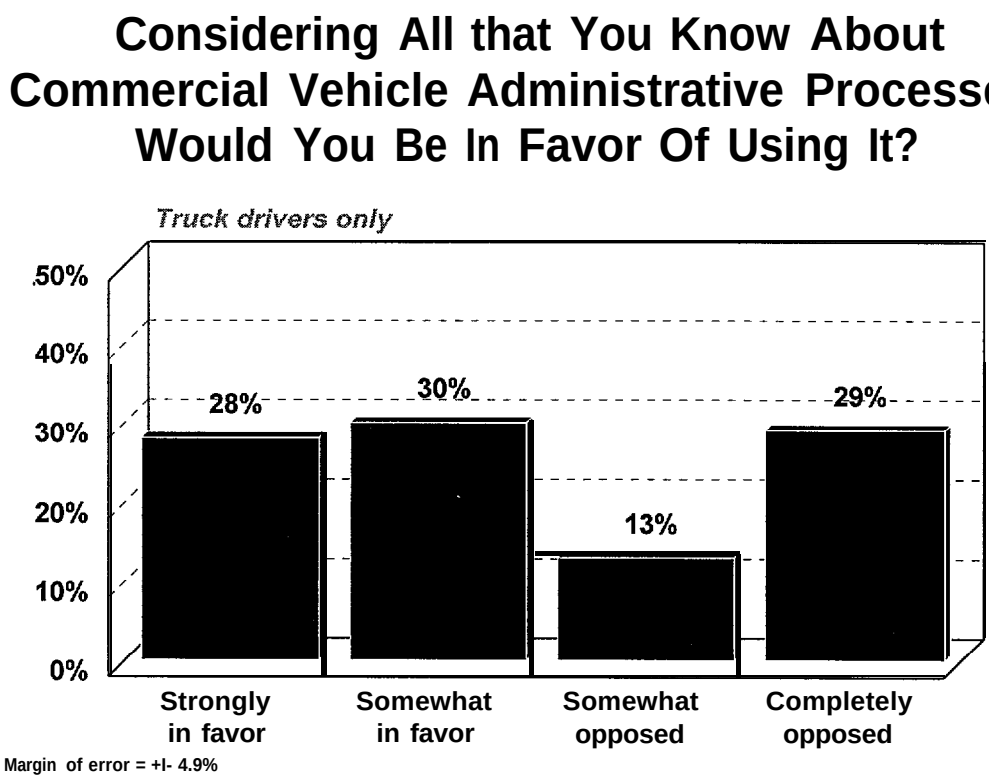
- *Truckload drivers are more likely to think that CVAP is too reliant on computers (42%) than less than truckload drivers (43%)*

- *More than one third of respondents (36%) think that this technological service would be an invasion of a driver's privacy by the company. Only 29% of LTL drivers* agree

ATTITUDES TOWARDS CVAP

Drivers' mixed opinions of Commercial Vehicle Administrative Processes are reflected in the number of drivers who would actually use the service. As the following chart indicates, 58% of drivers would favor using Commercial Vehicle Administrative Processes while 43% would be opposed to it.

Chart III. 6 – Favorability --Truck Drivers Onlv



Company drivers have a somewhat greater desire for Commercial Vehicle Administrative Processes than independents. As the following table indicates, 30% of company drivers are strongly in favor of using CVAP compared to the 25% of independents who are strongly in favor.

Table III. 1-- Favorability and Opposition To Use of CVAP

Considering all that you know about Commercial Vehicle Administrative Processes, would you be in favor of using it?

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	28	58	29	42
Company	30	60	26	40
Independent	25	55	35	45

Short haul drivers' ability to better recognize the benefits of CVAP than long haul drivers is reflected in that short haul drivers are slightly more likely than long haul drivers to strongly favor usage. However, overall desirability of the service is about equal between the two segments.

Table III. 2-- Favorability and Opposition To Use of CVAP

Considering all that you know about Commercial Vehicle Administrative Processes, would you be in favor of using it?

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	28	58	29	42
Short haul	32	59	25	41
Long haul	26	57	29	42

Drivers who have been driving for less than five years have greater acceptance (35%) of Commercial Vehicle Administrative Processes than drivers who have been driving for fifteen years or more (23%). Drivers who have been driving for longer periods of time are more likely to oppose using this service.

Table III. 3-- Favorability and Opposition To Use of CVAP

Considering all that you know about Commercial Vehicle Administrative Processes, would you be in favor of using it?

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor		Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	*28*	58		29	42
<5 years driving	*35*	64		25	36
5-15 years driving	*28*	56		28	44
15+ years driving	*23*	55		32	45

Less than truckload drivers are more favorable towards Commercial Vehicle Administrative Processes than full truckload drivers: 64% of LTL drivers favor using CVAP compared to 58% of full truckload drivers.

Table III. 4-- Favorabilitv and Opposition To Use of CVAP

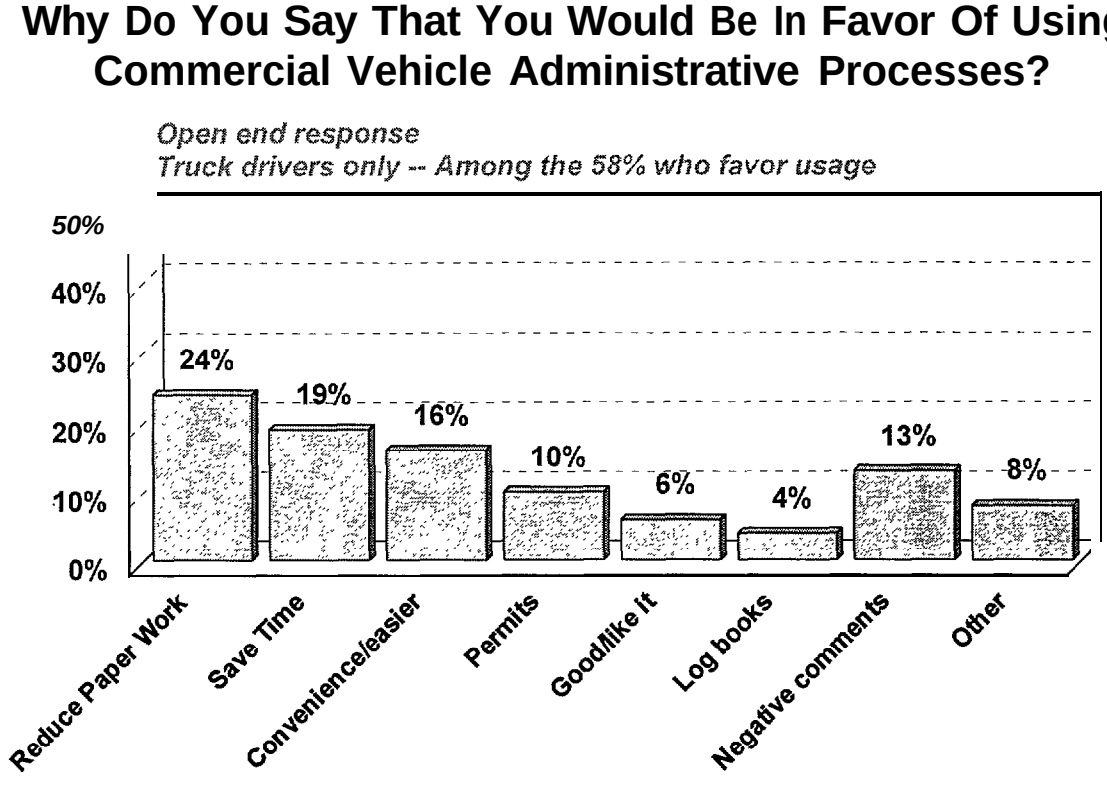
Considering all that you know about Commercial Vehicle Administrative Processes, would you be in favor of using it?

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor		Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	28	58		29	42
Full truckload	28	58		28	42
Less than truckload	3	64		22	35

REASONS DRIVERS ARE IN FAVOR OF USING CVAP

The 58% of truck drivers who are in favor of using Commercial Vehicle Administrative Processes were asked to describe why they favor this technological service. One in four respondents felt that CVAP would reduce paperwork, 19% thought it would save time, 16% thought that it would make work more convenient and easier, and 10% felt that it would help with permits.

Chart III. 7 -- Opposition To CVAP -- Open End



Margin of error = +I- 6.4%
Penn +Schoen Associates, Inc. T128

In the drivers' own words, they would be in favor of installation of Commercial Vehicle Administrative Processes for some of the following reasons:

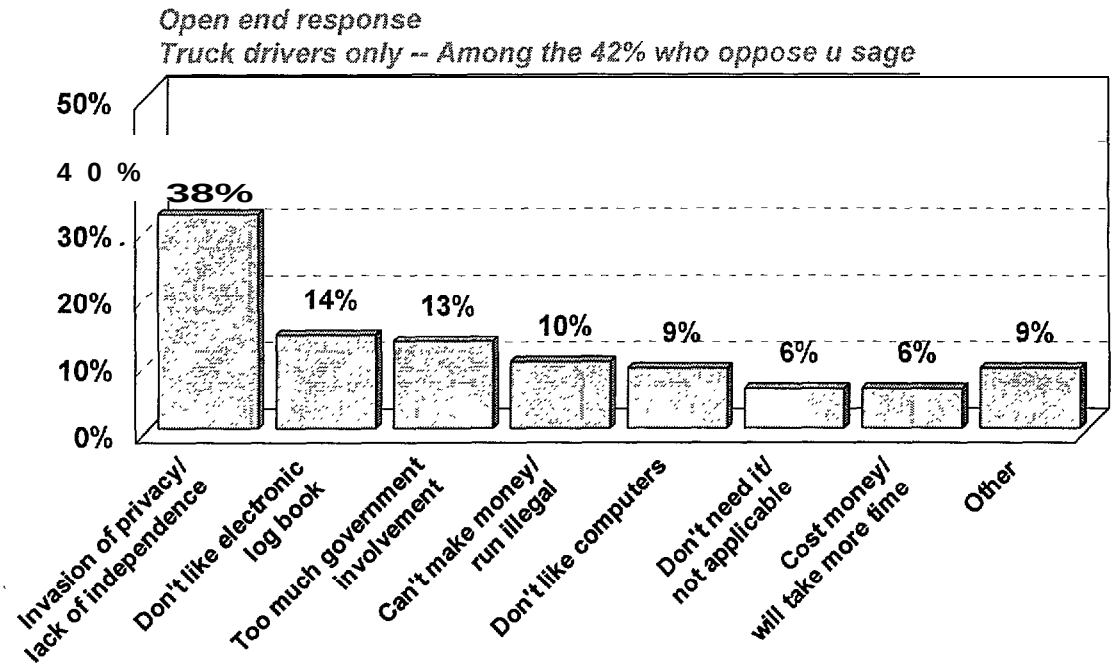
- *"I think it would speed things* ***up"***
- *"Anything that makes less work for the driver, saves time, and* makes *me more money. No need to chase down paperwork."*
- *"Can cut time on guess work with the log book. Fuel and miles would be kept automatically. Cut paperwork with permits and manifest."*
- *"Cut a lot of time. I am lazy and any technology that can help me is all right."*
- *"Gives me time to get rest instead of sitting in the* cab *doing paperwork."*
- *"It would take the whip out of the truck owner's hand, you can't fudge your logbook."*

REASONS DRIVERS ARE OPPOSED TO CVAP

The 42% of truck drivers who opposed Commercial Vehicle Administrative Processes were asked to describe why they were opposed to using this service. One-third (32%) of the respondents said that the reason they are opposed to CVAP is that they fear it invades their privacy and takes away their independence. In addition, 14% of respondents do not like the electronic log book and 13% do not want the government involved in this service.

Chart III. 8 -- Opposition To CVAP -- Open End

Why Do You Say That You Are Opposed To Using Commercial Vehicle Administrative Processes?



Margin of error = +I- 7.5%
Penn +Schoen Associates, Inc. T97

The verbatim responses indicate that many drivers are especially bothered by the electronic log book and government intervention.

- *"The amount of government control, and the access to information that should be confidential -- makes it harder for independent drivers to compete."*

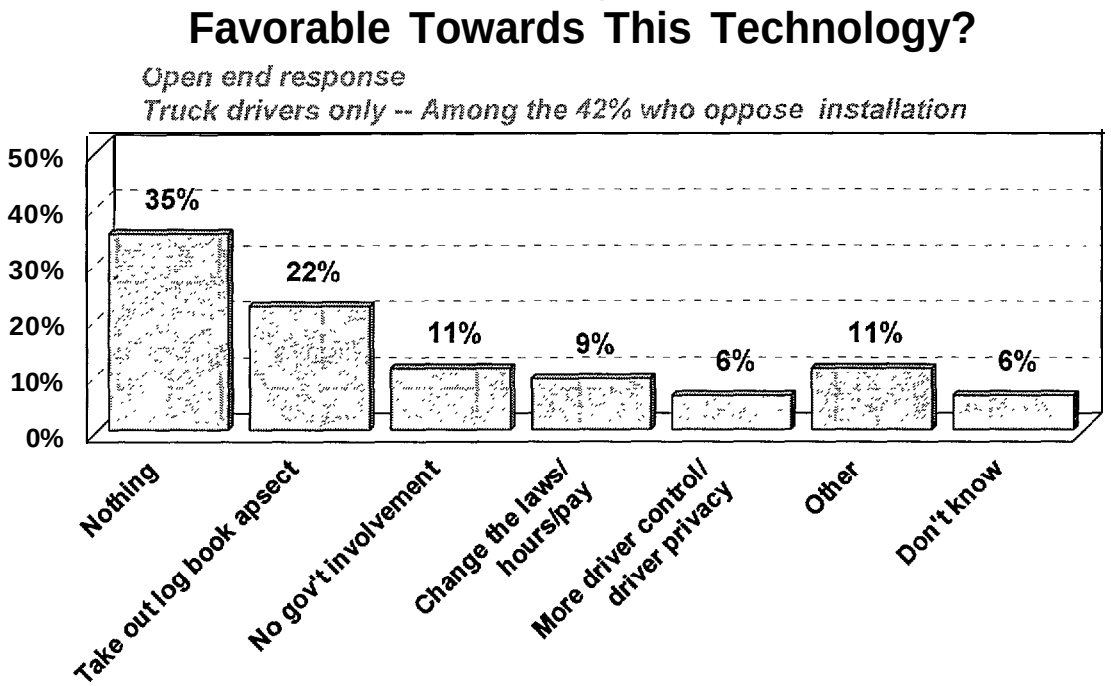
- *"I don't want them to be able to check my log or miles driven -- the 10 hour rule. They would be able to ticket us days after the fact."*

However, other drivers' resistance to CVAP was driven by other concerns, including:

- *'Computer error can ruin a trip. I would rather rely on humans. "*
- *"I don't* have *very much paperwork to do in the first place, and what I do have, my company takes care of for me. This could be used to keep track of where I am all the time. "*
- *"Makes management's job too easy with the fuel and mileage auditing, if I had my own truck it would make things easier but I am* a *company driver."*

Drivers who are opposed to Commercial Vehicle Administrative Processes were then asked what about the technological service could be changed to make them more favorable towards it. The majority of drivers were either opposed to the technological service all together and thought that nothing could be changed to improve it (35%) or thought that the technology would be good without the electronic log book (22%).

Chart III. 9 -- Opposition To CVAP – Open End



Margin of error = +I- 7.5%
Penn +Schoen Associates, Inc. T96

APPEAL OF COMPONENTS OF CVAP

Truck drivers, overall, were probed to determine which specific components of the technological service they found appealing, and which they were opposed to. As the following chart indicates, more than half of the respondents are favorable towards both the electronic purchase of credentials component and the automated mileage and fuel reporting component of this technological service.

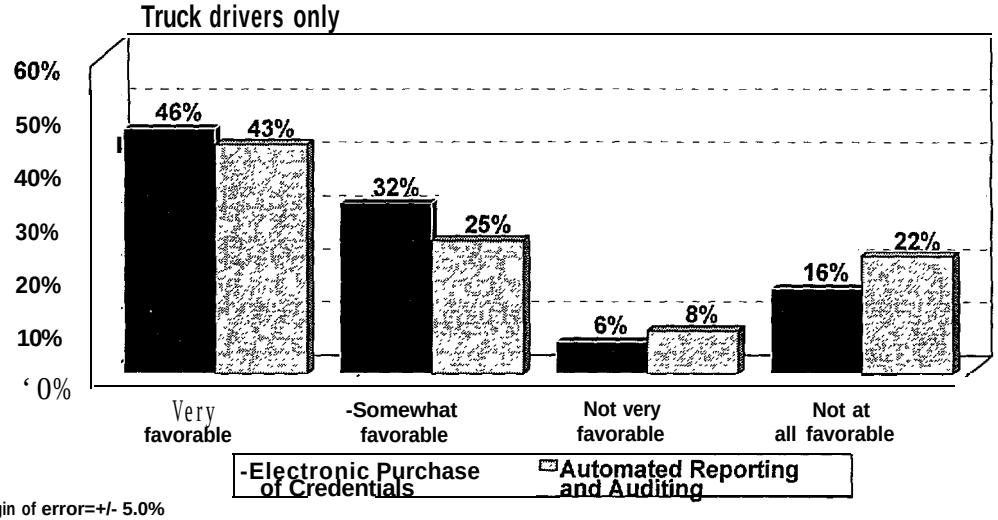
Although both components of CVAP were favored by at least three in five respondents, ***truck drivers are somewhat more favorable towards just the electronic purchase of credentials component of the technology than just***

the automated mileage and fuel reporting and auditing component.

