

**Identifying Vulnerabilities and Security
Management Practices in
Agricultural & Food Commodity Transportation**

Submitted To:

**Transportation Research Board
Annual Meeting**

By:

**Rebecca Brewster
President and COO
American Transportation Research Institute
2200 Mill Road
Alexandria, VA 22314**



January 2005

**American Transportation Research Institute (ATRI)
2200 Mill Road
Alexandria, VA 22314
(703) 838-1966
www.atri-online.org**

**ATRI – Georgia
1850 Lake Park Drive, Suite 123
Smyrna, GA 30080
(770) 432-0628**

**ATRI – Minnesota
2277 Highway 36 West, Suite 302
Roseville, MN 55113
(651) 641-6162**

**ATRI – California
3251 Beacon Boulevard
West Sacramento, CA 95691
(916) 373-3534**

ABSTRACT

The political climate following the attacks of 9/11 placed increased pressure on the Federal government to identify and reduce terrorist threats against the United States. While the initial focus was on airlines, attention is now being paid to the transport of people and freight on the nation's highways. Of particular concern is the transport of agricultural and food products, whose vulnerabilities to terrorist attacks have the potential to disrupt the nation's food supply. In response to growing concerns over terrorist activities impacting the food supply chain, the 2001 Federal anti-terrorism budget allotted nearly \$40 million to the United States Department of Agriculture (USDA) to help ensure the safe and efficient flow of this country's food supply.

In an effort to better understand the specific risks and threats facing agriculture/food transporters, the USDA contracted with the American Transportation Research Institute (ATRI) to survey nearly seventeen thousand carriers across the country to identify both vulnerabilities in the food supply chain and the most widely used countermeasures to mitigate those vulnerabilities. ATRI's survey and subsequent analysis revealed vastly differing concerns and countermeasures based on carrier size. One of the most pressing concerns, regardless of carrier size, is secure parking for vehicles hauling foodstuffs. The findings from ATRI's survey will be incorporated into a USDA-sponsored Guidebook for Identifying Security Management Practices in Agricultural and Food Commodity Transport.

INTRODUCTION

Following the September 11, 2001 terrorist attacks, the U.S. Department of Agriculture was asked to identify areas within the food supply chain that were vulnerable to terrorism.

Agriculture and food transport (A&FT) was identified as a major area of the food supply chain to be addressed. Trucks are utilized at nearly every point in the A&FT supply chain – from farm fields to grain elevators and rail yards, from refineries and processing plants to manufacturing centers, from wholesale distribution warehouses to retail centers and grocery stores.

At each level in the U.S. food supply chain there exists potential security weaknesses which could cripple the flow of food products. Terrorism threats by means of physical attack, such as bombs and attacks on buildings, are widely understood by the general public. However, deliberate contamination of the food supply is not as widely recognized nor understood. The integrity of America's food supply is essential to the health and economy of not only the U.S. but the global community as well. Even prior to 9/11, concerns by government officials had been raised surrounding the deleterious effects on the public should terrorists introduce deadly biochemical agents to livestock or crops, or the manufactured goods derived from these commodities.

Unfortunately, the enormity of both the nation's agricultural industry and the U.S. transportation system pose significant challenges for protecting against agri-terrorism or bioterrorism. In an effort to address these concerns, the USDA, as well as other agencies, has tightened security and increased inspection. Despite these efforts the specter of an attack still exists and the chain reaction resulting from an attack could very well weaken the U.S. economy, a secondary motive of many terrorists. Lastly, given the difficulty in detecting and rectifying agricultural- and food-based attacks, as seen during the "Mad Cow" scare in late 2003, it is clear that agri-terrorism is a threat with potentially high consequences.

