Waking a Sleeping Giant: Obstructive Sleep Apnea and Trucking

White Paper prepared by:
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The Problem

The imminent problem facing the trucking industry is the health of its commercial drivers. With health issues being prevalent, many drivers have developed some degree of sleep apnea. To fully understand the dynamic pattern of a driver's lifestyle, it is important to explain the past 30 years inside the trucking industry. Legislation and deregulation have changed the paradigm inside the industry. With the conception of deregulation in the early 1980's, the Truck Load (TL) sector of transportation was created. The Motor Carrier Act of 1980 deregulated the trucking industry and irregular route trucking was up and running. The irregular route TL sector created a system that omitted the use of many break bulk terminals. Irregular route TL created an environment of uncertainty for the driver. Their routes were no longer fixed or constant. Prior to deregulation, most drivers picked up and delivered to the same customers on a daily or weekly basis. Drivers could predict their home time and thus predict when and where they slept. TL drivers do not know where or when their next dispatch is going to originate or terminate. Since many of the Truck Load carriers were non-union; the traffic industry saw some freight patterns switch from Less Than Truck Load (LTL) to Truck Load due to lower rates. Truck Load drivers are paid per mile while LTL drivers receive hourly compensation. This pay pattern motivated TL drivers to grab food that was quick and convenient. Drivers chose to run long hours without rest to increase their earning potential. With Truck Load, the same driver picked up at the shipper and did the line haul to the final consignee. Irregular-route TL created unstable sleeping habits for many drivers. Since their schedule was irregular, every day brought new sleeping times. Irregular routes also forced drivers to spend more time away from home and created an unhealthy lifestyle. Since the early 1980's, long haul drivers have been forced to eat in their truck or purchase an unhealthy meal at a truck stop. Spending weeks or even months on the road forced many drivers to adapt unhealthy eating habits.

With the creation of the fast food industry, professional drivers were not excluded from social obesity. Several truck stops included fast food chains in their buildings to make eating convenient. While fueling or showering, drivers would pick up something fast to meet their hunger needs. In order to stay up long hours, many drivers smoke and eat junk food to ease road boredom. The daily environment of an over the road driver can be lonely and mundane. Eating and smoking tend to alleviate some of the anxiety caused by being away from home.

It has now been determined that drivers do not have normal sleep patterns and healthy diets due to uncertainty in their schedules. When adding the lack of or non existent exercising patterns, this formula equals early death due to medical conditions such as diabetes, cancer, heart disease and sleep apnea. The average life span for a TL driver is equivalent to a Haitian male. The average life span for a male in one of the world's most economically challenged countries is 60 years old. Most TL drivers deprive themselves of years of living due to their unhealthy life style.

The real problem the trucking industry is currently facing is sleep apnea. This disorder is caused by obesity and irregular sleeping habits. In 2007, the American Dietary Association found that 86% of the truck drivers surveyed were overweight, of

which 66% were considered obese. The reason for the large number of overweight drivers is due to a lifestyle of inactivity, poor eating habits, and difficulties accessing healthcare. Research shows 28-42% of all over the road truck drivers have obstructive sleep apnea (OSA). A condition now well-established as a cause of crashes and other safety related issues. New legislation is expected that will possibly mandate the screening and treatment of all drivers who suffer from OSA. Compliance, the act of being able to prove that drivers are using their CPAP breathing treatment devices, will be a critical part of the solution for motor carriers. A CPAP (Continuous Positive Airway Pressure) is a ventilation device that blows a gentle stream of air into the nose during sleep to keep the airway open. In order to mitigate the carrier's legal risks; they must show proper treatment for their drivers' sleep apnea. This documented data must be easily accessed and measured so the carriers can show the Department of Transportation proactive measures are taking place to address and correct their drivers' sleep apnea. ACS, a Xerox company, has developed in partnership with a leading provider of OSA education, screening, testing, and treatment to design and build an end-to-end sleep apnea diagnostic, treatment and compliance network for transportation. Development and deployment work is already underway. This technology will be discussed later in the document.