Seventy eight percent of respondents were very or somewhat favorable towards the electronic purchase of credentials compared to the 68% of respondents who favored the automated mileage and fuel reporting and auditing component. Conversely, 30% of respondents were not favorable towards the reporting and auditing component while only 22% were not favorable towards the electronic purchase of credentials.

Chart III. 10 -- Truck Drivers Only -- Favorability Towards Components

Considering What You Have Heard About The Technology, How Favorable Are You Towards Just The [Electronic Purchase Of Credentials/Automated Mileage And Fuel Reporting And Auditing] Component Of This Technology?



Margin of error=+/- 5.0%
Penn + Schoen Associates, Inc. T132

ATTITUDES AND OPINIONS OF MOTORCOACH OPERATORS

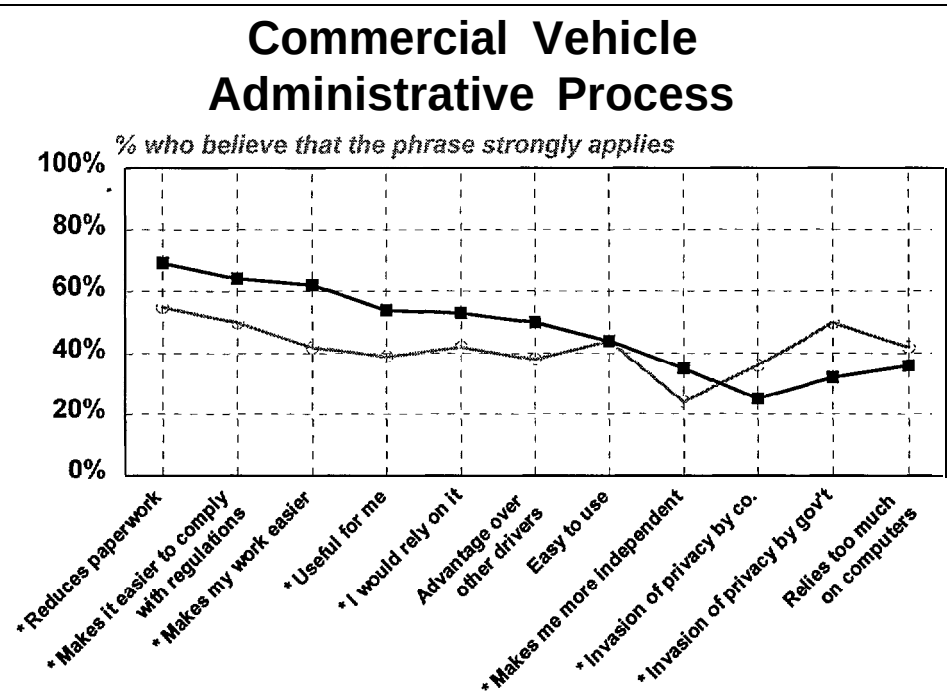
PERCEIVED BENEFITS OF CVAP

In contrast to truck drivers, motorcoach drivers were very favorable towards Commercial Vehicle Administrafive Processes. Motorcoach ***drivers were able to recognize the benefits of*** **CVAP** ***with regard to reducing paperwork and making it easier to comply with regulations, as well as the positive impact it could have on easing a driver's daily work routine. In addition, motorcoach drivers did nof particularly think that this service was intrusive.***

Compared to the other CVO services fested among motorcoach drivers, commercial vehicle administrations is rated highest for its ability to reduce paperwork and make the drivers work easier and is ranked second of the five services tesfed in favorability towards using it.

The following chart shows the favorability of motorcoach drivers towards CVAP across the range of attributes.

Chart III.11– Attribute Ratings -- Truck drivers vs. Motorcoach drivers



Bus Drivers	69%	64%	62%	54%	53%	50%	44%	35%	25%	32%	36%
Truck Drivers	55%	50%	42%	39%	42%	38%	44%	24%	36%	50%	42%

+Bus Drivers *Truck Drivers

* = Statistically Significant
Penn + Schoen Associates, Inc. T99-11

Motorcoach drivers recognize the benefits that CVAP will have in reducing paperwork (69%) making it easier to comply with existing regulations (64%) making work easier for the drivers (62%), and more than half (54%) think that this would be useful for them, reliable, and would give them an advantage over other drivers.

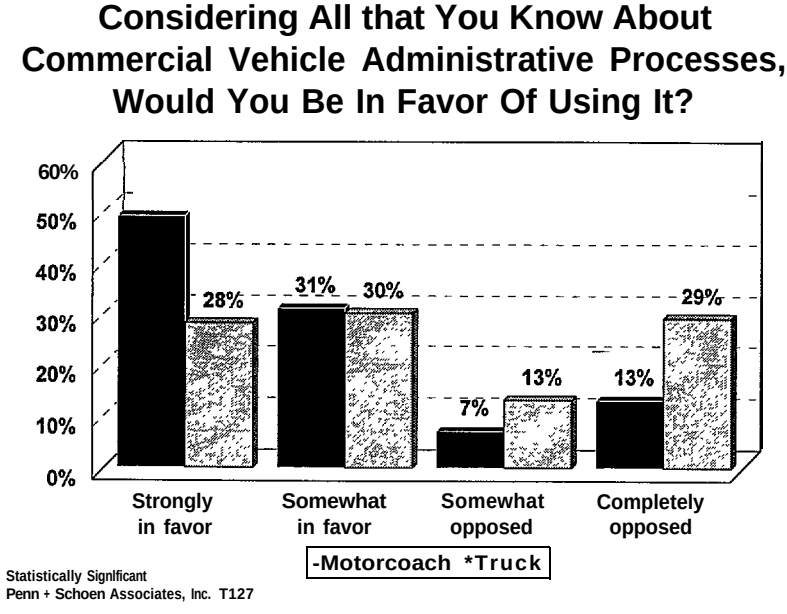
PERCEIVED WEAKNESSES OF CVAP

Between a quarter and a third of the respondents perceived weaknesses in Commercial Vehicle Administrative Processes: 25% of motorcoach operators thought this service would be an invasion of privacy by companies, 32% thought it would be an invasion of privacy by the government, and 36% felt that this technological service would rely too much on computers instead of humans.

ATTITUDES TOWARDS CVAP

Almost one of every two motorcoach operators would strongly favor using CVAP -- this is double the number of truck drivers who would strongly favor it. A total of four out of every five respondents would strongly or somewhat be in favor of using CVAP. Only 20% of motorcoach drivers opposed using Commercial Vehicle Administrative Processes -- that is half the number of truck drivers who opposed it.

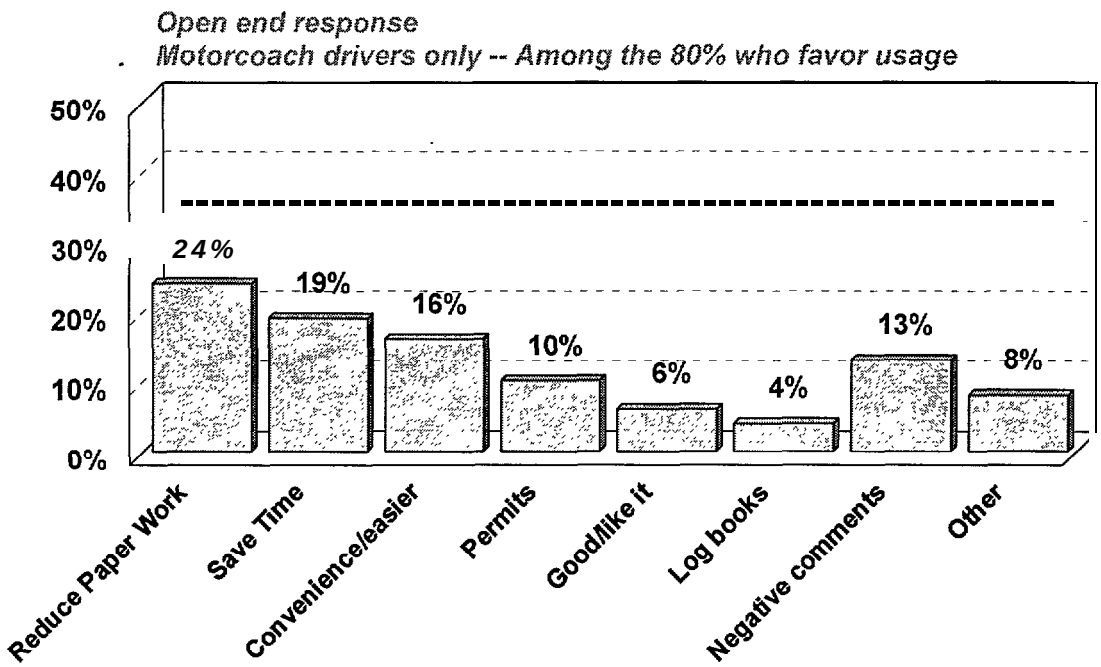
Chart Ill. 12 -- Motorcoach drivers only -- Favorability towards usage



REASONS MOTORCOACH OPERATORS ARE IN FAVOR OF USING GVAP

The following chart indicates the reasons why motorcoach drivers so strongly favor Commercial Vehicle Administrative Processes.

Why Do You Say That You Would Be In Favor Of Using Commercial Vehicle Administrative Processes?



Margin of error = +I- 9.3%
Penn + Schoen Associates, Inc. TI28

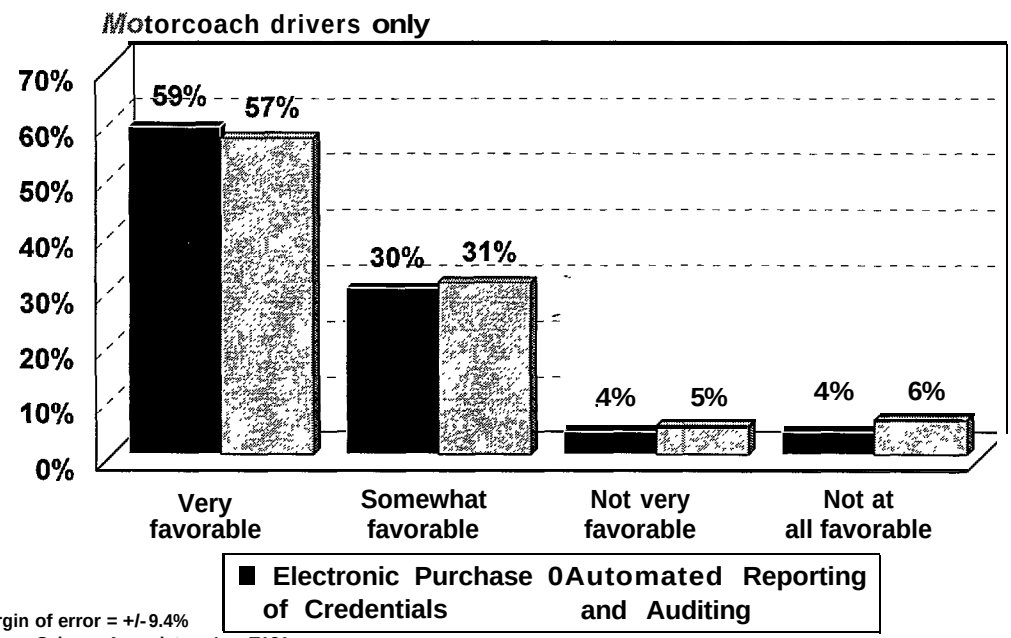
As the above chart indicates, motorcoach drivers were particularly attracted to Commercial Vehicle Administrative Processes because it would reduce paperwork (24%), save them time (19%) and would be convenient for them (16%).

APPEAL OF COMPONENTS OF CVAP

In contrast to truck drivers, motorcoach drivers were equally ***in favor of both the electronic purchase of credentials (89%) and the automated fuel reporting (88%) components of the technological service.*** As the following chart indicates, the majority of motorcoach operators were not opposed to either aspect of CVAP, and instead, nine out of ten respondents were favorable towards it.

Chart lll. 13 -- Truck Drivers Only -- Favorability Towards Components

Considering What You Have Heard About The Technology, How Favorable Are You Towards Just The [Electronic *Purchase Of Credentials/Automated Mileage And Fuel* Reporting *And Auditing7* Component Of This Technology?



Margin of error = +/- 9.4%
Penn + Schoen Associates, Inc. T131

IV. AUTOMATED ROADSIDE SAFETY INSPECTION SERVICE *(ARSI)*

On the whole, motor-coach operators were generally positive about Automated Roadside Safety Inspection, while truck drivers were often less enthusiastic. Both truck and motorcoach drivers were able to recognize the positive impact that Automated Roadside Safety Inspection service would have* on improving safety and *reducing traffic at the station. The majority of respondents however, did not think that the technology would reduce paperwork or make them more independent.

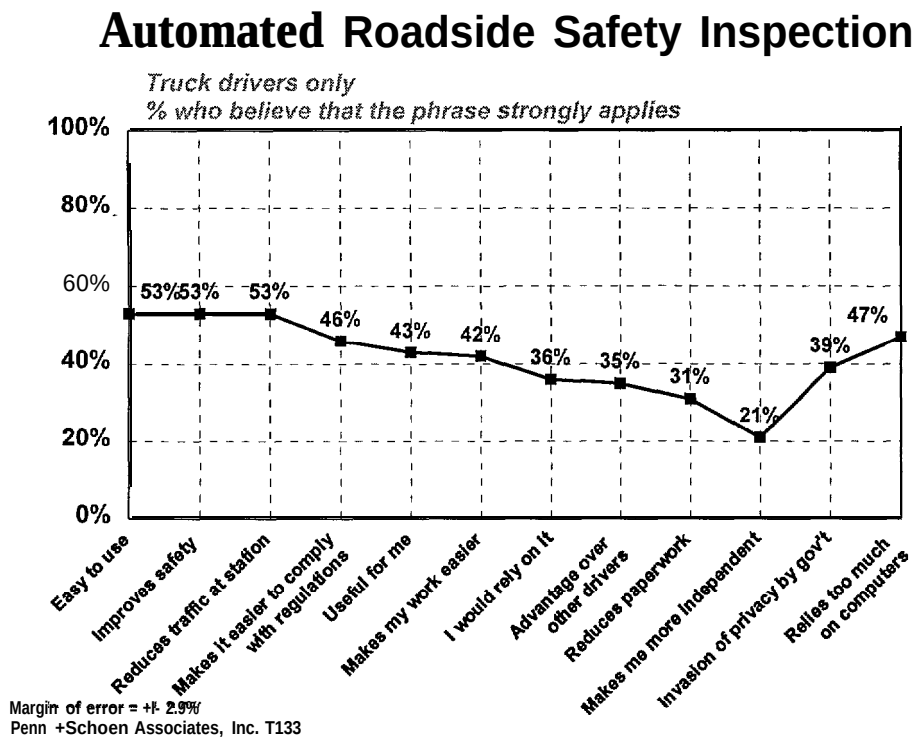
TRUCK DRIVERS' OPINIONS OF ARSI

PERCEIVED BENEFITS OF ARSI

Compared to the other five CVO services tested, truck drivers were not particularly favorable towards Automated Roadside Safety Inspection. Only about half of the respondents felt that the positive attributes strongly applied to ARSI.

Approximately one-half of truck drivers strongly agreed that Automated Roadside Safety Inspection would be easy to use (53%) would improve safety on the roads (53%), and reduce traffic at the station (53%). However, not many respondents perceived ARSI as having the ability to reduce paperwork (31%) or make drivers more independent (21%).