In an effort to understand the specific risks and threats facing agriculture and food transporters, the USDA contracted with the American Transportation Research Institute (ATRI) to identify vital information regarding specific security issues and concerns. The nationwide survey was distributed to nearly seventeen thousand carriers to identify key vulnerabilities in the food supply chain and to query carriers as to the most widely used countermeasures to deal with security concerns. Ultimately, the data gleaned from the survey will be incorporated into a "Guidebook for Identifying Security Management Practices in Agricultural and Food Commodity Transportation," to be completed by the Agricultural and Food Transporters Conference (AFTC) of the American Trucking Associations (ATA). This paper shares highlights of these collective findings as well as recommendations made to the USDA to better facilitate the safe transport of foodstuffs.

SURVEY OBJECTIVE

The survey had two primary objectives: 1) identify security concerns faced by agriculture and food transporters post 9/11; 2) identify the most widely used countermeasures to mitigate the concerns. Through the survey, USDA hoped to ascertain what guidance, if any, is needed from the Department to help agriculture/food transporters secure the nation's food supply chain.

SURVEY DESIGN AND DISTRIBUTION

The survey was designed to identify agriculture/food transporter security concerns, as well as countermeasures used. A pre-test of the survey was conducted to elicit feedback from both the Delphi Panel, comprised of agriculture/food carriers, and the public sector. The public sector review consisted of feedback and comment regarding the survey instrument by representatives from the Federal Motor Carrier Safety Administration (FMCSA), the Department of Homeland Security (DHS), the Transportation Security Administration (TSA); and the Federal Highway Administration (FHWA).

The final survey consisted of fourteen questions with a fifteenth question asking for carrier name and contact information (voluntary), should ATRI need to follow-up with the carrier for clarification. The first six questions focused on developing a demographic profile of the respondents while the remaining eight questions attempted to elucidate information regarding security concerns and countermeasures.

The survey, the first of its kind to focus specifically on agriculture/food transporter security issues, was distributed using various communication methods, including fax, mail and internet.

Survey Sample

The survey was distributed to 16,743 agriculture/food transporters identified using primarily the North American Truck Fleet Directory. In addition, ATRI distributed the survey through several State Trucking Associations in agriculture-heavy states including: Wisconsin, Minnesota and Missouri. The targeted population excluded carriers of timber and lumber to eliminate non-consumables or commodities that would not provide a high-level conduit for terrorist activity. The survey response rate was 6.2 percent. While the survey respondents may not reflect the overall distribution of agriculture/food transporters operating in the U.S., it is still believed that pertinent information regarding issues facing agriculture/food transporters and the security management practices in place, can still be gained.

Demographic Profile of Respondents

Size

The respondents represented a diverse group of carriers based on size. For purposes of this analysis, carrier size is defined as:

- Very Small- Less than 6 power units
- Small- 7 to 20 power units
- Medium- 21 to 100 power units; and
- Large-Greater than 100 power units

Based on these definitions, 26 percent are equally divided between very small carriers (13%) and large carriers (12.9%), with the remaining 70% split between small (34.6%) and medium (35.7%) size.

Type of Trailers/Combinations Utilized

Survey respondents were asked to indicate all trailer types utilized. Not surprisingly, more than half of the carriers use dry vans, the most widely used on-road trailer type in the trucking industry. This was followed by tank-chemical/hazmat, flatbed and grain hopper (36%, 26.1% and 23.5% respectively). At the other end, less than 8 percent utilized tank-food grade trailers and 10 percent reported using animal/livestock trailers.

Primary Range of Operation

In attempt to determine whether respondents were primarily short-haul or long-haul carriers, the survey provided a range of average haul lengths from which to choose:

- Local – 1 to 50 Miles
- Short Range – 51 to 100 Miles
- Short Range Medium – 101 to 200 Miles
- Long Range Medium – 201 to 499 Miles
- Long Range – 500+ Miles

More than half of the carriers reported average hauls greater than 200 miles (26.3% – long range medium and 27.4% – long range). Only 8.6 percent focus primarily on local travel of less than 50 miles. Fifteen percent report traveling short range while 17.5 percent reported short range medium hauls.