Confirmation

Before sleep apnea's existence is proven with educated data it is imperative to understand how sleep apnea is diagnosed. A diagnosis is determined by a physician and confirmed by polysomnography inside an accredited sleep lab. During a nocturnal polysomnography test, a driver is hooked up to equipment that monitors their heart, lung and brain activity, breathing patterns, arm and leg movements, and blood oxygen levels while they sleep. The reports are then analyzed by a sleep expert to determine the severity and treatment of OSA. A full-night study should be done unless a split-night study is approved. Most severe cases of OSA can be identified within two hours of testing. Many trucking companies are identifying and choosing credible sleep labs to perform sleeping tests to provide adequate medical assistance to their employees.

In order to create credibility, the sleep apnea epidemic must be proven with quantitative analysis. The University of Pennsylvania performed a random sample of 4,826 CDL drivers within a 50 miles radius of the university. The results of the study revealed that 17.6 percent of CDL holders had mild sleep apnea, 5.8 percent had moderate sleep apnea, and 4.7 percent had severe sleep apnea. With a sample size this large, the study holds credibility. So, in order to get an overview of this epidemic; it is important to look at an aggregate view of the entire populous of professional drivers. According to OOIDA (Owner Operator Independent Drivers Association), there are an estimated 1.8 Million Class A CDL holders. Given all previously stated data approximately 500,000 to 756,000 drivers are affected by OSA.

Due to a large populous being identified with some level of sleep apnea, it is important to look at the ramifications of this data. Research uncovered commercial drivers travel over 128 billion miles per year. In 2005, there were 5,000 fatal crashes and another 82,000 injury accidents. With the confirmed data; approximately 1,500 fatalities and 24,600 injuries were caused by OSA. For every 26 million miles traveled, a fatal

crash was reported. When assessing this data, one can deduct that drivers are safe when operating under normal conditions. However, with many drivers becoming more susceptible to OSA; it is important to design programs that will assist in saving an additional 1,500 lives per year. The proven statistical data has led the Federal Motor Carrier Safety Administration (FMCSA) to possibly introduce legislation that will ask carriers to test drivers who show OSA symptoms. This possible legislation has been promoted by medical review boards studying sleeping habits on commercial drivers. To carriers, this quantitative analysis is real and thus the reason so many carriers are taking a pro-active stance on measuring and managing any safety risks promoted by OSA. Accidents that are linked to sleep apnea can be economically devastating to a motor carrier. There is a social responsibility carriers must uphold as a responsible business. Most motor carriers take safety very seriously. Every life is important and all pro-active safety measures must be analyzed and implemented when over 128 billion miles are traveled yearly.

Additional Problems

At this point, the sleep apnea or OSA dilemma has been explained and proven quantitatively. However, the ramifications of this disorder could possibly be felt by every American citizen. How is this possible? The trucking industry currently is experiencing a severe driver shortage due to an improving economy and shrinking truck capacity. Some experts believe there could possibly be a shortage of 400 thousand drivers by 2012. While other studies show a 100 thousand shortage by 2014. No matter which projection is accurate; the American economy is heavily dependent on an efficient supply chain. Over 70 percent of all products that are moved inside the US depend on motor carriers. It is the most expeditious mode of transportation when considering economic costs. Without trucks and drivers to deliver products inside the supply chain, many sales could be negatively impacted. When products are not on the shelves, they cannot be purchased and thus missed sales could have serious negative ramifications on companies' revenue projections. Opportunity costs and product prices will rise without enough drivers to make deliveries. A serious driver shortage will create higher transportation costs. These costs will then be passed to the final consumer.