Chart IV. 1– Attribute Ratings -- Truck drivers only



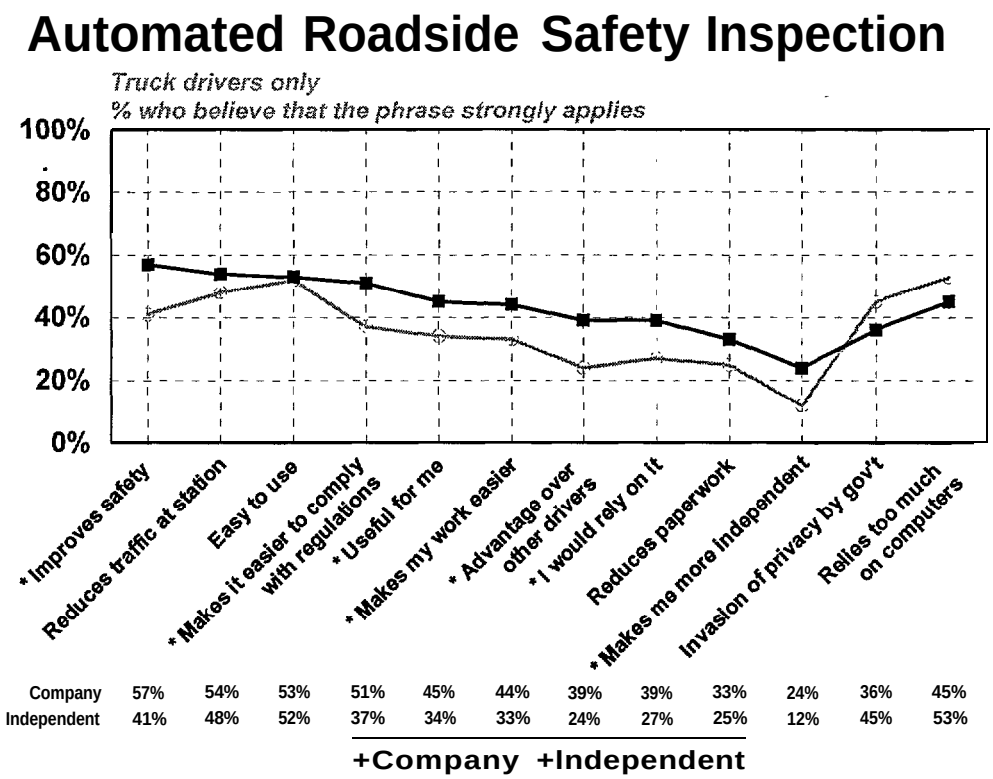
Certain segments of truck drivers were more likely than others to see benefits of Automated Roadside Safety Inspection service. Specifically, the following subgroups are more likely to recognize the strengths of Automated Roadside Safety Inspection service:

- ***Company drivers are more favorable than independents***
- ***Large fleet drivers are more favorable than small/medium fleet***
- ***Full truckload drivers are more favorable than less than truckload drivers***

The greatest difference exists between company drivers and independent owner operators. As the following chart indicates, across the range of attributes company drivers are much more favorable towards Automated Roadside Safety

Inspection service. However, both segments of drivers are equally likely to think that the service is easy to use.

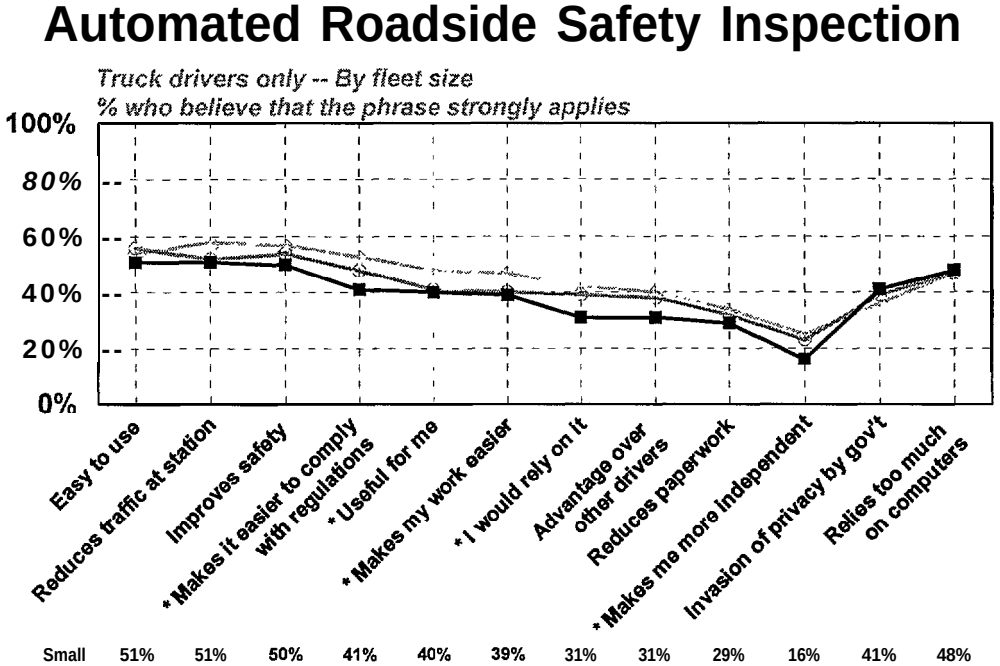
Chart IV. 2 --Attribute Ratings – Company drivers vs. Independent Owner Operators



* = Statistically Significant
Penn + Schoen Associates, Inc. T133-144

As the following chart indicates, variations also existed between drivers depending on the size of their fleet. Large **fleet** drivers are much more favorable towards Automated Roadside Safety Inspection than small or medium fleet drivers. Across every attribute, large fleet drivers were better able to recognize the advantages of Automated Roadside Safety Inspection service.

Chart IV. 3 -- Attribute Ratings -- Small fleet vs. Medium fleet vs. Large fleet



	Easy to use	Reduces traffic at station	Improves safety	* Makes it easier to comply with regulations	* Useful for me	* Makes my work easier	* I would rely on it	Advantage over other drivers	Reduces paperwork	* Makes me more independent	Invasion of privacy by gov't	Relies too much on computers
Small	51%	51%	50%	41%	40%	39%	31%	31%	29%	16%	41%	48%
Medium	56%	52%	54%	48%	41%	40%	39%	38%	32%	23%	39%	47%
Large	54%	58%	57%	53%	48%	47%	42%	40%	34%	25%	36%	47%

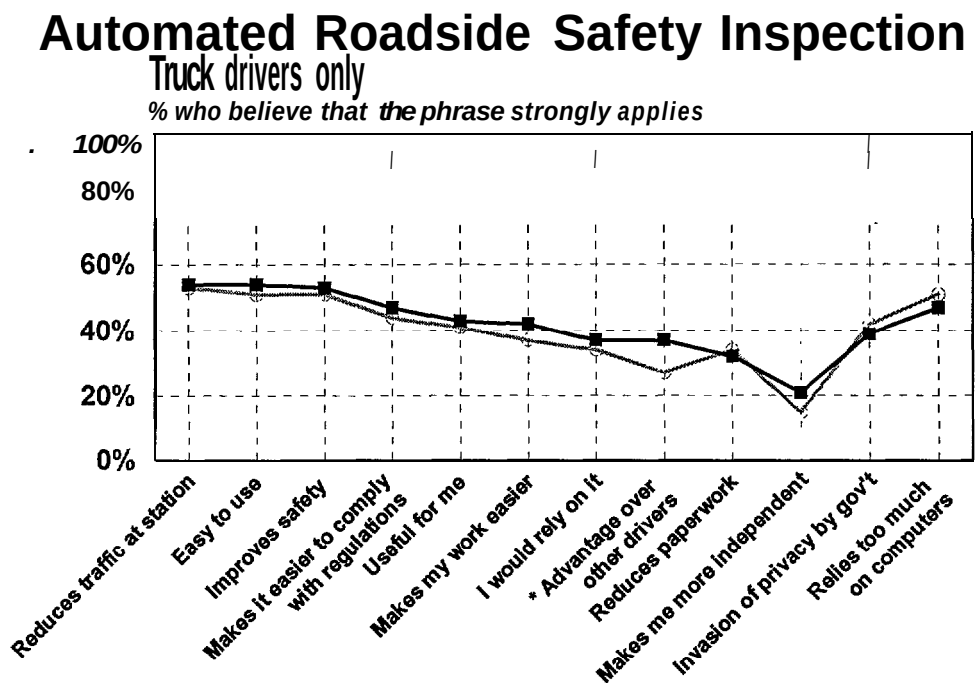
+Small +=-Medium --Large

* = Statistically Significant
Penn + Schoen Associates, Inc. T133-144

In addition, full truckload drivers are somewhat more likely to see positive aspects of Automated Roadside Safety Inspection service than less than truckload (LTL) drivers. Truckload drivers are more likely to believe that Automated Roadside Safety Inspection service will give them an advantage over other drivers (37% compared to the 27% of LTL drivers), makes them more

independent (21% compared to the 15% of LTL drivers) and that it would make their work easier (42% compared to the 37% of LTL drivers).

Chart IV. 4 -- Attribute Ratings -- Full truckload vs. Less than truckload



	Reduces traffic at station	Easy to use	Improves safety	Makes it easier to comply with regulations	Useful for me	Makes my work easier	I would rely on it	* Advantage over other drivers	Reduces paperwork	Makes me more independent	Invasion of privacy by gov't	Relies too much on computers
Full truckload	54%	54%	53%	47%	43%	42%	37%	37%	32%	21%	39%	47%
Less than truckload	53%	51%	51%	44%	41%	37%	34%	27%	34%	15%	42%	51%

+Full truckload *Less than truckload

* = Statistically Significant
Penn + Schoen Associates, Inc. T133-144

PERCEIVED WEAKNESSES OF ARSI

Certain weaknesses of Automated Roadside Safety Inspection service were perceived by respondents. As indicated in Chart IV.1 above, ARSI was perceived as relatively weak in the following areas:

- ***Respondents did not think that Automated Roadside Safety Inspection service would increase a driver's independence. Only one-fifth of drivers (21%) thought that this attribute was strongly applicable***

- *Thirty-nine percent of truck* drivers thought that use *of ARSI would lead to an invasion of driver's privacy by the government*

- *Almost half of the respondents (47%) felt that ARSI relied too much on computers (loss of human judgment)*

The following segments of truck drivers are most likely to perceive the relative weaknesses of Automated Roadside Safety Inspection service:

√ *Independent owner operators are more likely than company drivers to think that ARSI relies too heavily on computers (53%) and is an invasion of their privacy by the government (45%). Also, they are less favorable towards ARSI across the range of attributes and only 12% think that this service will increase their independence*

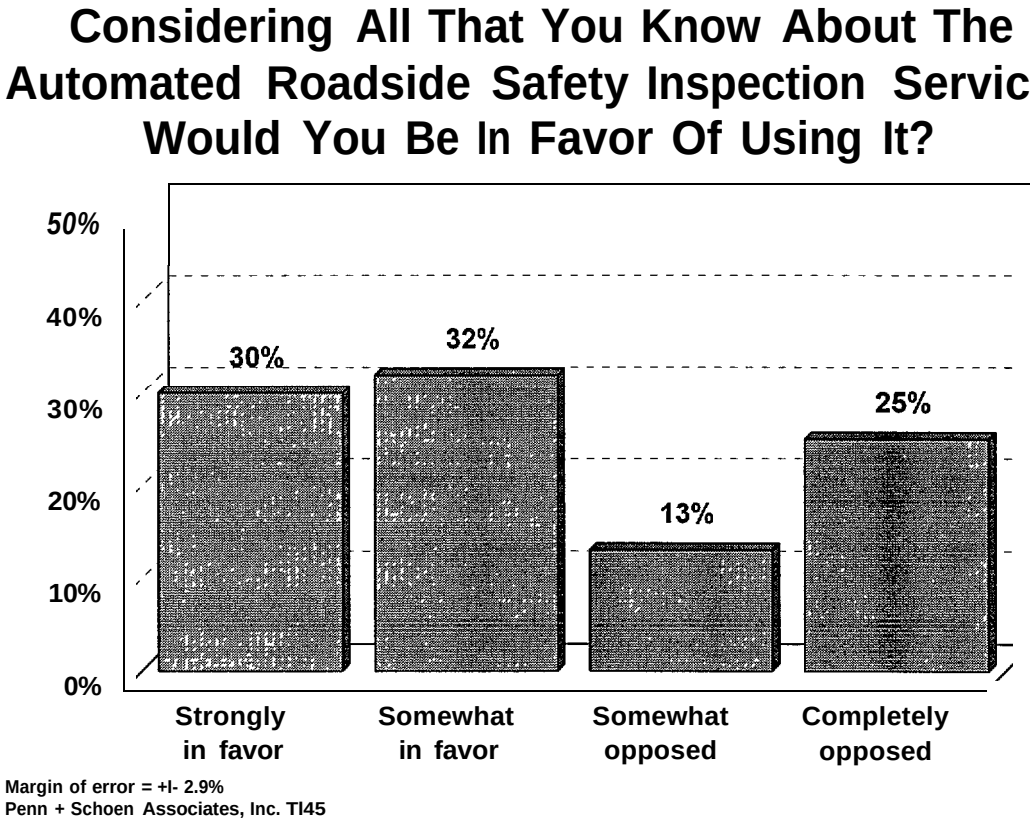
√ *Small fleet operators are less favorable towards ARSI than medium and* large fleet drivers. They are more likely than large *fleet operators to think that this service relies too heavily on computers. They a/so rate ARSI lower across the range of positive attributes*

√ *Less than truckload drivers are somewhat more likely than truckload drivers to think that ARSI is an invasion of their privacy by the government and relies too heavily on computers. In addition, only 15% were likely to think that this service would increase their independence*

ATTITUDES TOWARDS ARSI

As the chart below indicates, more than half of the respondents (62%) would be in favor of using Automated Roadside Safety Inspection service. However, of that majority, less than one in three (30%) would strongly favor using Automated Roadside Safety Inspection service. In addition, a total of 38% of truck drivers oppose using ARSI, and 25% of those respondents are completely opposed.

Chart IV. 5 -- Favorability and opposition towards use of ARSI



Margin of error = +I- 2.9%
Penn + Schoen Associates, Inc. TI45

Demand for Automated Roadside Safety Inspection service varies among subgroups. Company drivers (34%), who are better able to recognize the strengths of ARSI, are more likely than independent owner operators (23%) to strongly favor using Automated Roadside Safety Inspection. Independents

(21%) are more likely to completely oppose the service than company drivers (34%).

Table IV. 1– Favorability and Opposition To Use of ARSI

Considering all that you know about Automated Roadside Safety Inspection Service, would you be in favor of using it?

Statistically significant

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	30	62	25	38
Company	34	65	21	34
Independent	23	53	34	47

Large fleet drivers (68%) are more likely to favor using Automated Roadside Safety Inspection service than medium (60%) or small fleet drivers (60%). Small fleet drivers (30%) on the other hand, are more likely to completely oppose use of ARSI.

Table IV. 2-- Favorability and Opposition To Use of ARSI

Considering all that you know about Automated Roadside Safety Inspection Service, would you be in favor of using it?

Statistically *significant*

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	30	62	25	38
Small fleet	27	60	30	41
Medium fleet	30	60	23	40
Larae fleet	35	68	20	32

Drivers acceptance of Automated Roadside Safety Inspection also varied between full truckload drivers and less than truckload drivers. Thirty-one percent of less than truckload drivers are completely opposed to using Automated Roadside Safety Inspection service compared to the 24% of truckload drivers who are completely opposed.

Table IV. 3-- Favorability and Opposition To Use of ARSI

Considering all that you know about Automated Roadside Safety Inspection Service, would you be in favor of usin_ it?

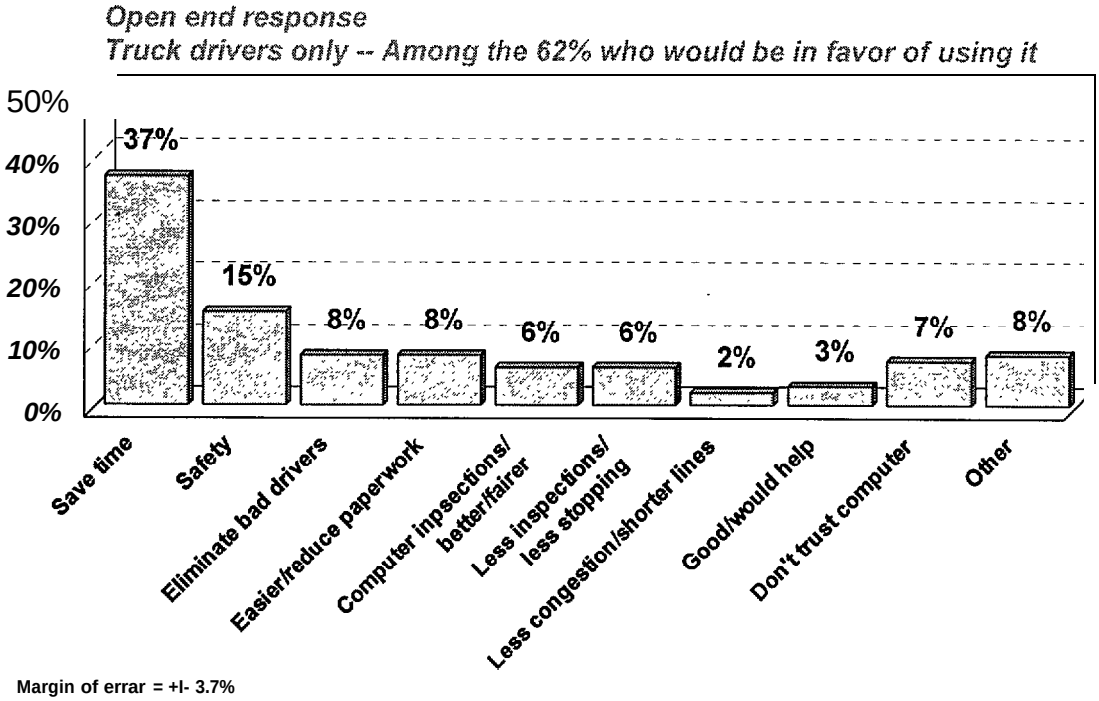
Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	30	62	25	38
Full Truckload	31	63	24	37
Less than truckload	34	60	31	40

REASONS DRIVERS ARE IN FAVOR OF USING ARSI

Drivers who are strongly or somewhat in favor of using Automated Roadside Safety Inspection service were asked to describe in their own words why they are in favor. As the following chart indicates, the most important reasons drivers favor ARSI is that it saves time (37%) and that it has safety benefits (15%).