Primary Operation

Respondents were asked to identify their operations as either interstate, intrastate or exempted/farm use only. Additionally, carriers were asked to choose between for-hire and private for operating status. The majority of respondents (67%) indicated their company focused on interstate operations, while one quarter of respondents operates within their state borders. Just two percent of the motor carriers in the sample operate as exempted/farm use, referred to as exempt in the remainder of this analysis. Therefore, over 90 percent of respondents are subject to regulation by state and/or Federal agencies

The breakdown of respondent carriers by operating status was the converse of the trucking industry as a whole. Sixty-four percent of the carriers indicated operating for-hire while the remainder indicated operating as private carriers (28%). According to the 1997 *Vehicle Inventory and Use Survey (VIUS)*, for-hire carriers represent only 23.5 percent of the industry, with private carriers representing 67.6 percent. The respondents in this survey are therefore more likely to be in the core business of transportation rather than agricultural and food commodity production.

Commodities Hauled

Certain foodstuffs and agricultural products represent greater possibilities for terrorist interference than others, so it was important to determine what products were being hauled by respondents. The survey provided a list of primary agricultural and food products from which respondents were asked to select all commodities hauled in their operation. No single category was selected by more than one-third of the carriers, highlighting the diversity of respondents. Twenty-eight percent of respondents further stratified the commodities hauled by indicating specific commodities such as poultry, dairy and produce (Table 1).

Employment Practices

Personnel issues represent a major security concern for all modes of transportation. To better understand how agriculture/food transporters deal with the hiring of drivers, particularly in light of the seasonal nature of agriculture/food transport, the survey queried respondents on the number of drivers employed and the breakdown of company drivers versus owner-operators/leased drivers.

The variance in response to this question was as wide-ranging as the commodities hauled. In terms of number of employees, the range was from one to over 8,000. The average number of drivers employed was 78 with the median at 33 drivers. Twenty-five percent of the carriers had smaller operations, employing less than ten drivers.

An important business decision carriers face is the optimal ratio between employing company drivers and utilizing contractors or owner-operators. Both options provide advantages and disadvantages. The use of owner-operators provides the hiring flexibility needed in an industry as cyclical as food transport. However, there is a certain amount of management control forfeited in the use of owner-operators, which may have implications for security measures.

In total, the carriers surveyed employ at least 83 percent of their drivers, with the remaining drivers either contract or owner-operators. However, in relation to carrier size, differences are manifested: very small carriers employ 20 percent more of their drivers than large carriers (92% versus 72%). Furthermore, nearly 80 percent of the carriers employ more than two-thirds of their drivers. Looking more closely at the carriers in aggregate revealed that more than half (56%) do not utilize contractors or owner-operators in their operation.

RESULTS

The remaining questions, dealing with security concerns and countermeasures, will be reported using the above subgroups as well as in aggregate. A copy of the survey instrument can be acquired by contacting the authors.

Post 9/11 Security Concerns

Survey respondents were asked to identify new security concerns post 9/11. Potential or new security regulation compliance was the most common concern facing agriculture/food transporters (Figure 1). In such a heavily regulated industry, any new regulations could pose undue burdens on carriers. Surprisingly, while most for-hire carriers survive on operating margins of less than 5 percent, it was not the (direct) cost associated with these regulations that carriers found most challenging: only 8.6 percent of carriers indicated concern over the cost of new regulations.

Compliance concerns are more likely to derive from larger industry personnel issues; the U.S. Department of Commerce lists “truck driver” shortages as one of the top ten job shortfalls across industry sectors. Several industry respondents speculated that increased burden on drivers may “force drivers to look for greener pastures.”

Another statistic that bears noting is that 31 percent of carriers that employ at least two-thirds of their drivers are concerned with compliance, whereas 37 percent of carriers that predominantly utilize owner-operators purported this as a concern. While not a large statistical difference, it could be indicative of the elasticity and flexibility that contract drivers and owner-operators have in “churning” through employers (vs. employee drivers).