Many drivers learned how to drive a truck in the military. There are three imminent problems that warrant further discussion. The first problem is no current military draft. Yes, a military exists, but a voluntary military reduces the number of future potential drivers. The second issue is many of the baby boomers, who learned how to drive a truck while fulfilling their draft obligation, will be retiring soon. The average driver age for most fleets is approximately 45-50 years old. With health issues becoming more prominent with age, many drivers will be forced to retire early. The final problem discussed is one of familiarity. Health issues coupled with Comprehensive Safety Analysis (CSA) 2010 could force 10-20 percent of the current driver pool from the industry. In order to understand the current dilemma from a macro view, CSA 2010 will be defined. CSA 2010 is a new FMCSA safety program to improve large truck safety and ultimately reduce crashes. It introduces a new enforcement and compliance numeric model that allows FMCSA and its law enforcement partners to contact a larger number of

carriers earlier in order to address safety deficiencies before crashes occur. Drivers and motor carriers will be given a numeric score. The scale will start at 0 and end at 100. The higher the driver or carrier's score the larger the risk. The driver's score will be incorporated into the carrier's aggregate numeric safety rating as well. Carriers will not be able to hire high risk drivers due to potential accidents and weak safety rankings. Hiring high risk drivers is a legal gamble that most carriers are not willing to take. Carriers will need to mitigate their risks by hiring drivers who receive a low CSA 2010 score and have a proven track record.

Retaining the current driver pool is an interest to everyone. As previously mentioned, the US economy depends on the American driver. There are several negative variables that are pulling against the current commercial driver pool. To reiterate, diet, health, legislation and sleep apnea are just a few. The importance of an efficient supply chain has been defined. It is imperative to use new innovation and technology to assist drivers with their medical challenges. Pro-active systems and measure must be put into place to assist drivers with their health issues. An upcoming section will introduce new and unprecedented technology created by ACS Expedited Solutions, a Xerox company. This invention will evolve around managing and distributing data so drivers can receive the proper sleep apnea treatment. This technology is easy to use and offers a quick means of distributing and reporting sleep study results.

The Basic Solution

The basic solution to sleep apnea is early detection, treatment and education. However, with over 1.8 million commercial drivers serving 50 states in the US; it is logistically challenging to gather and manage this data. The industry would need a tangible network that is already established so data can be captured, uploaded and managed. The following steps would be an adequate solution:

1. Truck drivers will get screened for sleep apnea by their employers at a credible sleep lab.
2. Drivers found to have sleep apnea will be required to receive medical treatment.
3. Carriers will have to ensure their drivers with sleep apnea are taking their treatments.
4. Drivers receiving treatments will be required to remove data from their CPAP and upload the data on a device which would transfer the results to a sleep lab.
5. A receipt will be printed from the printer located next to the computer giving the driver proof of their upload.
6. The data will then be centralized to distribute data to the driver, carrier, and physician. This data must be transparent so all parties can manage and document the findings.
7. The data will have the ability to be shared and documented through a web-portal. The web-portal will provide substantiated analytical proof of compliance that the driver is receiving proper medical attention for their sleep apnea.

With these seven steps, the drivers will be able to prove they are receiving medical help for their sleep disorder. The key would be making the process easy and quick. A complex system will not be accepted by the commercial driver. The solutions must be simple and easy to follow, so the driver does not become frustrated and discontinues treatment.

The basic solution for documenting treatment will need to be a system that provides all of the proper data. Carriers must be able to prove, without a shadow of a doubt, their drivers are receiving efficacious treatment. The legal ramifications can be disastrous should an accident occur with a driver suffering from OSA. Most fatal accidents can cost the carrier millions of dollars in legal fees and punitive damages. Sleep apnea is a risk that carriers cannot take due to economic and social damages. The end solution needs to be affordable as well. Since profit margins are minimal in the trucking industry; the solution must be able to be absorbed in the financial operating system. This solution must be accessible and affordable.

ACS Expedited Solutions' Answer

ACS Expedited Solutions, a Xerox company, is a Fortune 150 company with numerous data and intellect resources. Expedited Solutions has been providing answers to the trucking industry for over two decades. ACS TripPak SERVICES is the recognized leader in business process improvement, imaging & data capture/entry, enterprise content management, safety and compliance and outsourced IT solutions in the truckload and less than truckload market segments. Our menu of services and solutions deliver increased cash flow, lower costs, and improve efficiency to over 1,000 leading companies today. ACS Expedited Solutions provides a number of recognizable brands and back office services to the trucking industry such as TripPak SERVICES, ACS Advertising, Command Solutions, TripPak RAPIDLOG, CSAdvantage, driver compliance and consulting. With a track record for reliable, sustainable performance, ACS reflects the energy of excellent people and superior products, delivering improved productivity and bottom line profits for their clients.