Chart IV. 6 -- Open end -- Favorability towards ARSI

Why Do You Say That You Would Be In Favor Of Using Automated Roadside Safety Inspection Service?



Margin of errar = +I- 3.7%
Penn +Schoen Associates, Inc. T128

Below are some verbatim responses drivers provided as to why they are in favor of installation:

- *"All wrecks would get off the road. They would know who the safe drivers are. Safety inspections would be faster and would let you know if something is wrong. Less harassment. "*

- *"Automated inspection would* save *time -- DOT gets pretty technical. Less paperwork. If truck driver is usually safe* and *hasn't had problems he won't be pulled over* as *much."*

- *"Computers rely on facts -- the inspector might be having a bad day* and *might have an attitude -- computers don't have attitudes. Also, I have done the rolling brake test before ant thought it wasn't a bad deal"*

- *"Would get the high risk drivers off the road -- time saver -- more accurate inspections"*

- *"Something has to be done* about *safety for trucks and drivers. This would he/p clean up the bad drivers and trucks. "*

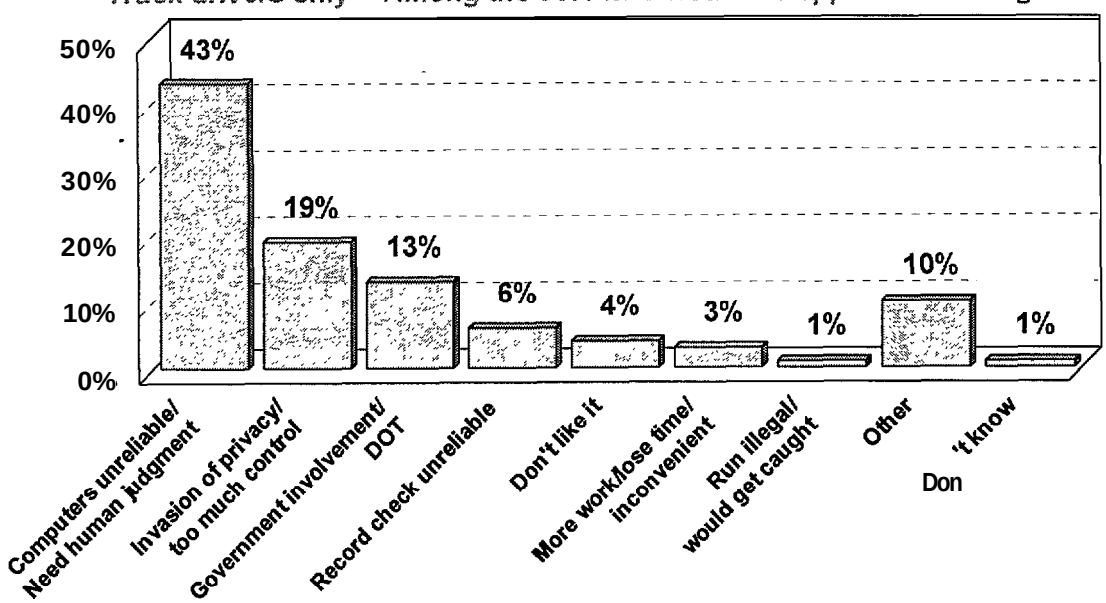
REASONS DRIVERS ARE OPPOSED TO ARSI

The 38% of truck drivers who said that they are opposed to using Automated Roadside Safety Inspection service were asked why. Most drivers were against using this technology because they felt that computers could not accurately inspect their trucks (43%) because they felt it was an invasion of privacy (19%) or because they felt that there would be too much government involvement (13%).

Chart IV. 7-- Open end -- Opposition to ARSI

Why Do You Say That You Are Opposed To Using Automated Roadside Safety Inspection Service?

Open end response
Truck drivers only -- Among the 38% who would be opposed to using it



Margin of error = +I- 4.7%
Penn + Schoen Associates, Inc. T147

Drivers offered the following verbatim responses as to why they are opposed to having ARSI installed in their vehicles:

- **"Another way** *for the* **governmenf to make money. Everything is already** *checked by the company. Also its time consuming. The computer makes mistakes too."*

- *"Because of computer error -- nothing compares to human judgment. I don't like it and I would rather have the human element involved. If worked for years, why fix it?"*

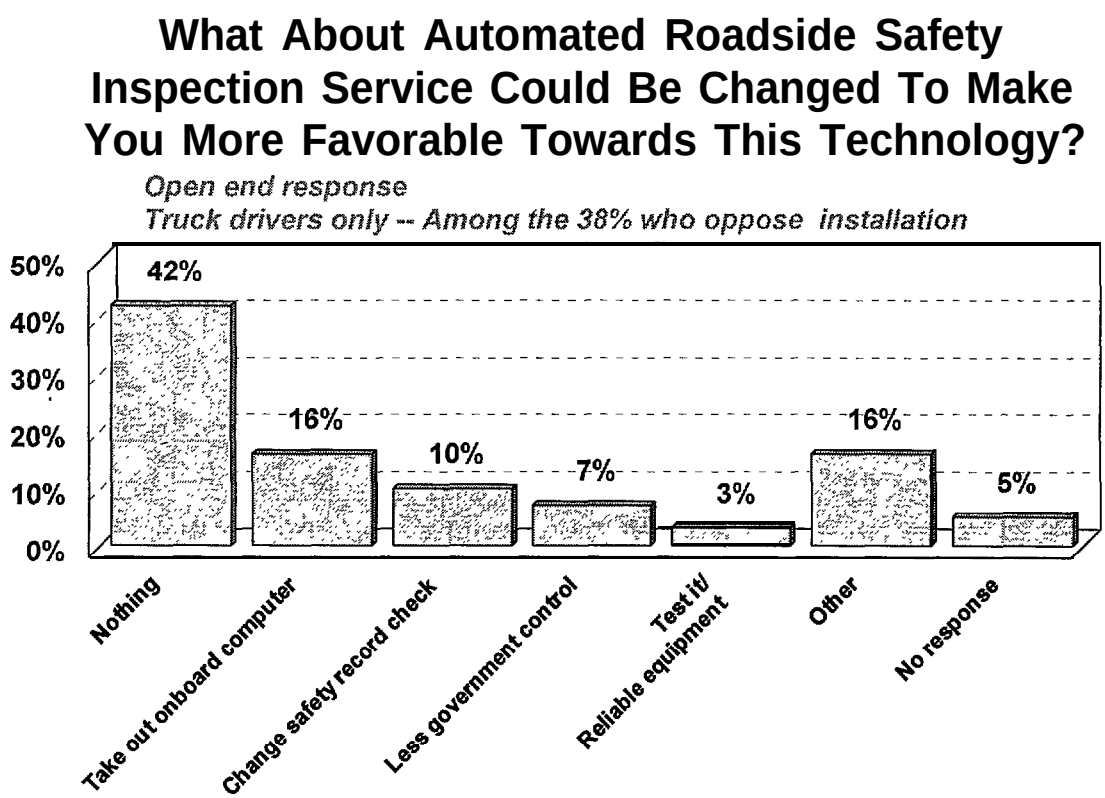
- *"I don't like that they look at the safety record of the driver, Just because I have tickets does not make me a bad driver. It singles people out. "*

- *"Everytime the government is involved there are too many restrictions. Company should be responsible for safety inspections and not the federal government. "*

- *"if you suspect a vehicle, it should not be based on the safety history of the driver, it should be based on the driver. Just because someone has a good safety record doesn't mean that they may not miss something. That is why we have professionals out here to check -- they just overstep their bounds sometimes. Electronics cannot accurately inspect a vehicle."*

These drivers, who are opposed to installation of Automated Roadside Safety Inspection service were then asked if anything about the service could be changed to make them more favorable towards it. The following chart shows that 42% respondents said that nothing could be done and 16% said that they would like the service better if they took out the onboard computer.

Chart IV. 8 -- Open end -- Opposition to ARSI



Margin of error = +/- 4.7%
Penn + Schoen Associates, Inc. T148

Following are some verbatim responses as to what could be changed about the technological service:

- *"Can't go on a driver's* **safety** *history. Tickets don't tell the whole story. "*
- *"Combination of computers and humans checking"*
- *"Eliminate the revenue generation by the government.* **Make** *conditions conducive to the driver. "*
- *"Not done on roadside. Do inspections at weigh stations or rest* **area** *and don't hook 'into my onboard computer."*

DRIVERS ENGAGED IN OPERATIONAL TESTS

Drivers who have been involved in either the I-75 or HELP/Crescent operational tests were more favorable to this service. Across the range of attributes, and on the following attributes in particular, operational test participants tend to rate this service higher than did the overall sample:

- *useful for me (68% for test participants versus 43% overall)*
- *will work/I would rely on it (54% versus 36%)*
- *would give me* **an** *advantage over other drivers (54% versus 35%)*

These respondents also tended to be less likely to say that the technology exhibits the following weaknesses:

- *invasion of my privacy by government (79% for test participants versus 39% overall)*
- *relies too much on computers/loss of human judgment (79% versus 47%)*

Operational test participants were also more likely to favor installation of ARSI in their vehicles.

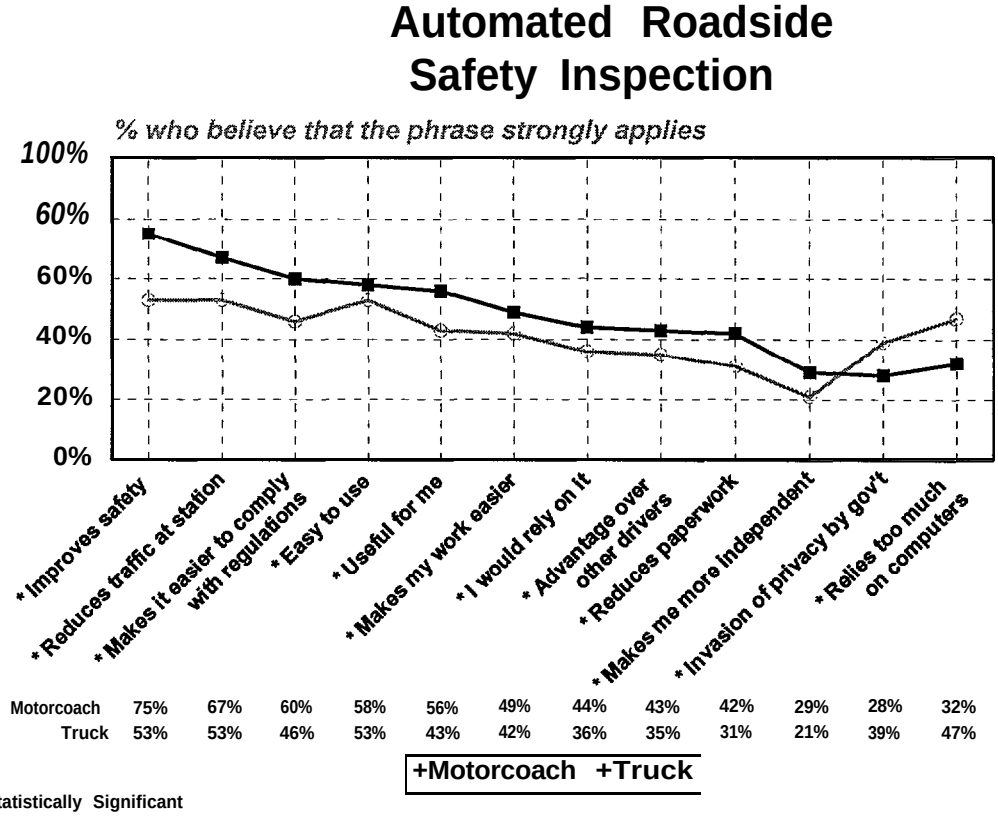
ATTITUDES AND OPINIONS OF MOTORCOACH OPERATORS

Overall, motorcoach drivers were more favorable towards Automated Roadside Safety inspection service than truck drivers. Across the range of attributes motorcoach drivers were better able to recognize fhe benefits of ARSI and were less likely to associate weaknesses with the service.

PERCEIVED BENEFITS OF ARSI

Three-quarters (75%) of motorcoach operators felt that this technological service would help to improve safety on the road and two thirds (67%) felt that this service would help reduce traffic at the station. In addition, more than half (56%) strongly agreed that this technological service would be useful for them.

Chart IV. 9 -- Attribute Ratinas -- Motorcoach drivers vs. Truck drivers

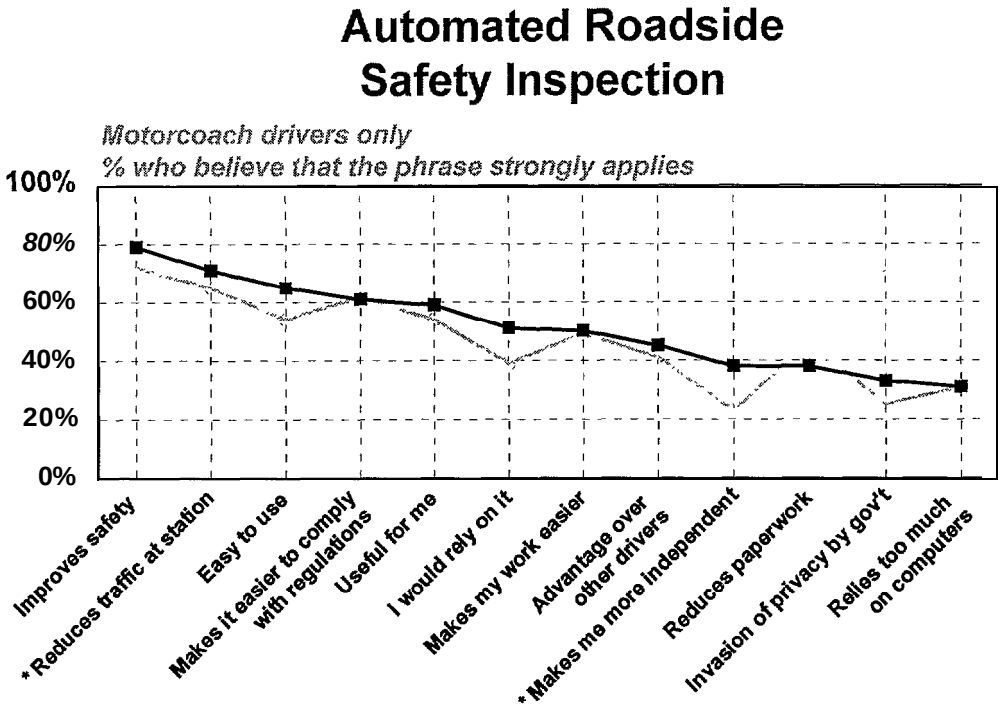


* = Statistically Significant
Penn + Schoen Associates, Inc. T133

Among motorcoach drivers, charter operators are more favorable toward Automated Roadside Safety Inspection service than line run operators. The most substantial difference between these two subgroups is whether ARSI makes drivers more independent: 38% of charter drivers thinks that the service makes you more independent compared to the 23% of line-run drivers. There are also substantial differences over whether the technological service is easy to use -- 65% of charter drivers think so compared to 54% of line-run operators -- and whether a driver thinks the technology would work and is reliable -- half (51%) of charter drivers think so compared to 39% of line-run operators.

Although overall charter drivers are better able to recognize more benefits of ARSI, line-run drivers (46%) are more likely than charter operators to think that this service will help reduce the burden of paperwork.

Chart IV. 10-- Attribute Ratings -- Charter vs. Line-Run



Charter	79%	71%	65%	61%	59%	51%	50%	45%	38%	38%	33%	31%
Line Run	72%	65%	54%	62%	54%	39%	49%	41%	23%	46%	25%	31%

+Charter -.-Line Run

*= Statistically Significant
Penn +Schoen Associates, Inc. T133

PERCEIVED WEAKNESSES OF ARSI

Although the majority of motorcoach drivers are able to recognize benefits of the service, a substantial number do think that this technological service is an invasion of privacy by the government (28%) and that it relies too much on computers and that the human element is excluded (32%).

In addition, the majority of respondents did not rate the technological service particularly high for its ability to reduce paperwork (42%) or make drivers more independent (29%).

As the following table indicates, almost one in three (32%) motorcoach drivers felt that this technological service relied too heavily on computers and 28% felt that it was an invasion of privacy by the government.