With regulations and compliance issues being viewed as a non-issue for exempted carriers, it was surprising to find that 43 percent selected this, a greater percentage than either interstate or intrastate (30% and 33%, respectively). Compliance issues also seemed to concern large (35%) and short range (42%) carriers more than their cohorts, very small (25%) and long range carriers (24%).

It is true that cargo contamination and hijacking, two of the top five concerns chosen, have been concerns of carriers for years, albeit for different root causes: accidental contamination, and hijacking for theft purposes. In the wake of recent events and with the ongoing war in Iraq, there has clearly been a heightened specter of another terrorist attack on U.S. soil by both the general public and government.

While a fourth of respondents have “No New Security Concerns” post September 11th, this appears to be a function of carrier size. When examining just large carriers, the frequency of this response drops to 7 percent. Likely explanations for why larger carriers have greater security concerns than smaller ones include greater resources (financial, staffing) and more sophisticated communication systems, allowing them to better identify vulnerabilities and develop security controls. These results also expound on why larger carriers were almost twice as likely to rank theft, tampering and hijacking as probable threats than smaller carriers (less than 20 power units). Perhaps, large carriers recognize the challenge of safely maintaining a large fleet. The more trucks, employees and cargo shipments a company manages the greater the potential to become a target. Thirty-five percent of local carriers indicated no new security concerns while less than 23 percent of long range carriers indicated the same. There did not appear to be a distinction between other carriers.

Likelihood of Security Threats

Carriers were presented with a list of possible terrorist and other security threats and asked to rank each on the likelihood of such an event occurring. Survey respondents perceive the most likely security threat to be associated with rest stops or parking issues, with more than half of all respondents (56%) ranking these issues as presenting a moderate to high likelihood of contributing to a security event (Figure 2).

This does not come as a surprise given the number of interstate commerce respondents (67%) and long-haul respondents (54% over 200 miles); both sectors with high utilization of over-night parking. In ATRI's FMCSA-sponsored "Hazardous Material Security and Technology Survey" which was conducted as part of the National Hazmat Transport Operational Test, the findings revealed that three out of four hazmat carriers expressed concern about secure parking facilities. Furthermore, based on qualitative data gleaned from an open-ended question at the end of this survey, secure parking facilities, both at the terminal and while on the road, are of great importance.

Forty-one percent of respondents believe there is a moderate to high likelihood of an event occurring as the result of transporting chemicals and fertilizers. This finding also mirrors the characteristics of the survey population, with 36 percent of respondents utilizing chemical/hazmat tanks and 25 percent of respondents transporting fertilizers, chemicals and fuels. One very important finding is that more than eighty-five percent of respondents believe that contamination, whether deliberate or accidental, represents a moderate to low security threat (i.e. perceived likelihood) – even though it represents one of their greatest security concerns. Another related explanation is that only 7.8 percent of respondents indicated that they use food-grade tank trucks – which represent the likely target of contamination. The end result of these particular findings is that many carriers recognize the high consequence of deliberate contamination of agricultural and food products, but do not believe it is easily accomplished or likely that their (non-food-grade) operations would be targeted.

It is interesting to note that, on a weighted basis, very small carriers were more likely to rate contamination a high concern (4.3% accidental; 8.5% deliberate) than their larger counterparts (1.6% accidental; 4.7% deliberate). This possibly reflects the resources available to larger carriers (equipment, personnel, financial) that would help prevent contamination versus the limited resources available to very small carriers. Across all carrier sizes, deliberate contamination (versus accidental) was the greater perceived threat.

Overall results show 90 percent of respondents perceiving personnel-based issues as a moderate to low threat. However, carriers that outsource greater than 66 percent of drivers were more likely to view this issue as a high concern, versus carriers that employ the majority of their drivers (4.3% and 2.9%, respectively). This is likely explained by the previously described perception that carriers have more "control" over employees versus contract workers (or alternatively full-time employees are more dedicated than contract personnel). [Please see Figure 2]

New Security Programs Initiated Post 9/11

The survey asked respondents if the company had initiated new security programs since 9/11, and if so, to identify which driver-, equipment-, cargo- and facility-based measures had been

adopted by the company. Nearly two-thirds of respondents have initiated new security programs or activities since September 11th.