ACS has a solid answer for managing sleep apnea data. ACS teamed up with a leading provider of OSA education, screening, testing, and treatment to design and build a system that would help drivers manage and treat their sleep disorder. ACS' OSA solution partner provides a full scope of services to help companies raise awareness and understand sleep apnea in their organization. ACS' OSA solution partner makes sure key personnel are up to speed with the risks and challenges of sleep apnea in the transport industry. Their experts provide medical support during hiring processes and help trucking companies integrate sleep apnea education into other health, safety and wellness efforts. ACS recognized with its expertise in trucking compliance and managing data, true synergies could be shared by collaborating with its solution partner. Combining these two organizations with their core competencies created the most complete sleep apnea solution inside the trucking industry. Crete Carriers and Prime Inc.

are only a small sample of ACS Expedited Solutions' customer base. Crete and Prime are two of the most successful carriers in trucking, both ranking on the Transport Topics' 2009 Top 100 For-Hire Carriers list.

ACS and its solution partner provide the first-of-its-kind, end-to-end sleep apnea diagnostic, treatment and compliance network for transportation. ACS uses their current truck stop network as a scanning station and primary collection terminal. In the first generation of this solution, a USB hub will be added to the truck stop scanning device. Drivers will hand a USB smart stick which contains their sleep history data to the fuel desk clerk. The clerk will insert the USB stick, upload it to the compliance portal, print a receipt, and hand the stick back to the driver. The entire transaction is expected to take 10-15 seconds, significantly less than a scanning transaction. The entire data per transaction is estimated at 25KB per transaction. ACS offers another form of data transfer with its TripPak IN-CAB Solution. In the comfort of their truck, the driver takes their smart stick and uploads the sleep data on a USB laptop outlet. This data is captured by TripPak IN-CAB software, and then distributed to the proper points of communication. ACS forms a competitive advantage by having two efficient data transfer systems that are easy to understand and use. While performing the beta, ACS and its solution partner received many accolades from Crete Carrier and Prime Inc. drivers. ACS and its OSA solution partner have created a formidable solution while designing the end to end sleep apnea diagnostic and treatment system.

Summary

Sleep apnea is a disorder that is quickly growing into an epidemic due to diet, irregular sleeping habits, lack of exercise and obesity. Credible surveys substantiate that approximately 28-42% of all drivers have some sort of sleep disorder. With 1.8 million active CDL drivers traveling over 128 billion miles per year, this is a ticking time bomb. To put it boldly, over 38 billion miles per year are traveled by drivers with OSA. To put this in perspective, it is like traveling to the sun 413 times. This is a serious problem that must be immediately addressed. The industry has to do something to protect the drivers and the public from this widespread disorder.

With a serious driver shortage looming, it is imperative to retain all possible drivers inside the trucking industry. Proper medical treatment must be given in order to keep safe drivers on the road. Every driver will be needed to keep this economy rolling for years to come. Now is the time for companies, such as ACS and its OSA solution partner, to innovate and build ideas that will help educate and treat drivers with OSA. This problem is not going away. ACS has put together an aggressive growth plan with a futuristic vision. ACS is committed to the health of the professional driver.

As previously mentioned, there are several variables pulling against the American commercial driver that include CSA 2010, sleep disorder testing, short lifespan and affordable health insurance. Driving a truck is one of the most stressful jobs in the US economy. Drivers need companies like ACS who has their best interest at heart. ACS and its OSA solution partner have an easy to use

first-of-its-kind, end-to-end sleep apnea diagnostic, treatment and compliance network for transportation. This technology will save lives for both the trucking industry and general public. With ACS on the driver and carrier's side, the chances of waking a sleeping giant is increasing rapidly.