Motorcoach drivers only – Attribute Ratings

Percent who believe the phrase strongly applies
All numbers represent percentages

	Motorcoach drivers	Charter	Line-run
Relies too much on computers	32	31	31
Invasion of privacy by government	28	33	25

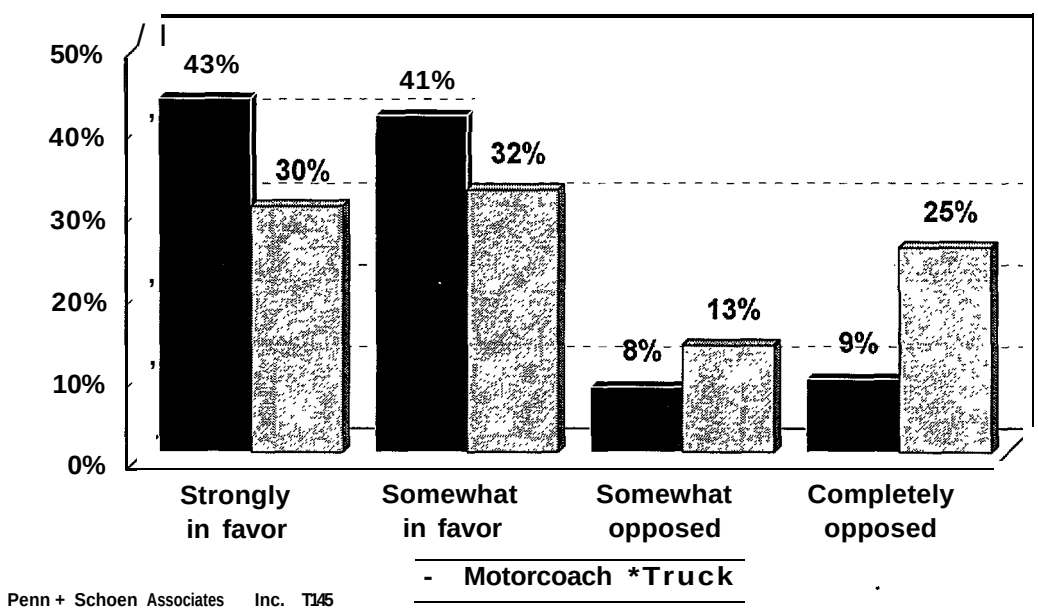
The above table also illustrates charter and line-run operators' perceptions of the relative weaknesses of Automated Roadside Safety Inspection service. In Chart IV.7 (see above) charter drivers rate Automated Roadside Safety Inspection service higher across the range of attributes than line-run drivers do. However, although charter drivers seem better able than line-run operators to recognize the strengths of this service, they are also more likely to think that ARSI is an invasion of their privacy by the government.

ATTITUDES TOWARDS ARSI

Acceptance of Automated Roadside Safety Inspection service is greater among motorcoach drivers than among truck drivers. More than four in five (84%) motorcoach drivers would be in favor of using Automated Roadside Safety Inspection service compared to the 62% of truck drivers who would favor it.

Similarly, truck drivers (38%) are more than twice as likely as motorcoach drivers to be opposed to using this CVO Service.

Chart IV. 11 -- Favorability and opposition towards use of ARSI



Although charter drivers are better able to recognize the benefits of ARSI than line-run drivers (see chart IV.7 above), the two subgroups are about equal in their demand for the service. Overall, 86% of charter drivers are in favor of using ARSI compared to the 83% of line-run drivers. Alternatively, 15% of charter drivers oppose using this service compared to the 17% of line-run drivers. However, charter drivers' ability to better perceive the benefits of ARSI is reflected in the higher number of charter drivers who are "strongly in favor" of using the service.

Table IV. 4-- Favorability and Opposition To Use of ARSI

Considering all that you know about Automated Roadside Safety Inspection Service, would you be in favor of using it?

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor		Completely Opposed	Somewhat + Completely Opposed
Motorcoach drivers overall	43	84		9	17
Charter	48	86		9	15
Line-run	39	83		8	17

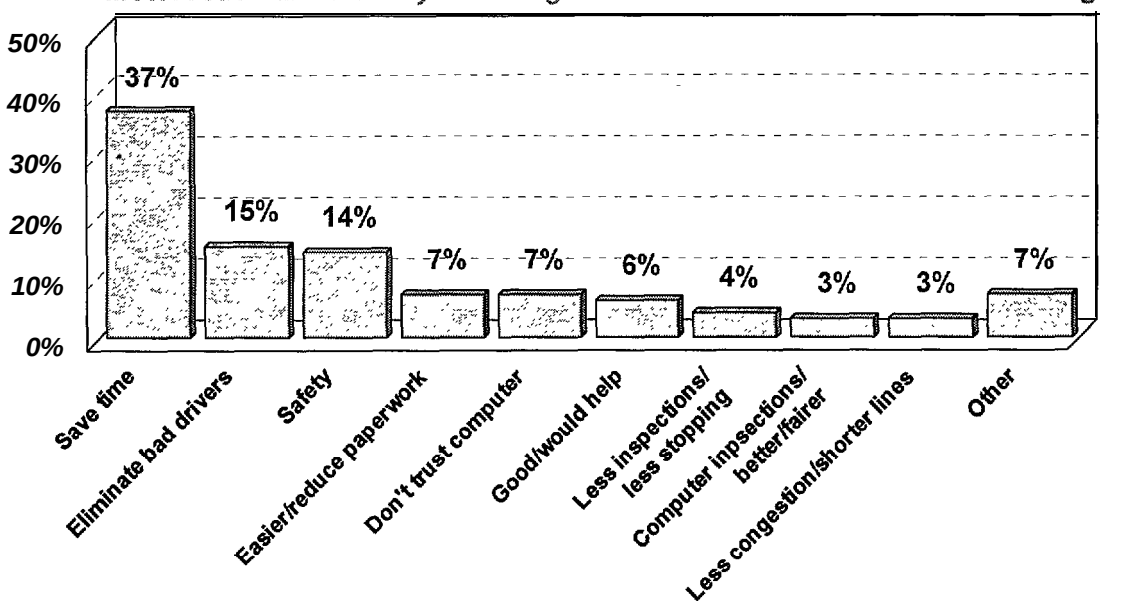
REASONS MOTORCOACH OPERATORS ARE IN FAVOR OF USING ARSI

Motorcoach operators who are strongly or somewhat in favor of using Automated Roadside Safety Inspection service were asked to describe in their own words why they are in favor. As the following chart indicates, the most important reason among those drivers is that it saves time (37%).

Chart IV. 12 -- Open end -- Favorability towards ARSI

Why Do You Say That You Would Be In Favor Of Using Automated Roadside Safety Inspection Service?

Open end response
Motorcoach drivers only -- Among the 84% who would be in favor of using it



Margin of error = +I- 5.3%
Penn + Schoen Associates, Inc. T128

V. HAZARDOUS MATERIAL INCIDENT RESPONSE SERVICE *(HMIR)*

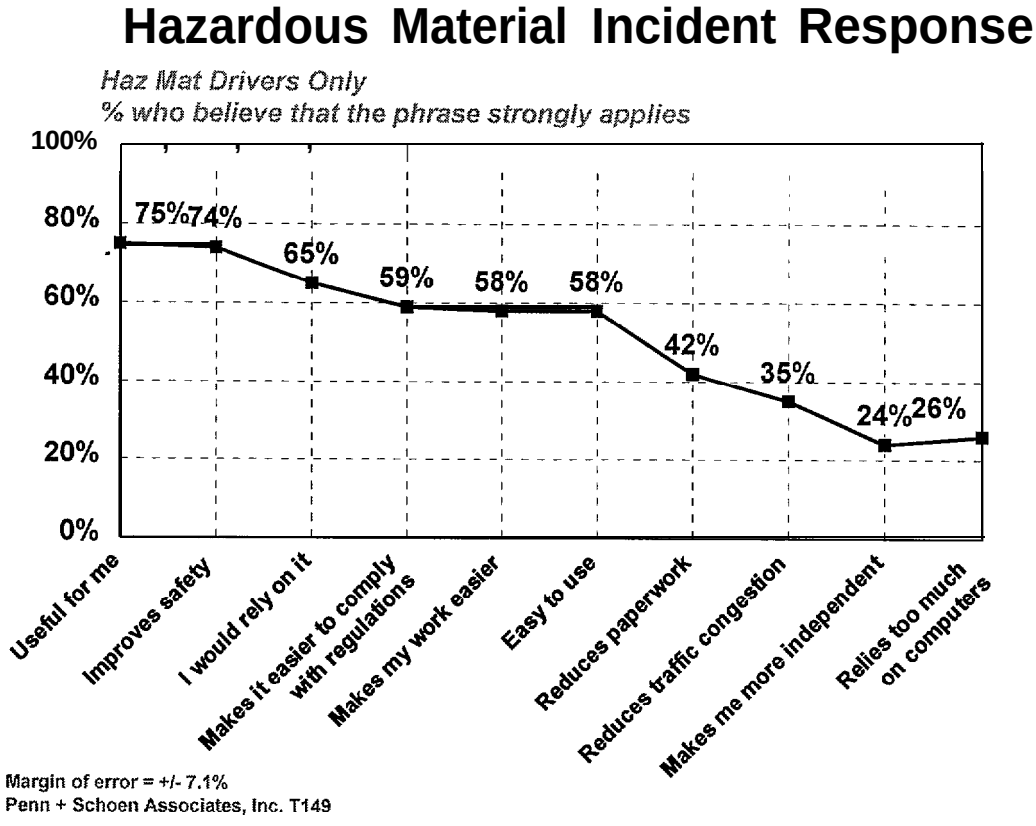
Note: those truck drivers (189 drivers) who said that they haul hazardous materials were asked about Hazardous Material incident Response service.

Truck drivers were extremely favorable towards Hazardous Material incident Response service. Drivers were especially able to recognize the safety benefits of this technology and the usefulness it would have for the driver.

PERCEIVED BENEFITS OF HMIR

Hazardous material incident response service was perceived by the majority as having a wide range of advantages. Three in four respondents recognized that this technological service could be useful for them (75%) and would improve safety on the road. More than half of the respondents also strongly agreed that this technological service would work/they could rely on it (65%), it would make it easier to comply with existing regulations (58%), and that it would be easy to use.

Chart V. 1-- Drivers who haul hazardous materials -- Attribute Ratings



PERCEIVED WEAKNESSES OF HMIR

Respondents did see certain drawbacks in using hazardous materials incident response service. Approximately one in four respondents (26%) thought that this technological service relied too much on computers and excluded human judgment.

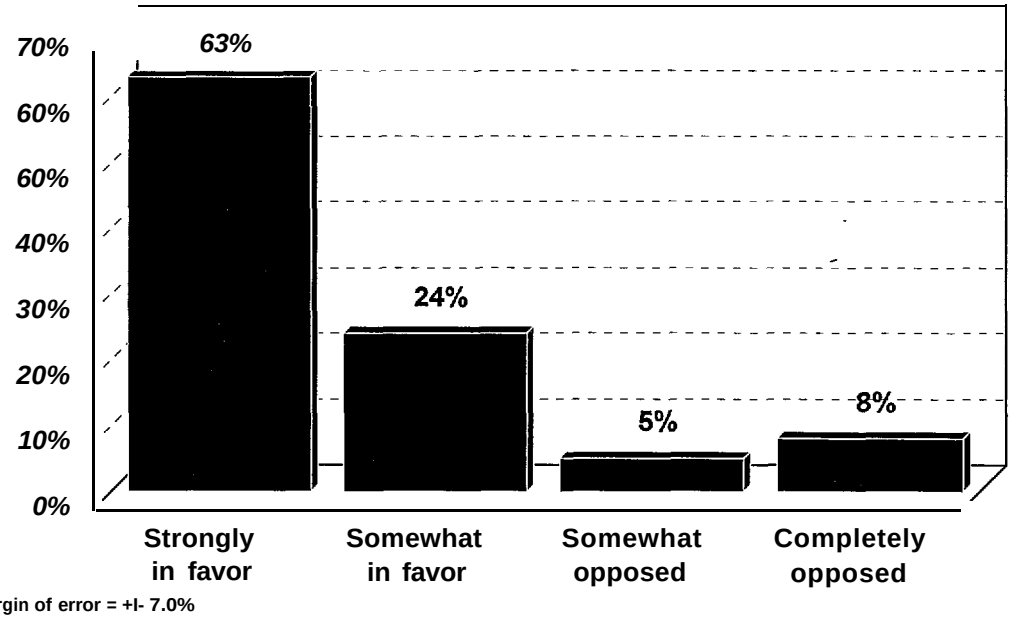
In addition, Hazardous Material Incident Response did receive relatively low ratings on some of the positive attributes. Less than a quarter of the respondents (24%) thought that this technological service would make drivers more independent, and only 35% thought that this technological service would reduce paperwork.

ATTITUDES TOWARDS HMIR

Drivers' favorability towards Hazardous Material Incident Response service is reflected in the high number of drivers who would be in favor of using this service. As the following chart indicates, 63% of drivers who haul hazardous materials are "strongly favor" of having Hazardous Material Incident Response installed in their vehicle and 87% overall are in favor of it. Only 14% of the respondents are opposed to this service.

Chart V. 2-- Drivers who haul hazardous materials -- Favorability and opposition

Considering All That You Know About Hazardous Material Inc ,dent Response, Would You Be In Favor Of Having It Installed In Your [Bus/Truck]?

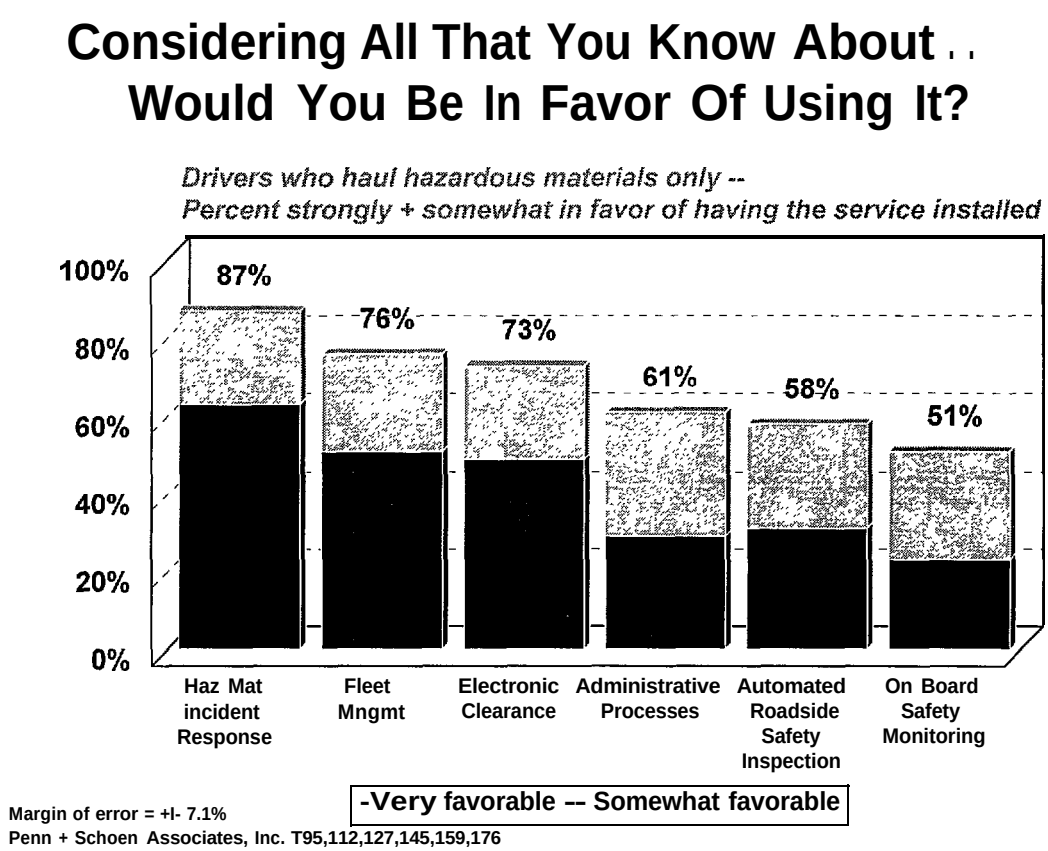


Margin of error = +I- 7.0%
Penn + Schoen Associates, Inc. T159

When Hazardous Material Incident Response service is compared to the other five CVO services tested, respondent's high demand for the service is

apparent. ***Compared to the other five CVO services tested, respondents were most favorable towards Hazardous Material Incident Response service.***

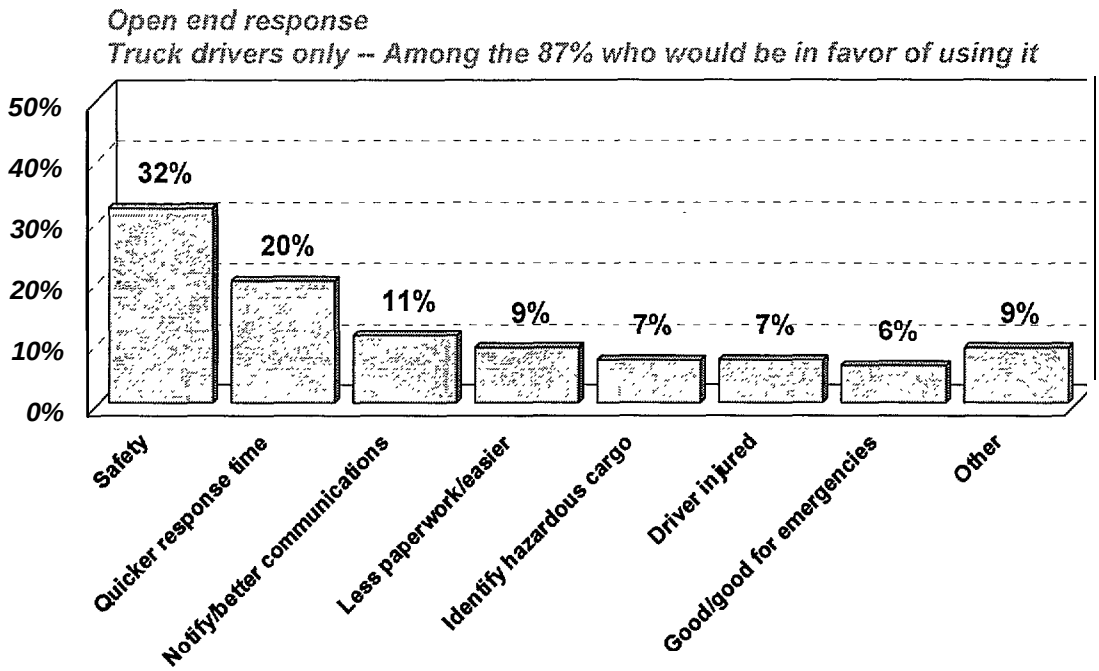
Chart V. 3 – Drivers who haul hazardous materials -- Favorability



REASONS DRIVERS ARE IN FAVOR OF USING HMIR

The 87% of drivers who are in favor of Hazardous Material Incident Response service were primarily in favor of this service because of its safety benefits.