The results further indicate that investing in new security programs is directly correlated with carrier size. As an example, when comparing carrier size, the percentage decreased from a high for large carriers of 86 percent to a low of 42 percent for very small carriers. Similar to the previous discussion on contamination concern levels, this may suggest a correlation between the resources available to larger carriers versus smaller carriers.

The analysis shows that many carriers regard their employees as the most important security asset (Table 2). More than half (52%) of the respondents encourage both driver and employee awareness and 36 percent of the carriers have invested in improved security training. In recognition of the value of driver awareness and security training, the Transportation Security Administration (TSA) of the Department of Homeland Security (DHS) recently awarded more than \$19 million to the American Trucking Associations to expand and re-direct the trucking industry's Highway Watch Program for security intelligence. The basis of this program is to utilize the skills and resources of more than 400,000 truck drivers to help identify suspicious activities and report them immediately to authorities.

The amount of money allocated to training has often been a function of carrier size. This holds true for this survey population as well. While 36 percent of all carriers combined have expanded their security training, this figure increases substantially to 65 percent for large carriers and drops to only 17 percent for very small carriers. It appears that smaller carriers, most likely with limited financial resources, are less likely to invest in training.

Motor carriers as a whole typically operate within very narrow profit margins, generally five percent or less. Therefore, adoption of new security programs and measures must provide a positive return on investment. The frequency of carriers upgrading communication methods (i.e. cell phone, pager, wireless internet, etc.) ranges from a low of 23 percent among the very small carriers to a high of 36 percent among large carriers, in part due to broad price range and flexibility.

Tracking technologies have an obvious security benefit. However, equipping trucks with such technologies can represent a significant cost for a carrier. To equip a truck with a complete satellite tracking and communication system can cost upwards of \$1,200 per truck, plus any additional subscription or usage fees. Noticeably, in comparison to other methods listed on the survey, the adoption rate for tracking technologies remained relatively low, and a direct function of carrier size. Large carriers are 10 times more likely to have wireless tracking systems in place than very small carriers (2.3%). Not surprisingly, long-range carriers (15%) utilized this technology approximately five times more than local carriers, clearly demonstrating a function of need.

RFID tags, smart cards and E-seals are even newer technologies on the market and adoption remains limited, with less than 3 percent of carriers who have initiated new security systems utilizing these technologies.

Overall, carrier adherence to voluntary guidelines from Federal agencies, either from the Department of Homeland Security (DHS) or USDA's Food Safety and Inspection Service (FSIS), was relatively low. Very small carriers listed DHS & USDA 5.3 and 3 percent, respectively. More than 14 percent of exempted carriers selected USDA/FSIS's guidelines. This is likely the result of these carriers having agriculture as their primary business, thus having greater familiarity with any USDA guidelines or regulations set forth.

In looking at facility-based measures, the most utilized method was lighting (41%), followed by fencing (24%). While less than 6 percent of carriers had contracted private security guards, most likely due to cost, 18 percent had asked for increased patrol by local authorities. Carrier size clearly affected what additional facility measures were taken, with the frequency rates being closer for the least expensive security measures than the more expensive ones.

Estimated Cost of New Security Measures

After indicating new security programs or activities initiated, respondents were asked to estimate the total cost for implementation. Carriers estimated the cost for the above security measures to be anywhere from as little as \$100 to over \$100,000. Nearly 70 percent of respondents report spending less than \$10,000. On average, spending was approximately \$22,000 with the median at \$5,000. Once again, carrier size plays a role in determining the amount spent on security, with small carriers averaging \$14,000 and large carriers spending in excess of \$50,000 on security improvements post 9/11.

Despite average spending of \$22,000, only 10 percent of carriers indicated that they had eliminated security programs or activities due to cost. Looking specifically at the carriers who did indicate dropping programs due to cost, the average investment was \$10,000 more than the overall carrier average. Of the carriers that discontinued programs, 42.6 percent were small carriers and 35.2 percent were long-range carriers. For-hire carriers (63%) were more likely to eliminate programs due to cost than private carriers (33%).