Why Do You Say That You Would Be In Favor Of Using Hazardous Material Incident Response Service?



Margin of error = +I- 7.7%
Penn +Schoen Associates. Inc. T128

The following are some verbatim responses that reflect drivers' the reasons drivers are so favorable towards this service:

- √ *"Anything that could increase safety is good. I am very favorable towards safe operation."*
- √ *"Hazardous materials should be safely carried on the road and identification of the materials is important. "*
- √ *"A human would still know how to deal with* an *incident. But, if the driver were injured it would send the signal automatically."*
- √ *"Too many of these accidents happen in the middle of nowhere. This would get help faster. Time is critical."*
- √ *"Avoid traffic congestion in* case *of an accident – would make clean up easier. "*

- **"Safety** *purposes for the driver* **and** *the general public. Help the team appraise the situation before they get there."*

REASONS DRIVERS ARE OPPOSED TO HMIR

Of the respondents questioned, only 14% were opposed to the installation of Hazardous Material Incident Response service in their vehicle. The following is a verbatim list of some of the reasons drivers gave for opposing installation of this service:

- *"One more thing to confuse you and worry about while you are going down the road. Complicated"*
- *"It would be expensive if accident were only a fender bender*
- *"If a truck is involved in a serious accident the sensors would not be working. I feel this is not feasible."*
- *"Too much government knowing what you* **are** *doing. They could track the truck"*

Drivers who oppose installation of Hazardous Material Incident Response service were also asked, what if anything about the technological service could be changed to make them more favorable towards it. The following are some verbatim responses offered by the drivers:

- *"Let the government* **pay** *for it instead of the driver or the carrier or the insurance company"*
- *"Include all the haz mat info in with your load info when calling to dispatchers. The telephone call is more reliable"*
- *"Install a code which indicates the nature of your incident to judge which unit is sent out"*
- *"Nothing. I don't see how it would work in case of a serious accident. Impossible"*

VI. ON BOARD SAFETY MONITORING SERVICE (OBSM)

Compared to the other CVO services tested, users were not particularly favorable towards On Board Safety Monitoring. While a majority of respondents were able to recognize the potential safety benefits of this service, the idea that the technology was too invasive and too reliant on computers made some respondents unwilling to accept this service.

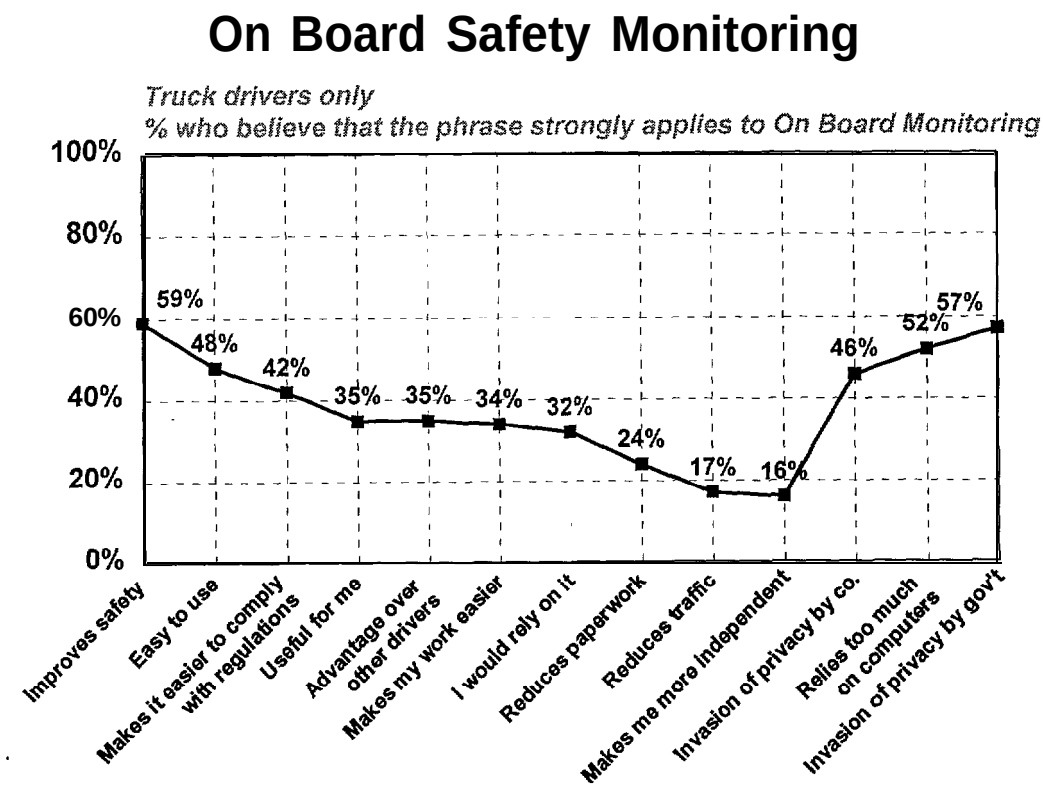
TRUCK DRIVERS' OPINIONS OF ON BOARD SAFETY MONITORING

PERCEIVED BENEFITS

Among truck drivers, safety is the greatest perceived benefit of On Board Safety Monitoring service. Almost three in five respondents (59%) thought that this service would improve safety on the roads. In fact, On Board Safety Monitoring was rated higher than any other CVO service -- except for hazardous material incident response service -- for its ability to improve safety on the road.

As the following chart indicates, On Board Safety Monitoring was also rated relatively highly for its ease of use (48%) and for making it easier to comply with existing regulations (42%). However, less than half of the respondents found these attributes strongly applicable.

Chart VI. 1 --Attribute Ratings -- Truck drivers only

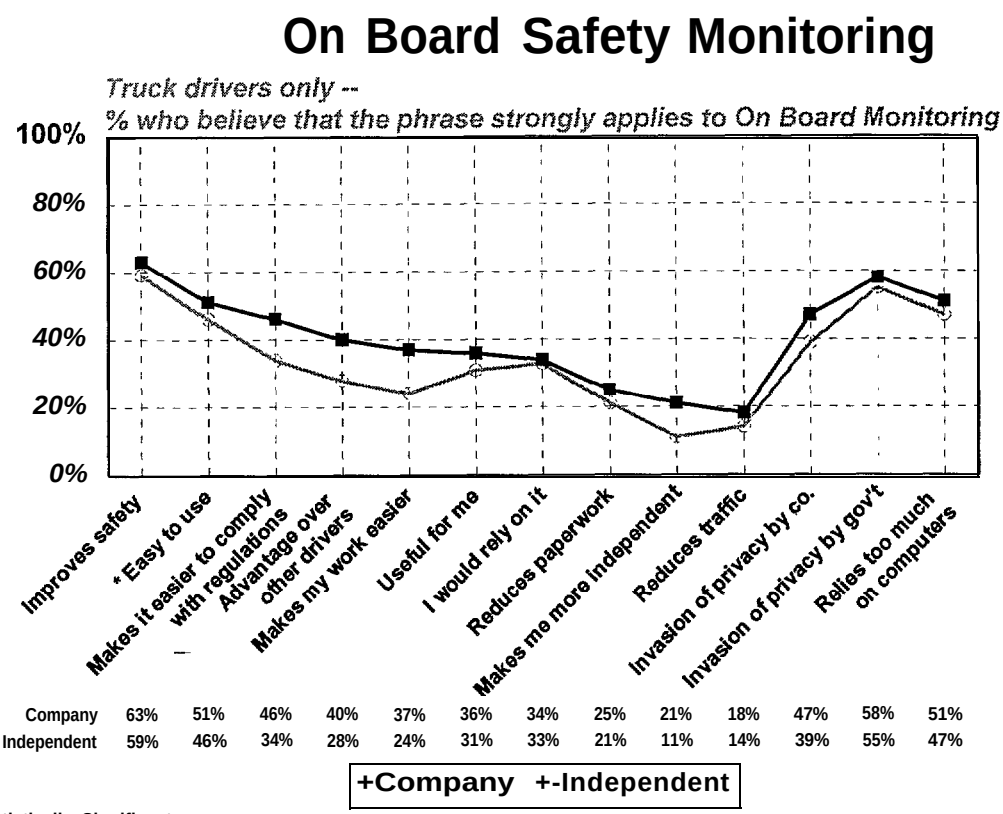


Margin of error = +/- 5.2%
Penn + Schoen Associates, Inc. T163

Across the range of positive attributes, company drivers are more favorable towards On Board Safety Monitoring than independent owner operators. As the following chart indicates, company drivers are much more likely than independents to think that the following attributes strongly apply to On Board Safety Monitoring:

- Makes it easier to comply with existing regulation
- Gives me an advantage over other drivers
- Makes my work easier
- Makes me more independent

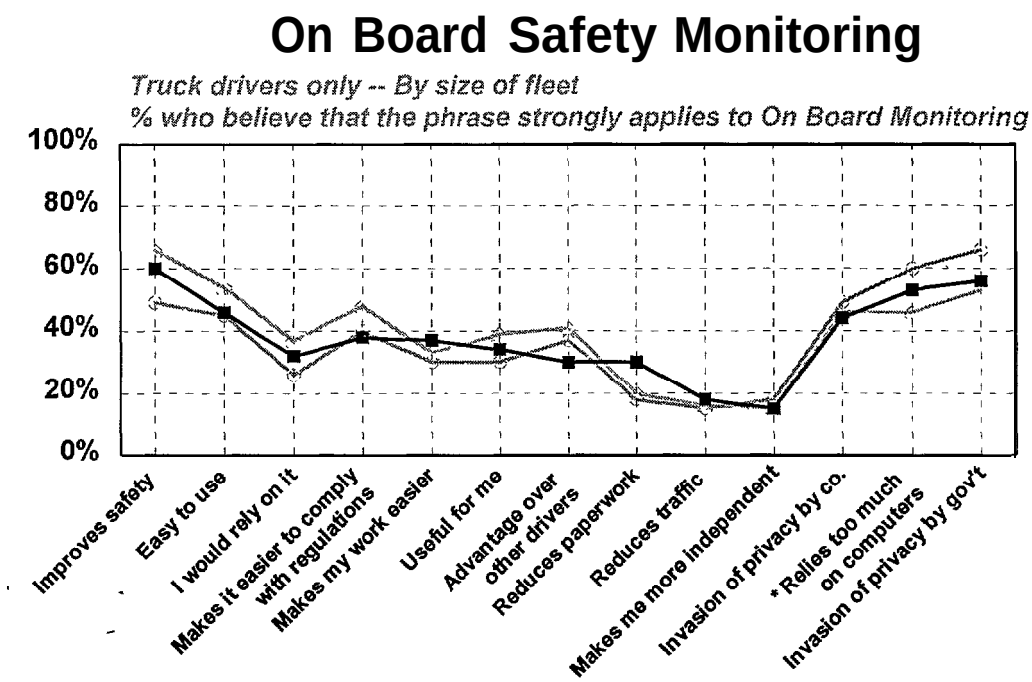
Chart VI.2-- Attribute Ratings -- Company drivers vs. Independent Owner Operators



*** = Statisticaily Significant**
Penn + Schoen Associates, Inc. T163

Variations also existed between drivers depending on the size of their fleet. As the following chart indicates, drivers who are part of a large fleet are more likely than small and medium fleet drivers to think that OBSM would improve safety (66%), be easy to use (46%), would make it easier to comply with existing regulations, and would give them an advantage over other drivers. Small fleet drivers, on the other hand, are more likely than medium and large fleet drivers to recognize the benefit of OBSM in reducing paperwork.

Chart VI. 3 Attribute Ratings -- Small fleet vs. Medium fleet vs. Large fleet



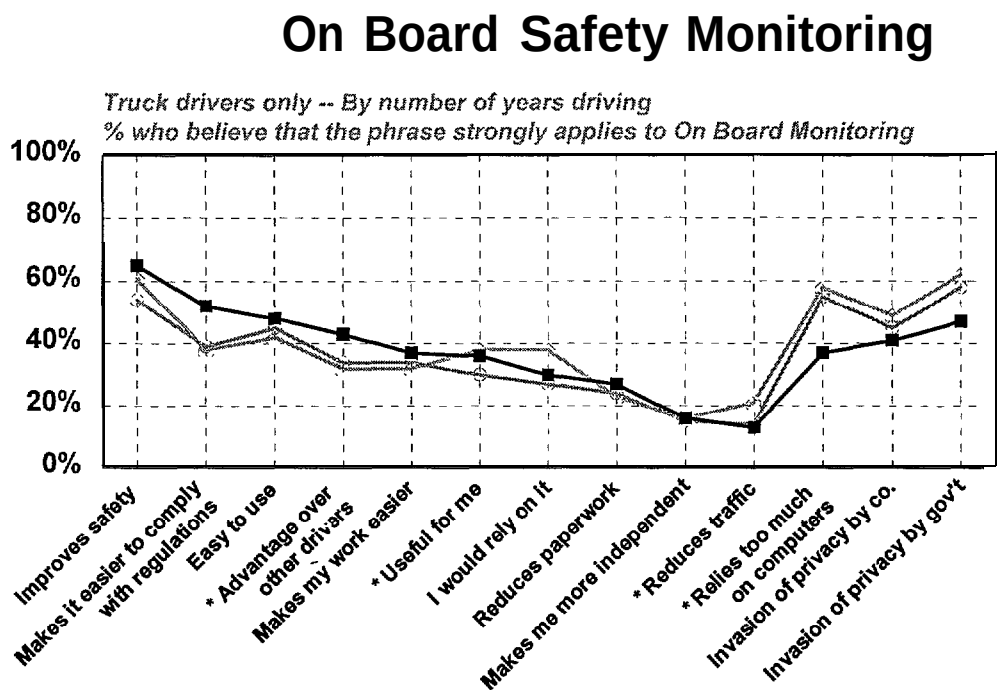
	Improves safety	Easy to use	I would rely on it	Makes it easier to comply with regulations	Makes my work easier	Useful for me	Advantage over other drivers	Reduces paperwork	Reduces traffic	Makes me more independent	Invasion of privacy by co.	* Relies too much on computers	Invasion of privacy by gov't
Small	60%	46%	32%	38%	37%	34%	30%	30%	18%	15%	44%	53%	56%
Medium	49%	45%	26%	40%	30%	30%	37%	18%	15%	18%	49%	60%	66%
Large	66%	54%	37%	48%	33%	39%	41%	20%	16%	15%	46%	46%	53%

+Small -+-Medium +-Large

* = Statistically Significant
Penn +Schoen Associates, Inc. T163

Drivers who have been driving for five years or less are more likely than drivers who have been driving for longer periods of time to think that On Board Safety Monitoring makes it easier to comply with existing regulations (52%), and gives an advantage over other drivers (48%). Drivers who have been driving for more than 15 years are more likely to think that this technological service would work/they would rely on it.