KEY FINDINGS & RECOMMENDATIONS

Finding – More than half of all respondents provide interstate operations with average shipment hauls that exceed 200 miles in length. By design, these hauls may be more vulnerable since shipments are managed solely by the driver and trucks are often parked in unattended rest stops and parking lots.

The results further indicate that agriculture/food transporters believe that security events are most likely to occur at rest stops and overnight parking.

Recommendation – The USDA should focus more attention on the en-route vehicles and related services and facilities. Warehouses and terminals ostensibly provide more visibility and security, i.e. reduced vulnerability, than en-route shipments. A likely strategy would be to work with the US DOT and states to improve or create security policies, programs and/or facilities.

Finding – Two-thirds of survey respondents are classified as “for-hire” carriers, with slightly more than one-quarter being private fleet operators. Anecdotally, for-hire carriers have considerable experience in transportation, but less understanding of agriculture/food industry issues. It is not apparent from the data whether private fleets are more or less knowledgeable of agriculture/food security transportation issues.

Recommendation – The Research Team proposes that the USDA conduct a vulnerability assessment of agriculture/food sectors to better understand the level of security awareness and preparedness.

Finding – The majority (80%) of truck drivers are company employees. It is generally presumed that driver employees are more stable and committed, and therefore present fewer security concerns. However, in some sectors of the over-the-road truckload industry, driver turn-over rates exceed 100 percent annually – making this conclusion somewhat suspect. Furthermore, “driver/employee security” concerns were among the top five listed by respondents, and “driver fraud” was among the top ten.

Finding – The top three areas of security focus and investment are human-based solutions: driver awareness, security training, and improved communications. These low-tech approaches appear to offer “quick-response” opportunities for carriers, although the efficacy of these programs in comparison with technology-based solutions is yet untested.

Recommendation – Driver and employee security programs should be considered a “low-hanging fruit” by the USDA. Programs to educate and train drivers could provide a quick and positive return on investment for the USDA. While truck driver training is typically the bailiwick of the US DOT, the issues and concerns that are unique to agriculture/food security make the USDA an appropriate oversight agency. In addition, enhanced communications and outreach efforts would supplement existing carrier programs. The USDA should incorporate a feedback or evaluation function into all new programs to ensure that the efforts are successful.

Finding – “Compliance concerns” were the single largest security concern of the agriculture/food industry; this is an extremely common finding among security research programs focused on private sector operations. It also raises many concerns about the commitment and tenacity that operators may or may not bring to anti-terrorism efforts. This concern is far more prevalent with larger carriers since per-vehicle compliance costs could result in substantial new investments.

Recommendation – Since “compliance” implies mandated security regulations, security programs that are packaged as “voluntary” would likely reduce potential carrier concern and frustration. Based on research findings of the FHWA-sponsored Electronic Supply Chain Manifest field test, voluntary programs that offered dual efficiency and security benefits had the highest acceptance and value ratings.

Finding – Cargo contamination was the second highest concern of agriculture/food carriers, but much lower on the perceived probability of an event occurring. Nevertheless, half of respondents indicated that deliberate contamination had at least a moderate probability of occurrence. Small carriers ranked “contamination” two to four times higher in concern and probability than large carriers, which likely intimates the differential in resources that different sized carriers can bring to the security equation.

Finding – Overall, smaller carriers have the greatest concerns, the fewest resources, and the smallest post-9/11 security investments. This presumes that threats and vulnerabilities may be greatest for small carriers.

Recommendation – While it is more challenging to target small carriers, USDA should focus some of its attention and resources on reaching this sector of the industry. Outreach at the state level is typically the most efficient method of reaching small carriers. An effective program consideration might be to create an online resource center that can also provide ISAC-like security support for registered users.

CONCLUSIONS

This study provides an enhanced view of issues and concerns that face agriculture/food transporters on our nation's highways. While creating a profile of the agriculture/food transportation industry was not a direct objective of this study valuable insight was gained. Overall, the survey shows that agriculture and food transporters do recognize the new security realities post-September 11th. Their greatest security concerns include cargo contamination and the possibility that parking and rest stop issues could lead to a security breach. However, carriers feel their biggest concern rests in complying with myriad new security regulations.

As has always been the case in the trucking industry, cost and return on investment have a direct impact on adoption of new policies, programs, and technologies. Larger carriers, generally equipped with greater financial and personnel resources, are more likely to experience faster and more thorough adoption rates of new policies, programs and technologies than are smaller carriers.

Where USDA can offer guidance to agriculture and food transporters on security improvements that cover a broad spectrum of costs and implementation issues (from low-tech, low-cost on up), it appears that carriers of all size and operating status will be receptive. However, it is important to note that, with the concern over compliance, what is offered by USDA should be in the form of guidance and not regulation.

ACKNOWLEDGEMENTS

ATRI would like to acknowledge the research sponsor, the United States Department of Agriculture, and specifically, Barbara Robinson and John Batson of the USDA Office of Transportation and Marketing Programs for their guidance throughout this research.

ATRI also acknowledges the members of the Agricultural and Food Transporters Conference of the American Trucking Associations for their participation on the research Delphi Panel.

LIST OF TABLES

Table 1 Commodity Transported

Table 2 New Security Measures

LIST OF FIGURES

Figure 1 Concern/Probability Level of Security Issues

Figure 2 Likelihood of Event Occurring

TABLE 1 Commodity Transported

<i>Commodity</i>	<i>Percent</i>
Animal Feed	32.6
Processed Foods	28.8
Bulk Beverages-Milk/Juice	25.4
Agricultural Fertilizers/Chemicals/Fuels	24.6
Other Agricultural Products	21.9
Other Prepared Foodstuffs/Fats/Oils	19.4
Cereal Grains	15.9
Meat, Fish, Seafood and their Preparations	13.6
Alcoholic Beverages	11.1
Live Animals & Live Fish	8.0

Total does not round to 100 due to multiple selections

TABLE 2 New Security Measures

<i>Driver/Equipment/Cargo-Based Measures</i>	<i>Percent</i>
Driver Awareness	51.8
Improved Security Training	35.9
Communication Upgrade	33.2
Background Checks	32.1
Cargo Seals	29.8
Equipment Checks	24.7
Parking Restrictions	23.7
Locks (Kingpin, etc)	18.6
DHS Guidelines	18.4
Tracking Systems	10.6
USDA/FSIS Guidelines	8.2
Lock Downs	3.4
E-Seals	2.0
Smart Card	.8
RFID Tags	.3