Chart VI. 4 Attribute Ratings --Number of years driving



<5yrs	65%	52%	46%	**43%**	37%	36%	30%	27%	16%	13%	37%	41%	47%
5-15yrs	54%	**39%**	45%	34%	34%	30%	27%	24%	**15%**	14%	55%	**45%**	58%
15+yrs	61%	38%	42%	32%	32%	38%	38%	23%	16%	21%	58%	49%	62%

+<5 yrs -5-15 yrs -15+ yrs

*** = Statistically Significant**
Penn + Schoen Associates, Inc. T163

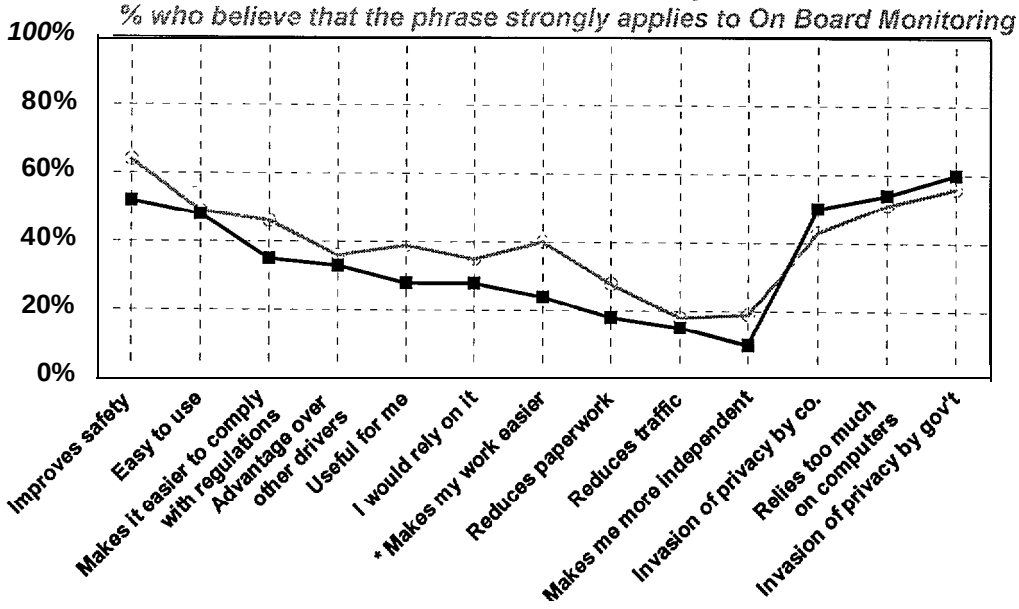
Drivers who do not currently have any new technologies in their vehicle are more favorable towards On Board Safety Monitoring service than those drivers who have already had experiences with new technologies in their vehicles. Drivers without new technologies in their vehicles are more likely than drivers with technologies to think that the following attributes strongly apply to OBSM:

- √ Improves safety
- √ Makes it easier to comply with existing regulations
- √ Useful for me
- √ Will work/I would rely on it
- √ Makes my work easier
- √ Reduces paperwork
- √ Makes me more independent

Chart VI.5 -- Attribute Ratings -- Drivers w/tech. vs. Drivers without technology

On Board Safety Monitoring

Truck drivers only -- By whether or not already has tech in vehicle
% who believe that the phrase strongly applies to On Board Monitoring



	Improves safety	Easy to use	Makes it easier to comply with regulations	Advantage over other drivers	Useful for me	I would rely on it	* Makes my work easier	Reduces paperwork	Reduces traffic	Makes me more independent	Invasion of privacy by co.	Relies too much on computers	Invasion of privacy by gov't
Has tech	52%	48%	35%	33%	28%	28%	24%	18%	15%	10%	50%	54%	60%
No tech	64%	49%	46%	36%	39%	35%	40%	28%	18%	19%	43%	51%	56%

+Has tech -No tech

* = Statistically Significant
Penn + Schoen Associates, Inc. T163

PERCEIVED WEAKNESSES OF ON BOARD SAFETY MONITORING

The majority of respondents perceived certain weaknesses in On Board Safety Monitoring service. As indicated below in Table VI.?, the following are obstacles to user acceptance of OBSM:

- ***More than half of the respondents (57%) feared that On Board Safety Monitoring service would be an invasion of their privacy by the gbvernment***

- ***More than half of the respondents (52%) felt that On Board Safety Monitoring service relied too heavily on computers and too little on* human *judgment***

- ***Forty-six percent of the respondents perceived On Board Safety Monitoring service as an invasion of drivers' privacy by their company***

- ***Only a small number of respondents -- less than one in four -- thought that On Board Safety Monitoring service would reduce paperwork (24%), reduce traffic congestion (17%), or make drivers more independent (10%)***

Table VI. 1--Truck drivers only --Attribute Ratings

Percent who believe the phrase strongly applies
All numbers represent percentage

	Truck	Comp	Indep	Short haul	Long haul	Small fleet	Med fleet	Large fleet	<5 yrs	5-15 Yrs	15+ Yrs	Tech	No tech
invasion of privacy by company	46	47	39	37	46	44	49	46	41	45	49	50	43
Invasion of privacy by government	57	58	55	48	59	56	66	53	47	58	62	60	56
Relies too much on computers	52	51	47	48	53	56*	66*	53*	47*	58*	62*	60	56

** = Statistically Significant*

The following segments of truck drivers, are most likely to perceive the relative weaknesses of On Board Safety Monitoring service:

- ***Company drivers (47%) are more likely than independent owner operators (39%) to perceive On Board Safety Monitoring service as an invasion of their privacy by their company***

- ***Long haul drivers are more likely than short haul drivers to see On Board Safety Monitoring service as an invasion of their privacy by their company (46% to 37% respectively) and are more likely to see this service as an invasion of their privacy by the government (59% to 48% respective/y)***

- ***Medium fleet drivers are more likely than small or large fleet drivers to see OBSM as an invasion of their privacy by the company, as an invasion of their privacy by the government and as too reliant on computers***

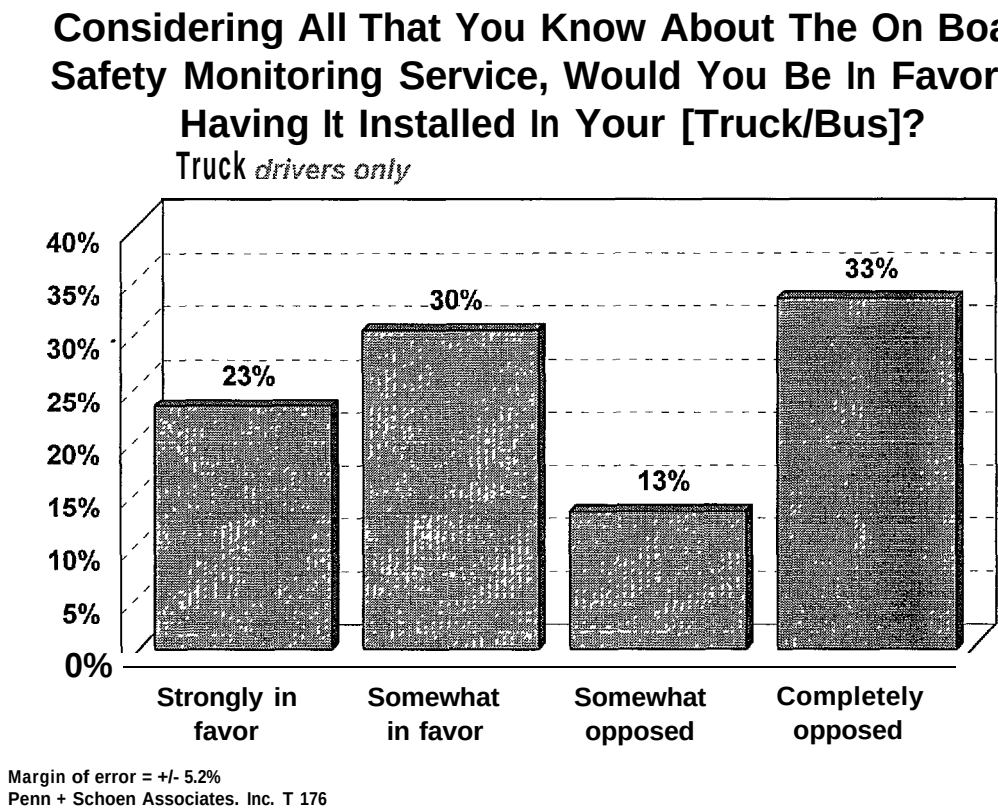
- ***Drivers who have been driving for longer periods of time (5 years or more) are more likely than drivers who have been driving for less than five years to think that OBSM is an invasion of their privacy by the government and as too reliant on computers***

ATTITUDES TOWARDS ON BOARD SAFETY MONITORING

Respondents are almost equally divided as to whether or not they would want to have On Board Safety Monitoring service installed in their vehicle. As the chart below indicates, slightly more than half of the respondents (53%) would be in favor of having On Board Safety Monitoring service installed in their vehicle. Less than one in four respondents (23%) would strongly be in favor of installation.

Almost as many respondents who favor installation of On Board Safety Monitoring are opposed to it. A total of 46% of truck drivers would be opposed to having OBSM installed in their vehicle. In addition, there are more drivers completely opposed (33%) to On Board Safety Monitoring than drivers strongly in favor (23%) of it.

Chart VI. 6-- Favorability and opposition towards use of On Board Safety Monitoring



Desire to use On Board Safety Monitoring varied among subgroups. Company drivers (27%) were more likely to strongly favor installation of this service than independent owner operators (20%). However, the independent owner operators and company drivers were just as likely to completely oppose installation of this service.

Table VI. 2- Favorability and Opposition To Use of On Board Safety Monitoring

Considering a// that you know about On Board Safety Monitoring Service, would you be in favor of having it installed in your Truck?

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	23	53	33	46
Company	27	57	32	44
Independents	20	52	32	48

Drivers who do not already have new technologies in their trucks (56%) were more likely than those drivers equipped with new technologies (49%) to favor installation of OBSM. Conversely, those drivers who were already familiar with technologies were more likely to be opposed to installation of the service than those drivers who do not currently have technologies installed in their vehicles.

Table VI. 3- Favorability and Opposition To Use of On Board Safety Monitoring

Considering all that you know about On Board Safety Monitoring Service, would you be in favor of having it installed in your Truck?

Industry Segment	rongly in favor	Strongly + Somewhat in favor	*Completely Opposed*	*Somewhat + Completely Opposed*
Truck drivers overall	23	53	33	46
Drivers with technology already in truck	21	49	38	52
Drivers with NO technology	24	56	31	44

Drivers who are relatively new to the profession -- have been driving less than five years -- are more favorable towards On Board Safety Monitoring service than those who have been driving for longer periods of time. Drivers who have been driving for fifteen years or more (50%) are one and a half times as likely as newer drivers (less than 5 years -- 35%) to completely oppose installation of OBSM.

Table VI. 4- Favorability and Opposition To Use of On Board Safety Monitoring

Considering all that you know about On Board Safety Monitoring Service, would you be in favor of having it installed in your Truck?

Statistically significant

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor	Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	23	53	33	46
Driving <5 years	24	65	24	35
5 - 15years	18	50	31	49
15 years+	26	50	39	50

Short haul drivers (63%) are more favorable towards installation of On Board Safety Monitoring than long haul drivers (52%) are. Long haul drivers, who were more likely to perceive OBSM as an invasion of their privacy and too reliant on computers, were more likely to completely oppose (35%) installation of the service than short haul drivers (23%)

Chart Vi. 7- Favorability and Opposition To Use of On Board Safety Monitoring

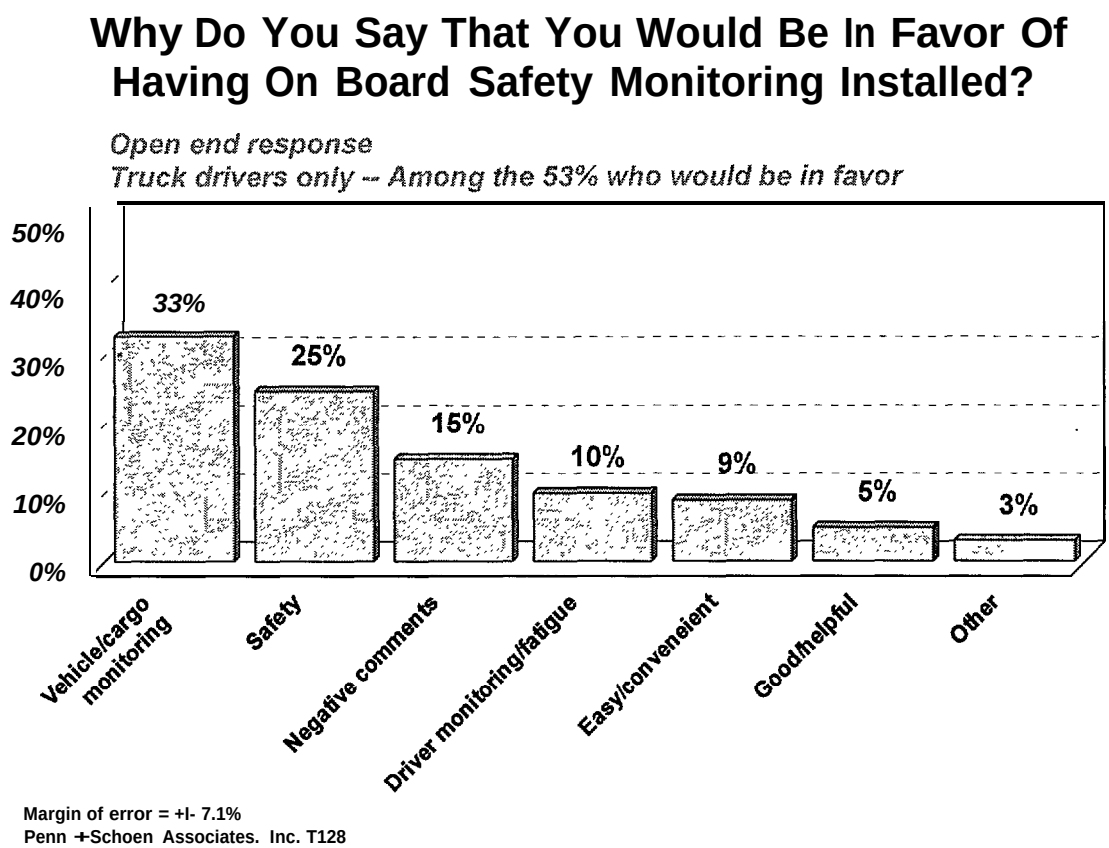
Considering all that you know about On Board Safety Monitoring Service, would you be in favor of having it installed in your Truck?

Industry Segmentation	Strongly in favor	Strongly + Somewhat in favor		Completely Opposed	Somewhat + Completely Opposed
Truck drivers overall	23	53		33	46
Short haul	23	63		23	37
Long haul	24	52		35	48

REASONS ARE IN FAVOR OF USING ON BOARD SAFETY MONITORING

The fifty three percent of drivers who were in favor of installation of On Board Safety Monitoring service were asked in their own words why they were favorable. Favorability towards installation of On Board Safety Monitoring seems to be based on driver perceptions that the system will monitor the cargo and the vehicle (33%) and that it will improve safety (25%).

Chart Vi. 8 -- Open end -- Favorable towards OBSM



The following is a list of verbatim responses as to why drivers are favorable towards OBSM:

- *'Anything that will help improve the industry and increase safety is what we are looking for"*

- *"Can be an asset in order to keep bad drivers off the road. If pulls off tired drivers. But it also relies on a computers and computers are only as good as the person who programs it."*

- *"This is the kind of technology that we need for safety purposes and to make you more efficient,"*

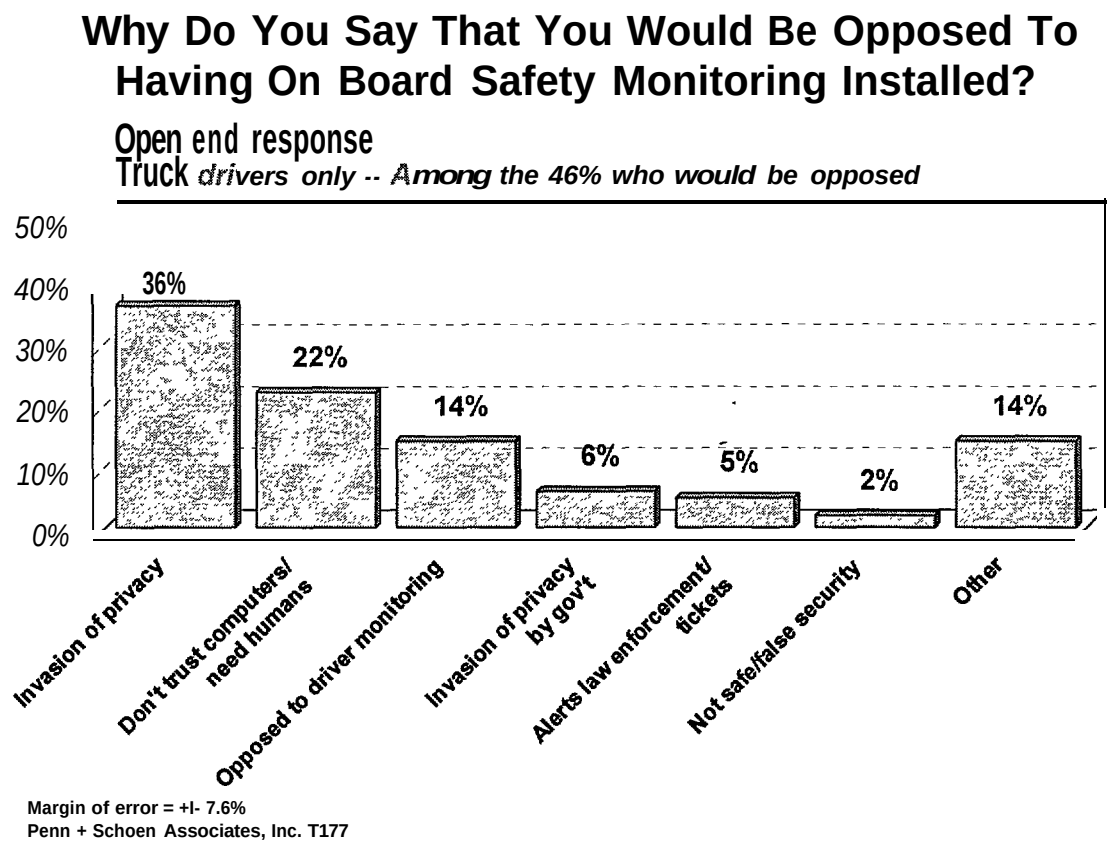
- *"I recently had* an *accident. If I had this it would have to/d me about the tire problems / have"*

- *"Eliminates a lot of people falling asleep. Monitoring cargo is very helpful* -- could let *you know of problems.* Infringes on privacy somewhat, but *something has to be done to stop* all *the accidents"*

REASONS DRIVERS ARE OPPOSED TO ON BOARD SAFETY MONITORING

The 46% of truck drivers who said they are opposed to using On Board Safety Monitoring service were most bothered by the fact that they considered this an invasion of their privacy (36%), they don't trust computers (22%) and that drivers would be monitored within their vehicles (14%).