Security Concerns

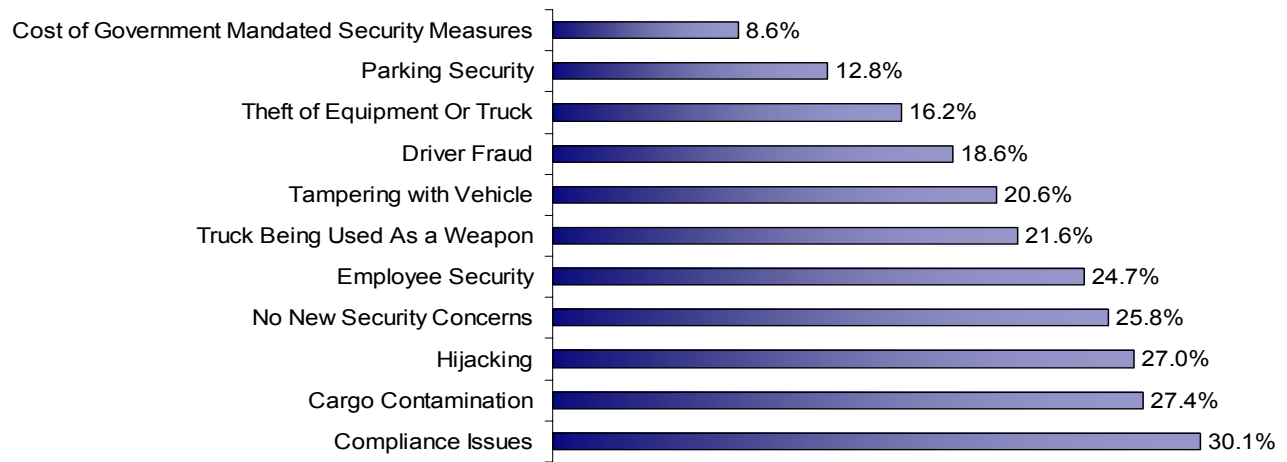


FIGURE 1 New Security Concerns Post 9/11

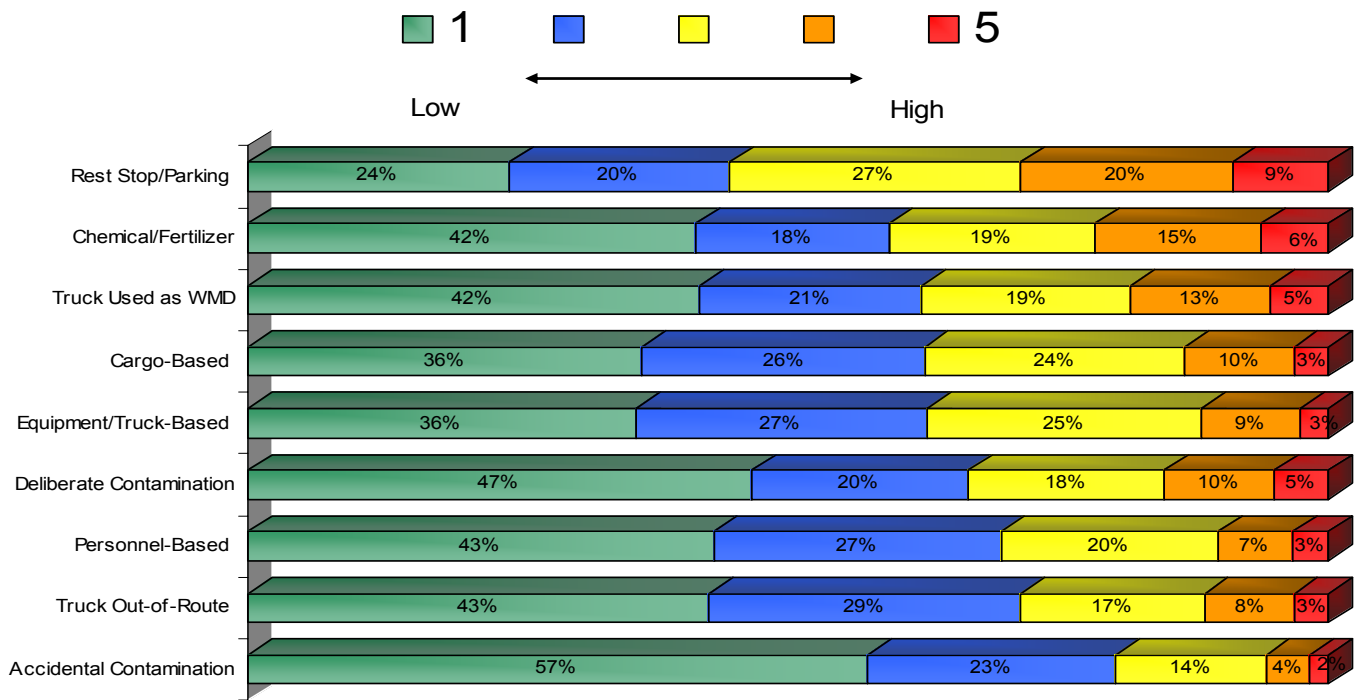


FIGURE 2 Concern/Probability Level of Security Issues