Chart VI. 9 -- Open end -- Opposition to OBSM



Margin of error = +I- 7.6%
Penn + Schoen Associates, Inc. T177

Drivers offered the following verbatim responses as to why they are opposed to having On Board Safety Monitoring service installed in their vehicles:

- *"Because I know what I am doing, I don't need a computer fo fell me When I am tired"*

- *"I don't like being told when I can or drive by anyone -- especially the government. I know when I* am *too tired to drive -- I know my own limitations"*

- "Relies too *much on* technology and *nof* enough *responsibility on* the *driver"*

- *"Since if* alerts *enforcement personnel if could get you stopped for something very minor. If you've got one tire that's a little bit low, you could get stopped for nothing. It doesn't allow the driver any judgment as to the seriousness of the problem"*

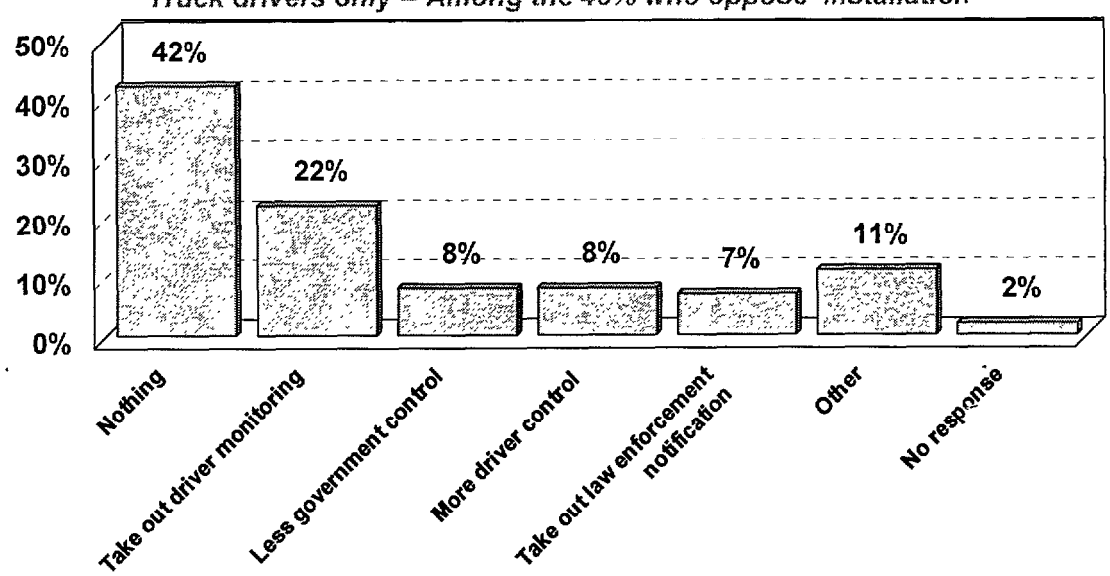
- *"I don' t like a machine telling me what fo do. It's great for dispatch and stuff but something telling me when I go fo shut down and go to sleep -- that's wild, no way. Calling the police is entirely out of the question. Ain't no way. They can send* a *signal to the company -- I'll go for that -- but no* way *to the police. Out of the question. On alertness* and *fafigue -- whaf if* I am up all day unloading and I got a hot load and have *fo be somewhere by the next morning or whatever. This things going to shut me down and I won't be able to make the delivery and I will be out of a job. Its* gonna *cost money. Company would have to* pay *more money because there is a lot of down time. "*

Drivers who are opposed to installation of On Board Safety Monitoring were then asked if anything about the technological service could be changed to make them more favorable towards it. The following chart indicates that drivers would be more favorable towards the technology if the monitoring was not focused on the driver, if the government were not involved and if the information did not go to enforcement personnel.

Chart VI. 10 -- Open end

What About On Board Safety Monitoring Could Be Changed To Make You More Favorable Towards This Technology?

Open end response
Truck drivers only -- Among the 46% who oppose installation



Margin of error = +I- 7.6%
Penn + Schoen Associates, Inc. T179

The following verbatim responses give some indication of what, if anything, about the technological service could be changed:

- **"Can** get **rid** *of* driver **monitor and** *this* **calling** *the* **cops is ridiculous.** *The warning signals are O.K. I like that idea but the rest of if -- I don'f fhink so. if it triggers and only lets me know, that would be better."*

- *"Company should be fhe only people who have access to the information."*

- *"I completely agree wifh monitoring the truck and load safety. I* want *to know if something is wrong -- but don't monitor the driver. "*

- *"Have an override switch and no tattle fale. No memory in computer"*

  Put in more human factors insfead of relying totally on computers."

ROLE OF ENFORCEMENT PERSONNEL

Truck drivers were asked if they would be more favorable towards On Board Safety Monitoring service if enforcement personnel were not involved in the process. As the following table illustrates, more than two-thirds of truck drivers (69%) would be more willing to accept this technology if enforcement personnel were not involved. Independent owner operators (75%) were more likely than company drivers (66%) to accept this technology if the information did not go to enforcement personnel. Similarly short haul drivers (75%) were more willing than long haul drivers (67%) to accept this service if the information did not go to enforcement officials.

Table VI. 5 -- Truck drivers only

Would you be more willing to accept this technology if you knew that the information gathered from the monitoring service would* not *go to enforcement personnel?

	Truck drivers	Company	Independent	Short haul	Long haul
Yes	*69%*	*66%*	*75%*	*75%*	*67%*
No	*29%*	*31%*	*24%*	*23%*	*30%*
Don't know	*2%*	*3%*	1%	*2%*	*3%*

ATTITUDES AND OPINIONS OF MOTORCOACH OPERATORS

Overall, motorcoach drivers were more favorable towards On Board Safety Monitoring service than truck drivers. Across the range of attributes motorcoach drivers were better able to recognize the benefits of this service than truck drivers and were less inclined to think that the negative attributes were strongly applicable.

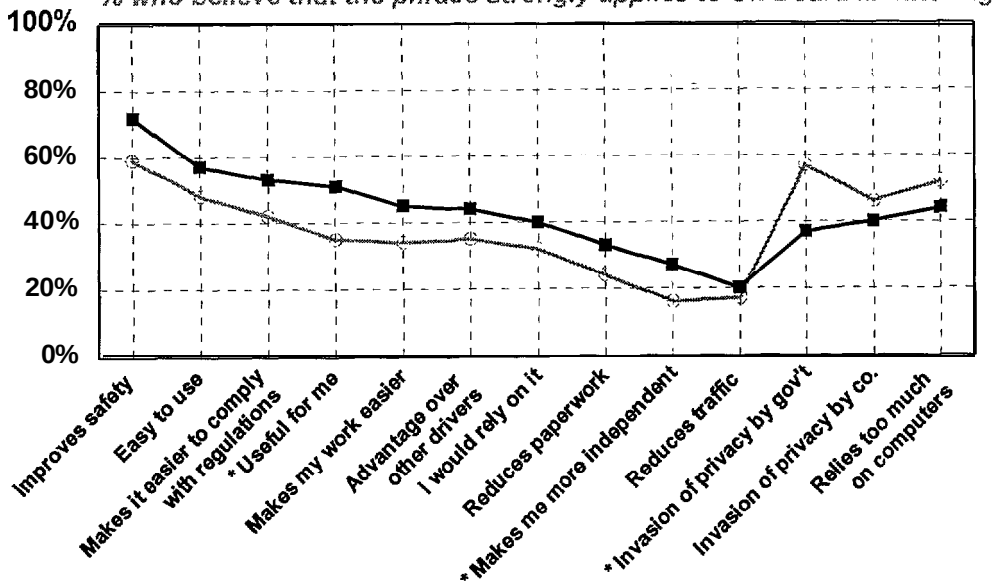
PERCEIVED BENEFITS OF ON BOARD SAFETY MONITORING SERVICE

Almost three-quarters (72%) of motorcoach operators were able to recognize the safety benefits of this service. More than half of motorcoach drivers thought that On Board Safety Monitoring service would be easy to use (57%), makes it easier to comply with existing regulations (53%). In addition, 51% of motorcoach drivers strongly agreed that this service would be useful for them.

Chart VI. 11– Attribute Ratings -- Motorcoach drivers vs. Truck drivers

On Board Safety Monitoring

% who believe that the phrase strongly applies to On Board Monitoring



Motorcoach	72%	57%	53%	51%	45%	44%	40%	33%	27%	20%	37%	40%	44%
Truck	59%	48%	42%	35%	34%	35%	32%	24%	16%	17%	57%	46%	52%

+Motorcoach --Truck

*= Statistically Significant
Penn + Schoen Associates, Inc. T163

PERCEIVED WEAKNESSES Of ON BOARD SAFETY MONITORING

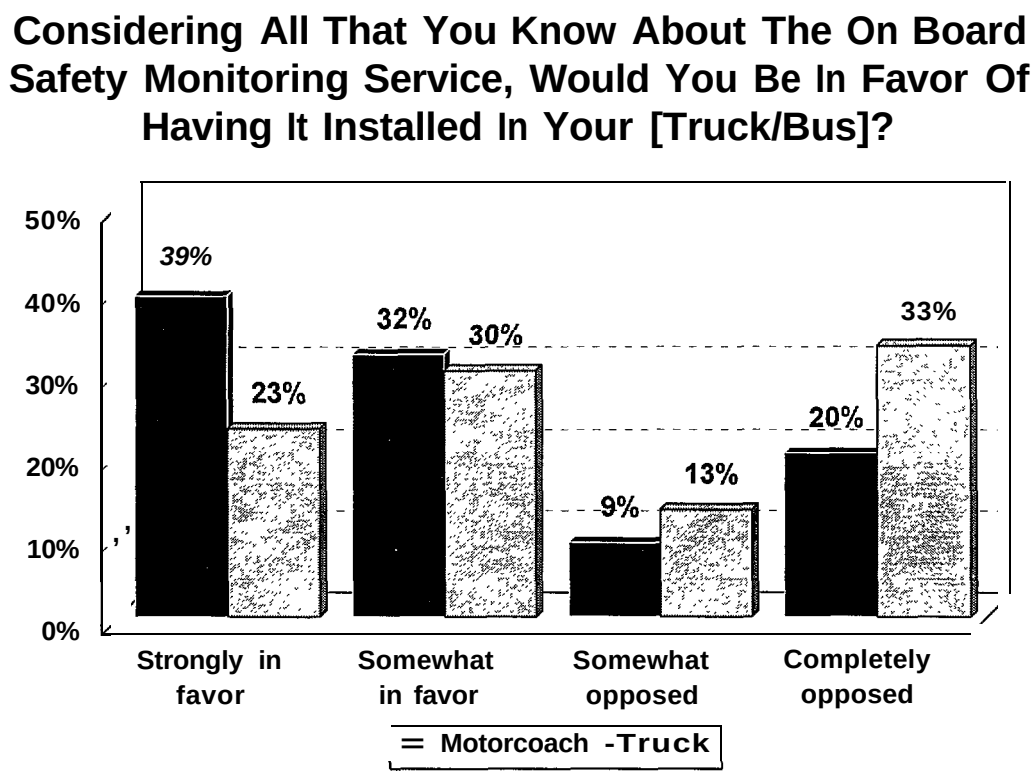
As the above chart indicates (Chart VI.8), more than two in five motorcoach operators thought that On Board Safety Monitoring service relied too heavily on computers. In addition, 40% of motorcoach drivers believed this technology was an invasion of their privacy by their company, and 37% thought that it was an invasion of their privacy by the government.

In addition the technological service was rated poorly by respondents on its ability to reduce traffic (20%) and on its ability to increase the independence of the driver (27%).

ATTITUDES TOWARDS ON BOARD SAFETY MONITORING SERVICE

Motorcoach drivers are more likely to want installation of the On Board Safety Monitoring system than truck drivers. Seventy one percent of respondents are in favor of having this service installed in their vehicles compared to the 53% of truck drivers who were favorable. Twenty nine percent of motorcoach drivers were opposed to installation of this service.

Chart VI. 12-- Favorability and opposition towards use of On Board Safety Monitoring



Statistically Significant
Penn +Schoen Associates, Inc. T 176

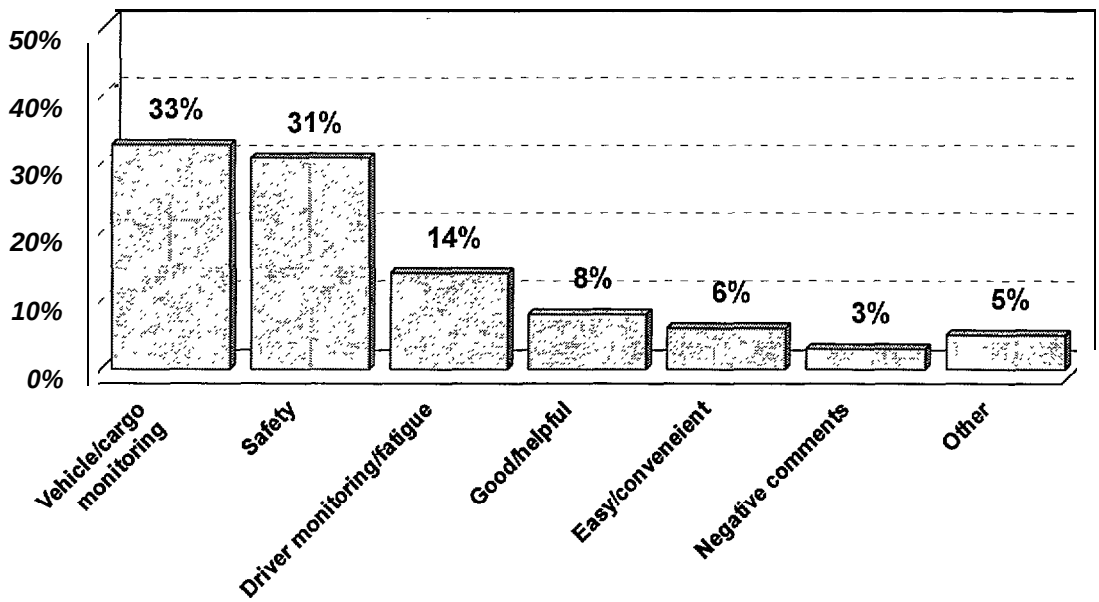
REASONS MOTORCOACH OPERATORS ARE IN FAVOR OF USING OBSM

The 71% of motorcoach operators who are strongly or somewhat in favor of using On Board Safety Monitoring service were asked to describe in their own words why they are in favor. As the following chart indicates, drivers are most favorable towards the service's ability to monitor the vehicle or cargo (33%) and the impact it will have on safety (31%).

Chart VI. 13 -- Open end -- Favorable To OBSM

Why Do You Say That You Would Be In Favor Of Having On Board Safety Monitoring Installed?

Open end response
Motorcoach drivers only -- Among the 71% who would be in favor



Margin of error = +/- 10.5%
Penn + Schoen Associates, Inc. T128

ROLE OF ENFORCEMENT PERSONNEL

When asked whether they would be more willing to accept this technological service if the information did not go to enforcement personnel, 58% of motorcoach drivers said yes and 41% said no. This is relatively less than the number of truck drivers (69%) who said that they would be more willing to accept this service if the information did not go to enforcement personnel.

Table VI. 6-- Motorcoach operators only

Would you be more willing to accept this technology if you knew that the information gathered from the monitoring service would not go to enforcement personnel?

Statistically Significant

	YES	NO	DON'T KNOW
MOTORCOACH OPERATORS	58%	41%	1%