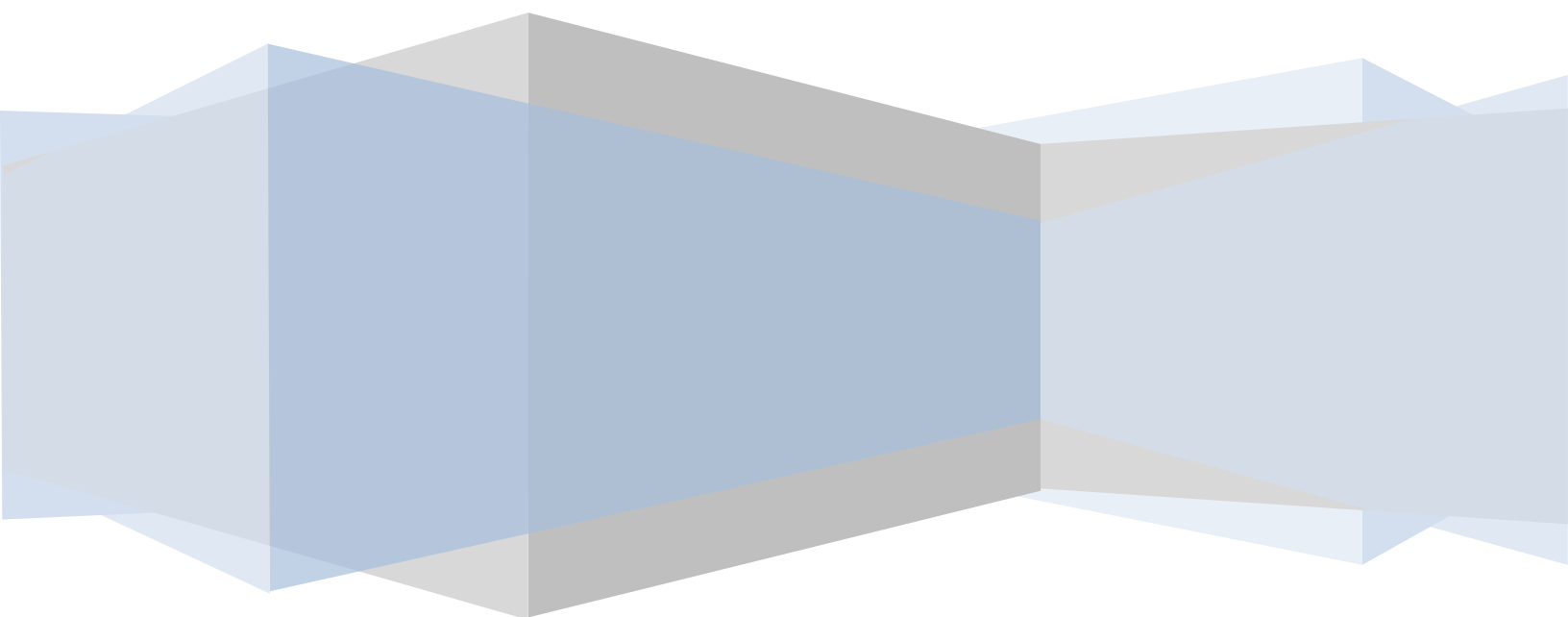


Writing Portfolio

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Free Training for a CDL License

Overview

Train for a CDL Truck Driver's license (class A or B) by getting a government grant, driving for a trucking firm which trains you, or training yourself. Not every option is completely "free", but most are better than paying the typical full tuition (which can be up to \$5000 for a class A license).

Getting a government grant

State workforce development agencies often fund training programs (using money provided by the federal government under the Workforce Investment Act) for individuals who are unemployed or low-skilled. Search for "one stop career center" on your state's website, or use a general search engine to find them across the country; then see what training funding they offer. Ex-military can use GI Bill grants.

Drive for a trucking firm which trains you

The largest national trucking companies ([CR England](#), [Schneider](#), [Swift](#), and others) train new drivers all the time. Most offer partial to full reimbursement for tuition; they may assist with other expenses, like housing and food. Reimbursement may depend on what employment approach you pursue with the company after completing the course, and how long you stay with the company after graduating and passing your driving test. Warning: if you quit or they fire you, you may have to reimburse them a large sum immediately.

Train yourself

Ask local trucking companies for a warehouse or helper job, stating your intention of getting your CDL. Go to the local motor vehicle department, get a CDL driver's manual, take the written test and get a CDL B or A permit. Drive company vehicles with a licensed driver on-board, getting enough practice until you are comfortable taking the CDL driving test. This will include a Pre-trip/Maneuvers section (performed in a state-owned parking lot, usually) and a Road test (on streets and highways). Ask to use the company's truck, or rent one for the test (expect to pay for the driving tests and truck rental). Some large companies offer this program for their dockworkers, like Con-way Freight and ABF. Study the pre-trip questions and practice the maneuvers (defined in your state's CDL manual); you cannot take the road test until you have passed those first. Save enough money so you can take the tests more than once.

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Massachusetts One-Stop Career Center -

[http://www.mass.gov/?pageID=elwdagencylanding&L=4&L0=Home&L1=Government&L2=Departments+and+Divisions+\(EOLWD\)&L3=Massachusetts+One-Stop+Career+Centers&sid=Elwd](http://www.mass.gov/?pageID=elwdagencylanding&L=4&L0=Home&L1=Government&L2=Departments+and+Divisions+(EOLWD)&L3=Massachusetts+One-Stop+Career+Centers&sid=Elwd)

Workforce Investment Act in plain English - <http://www.doleta.gov/usworkforce/wia/Runningtext.cfm>

CR England truck driving tuition -

http://www.crengland.com/truckdrivingschools/index.jsp?page=school_tuition

Schneider truck driving school -

<http://www.schneiderjobs.com/CompanyDrivers/TruckDrivingSchoolGraduates/index.htm>

Swift truck driving school - http://www.swiftruckingjobs.com/new_schools.php

Con-way Freight - <http://www.con-way.com/en/careers/driver-careers/>

ABF - <https://www.abf.jobs/>

Resources:

To find large trucking companies that might offer training: <http://ttnews.com/tt100/> and see common carrier listing http://www.ttnews.com/tt100/TT100_web_FH09.pdf . This listing is updated annually, so title of PDF will change as well.

Key Concepts:

Job Training

CDL schools

Training grants

How to hook up a shuttle dolly to a second trailer

Overview

Most tractor-trailers consist of a tractor pulling one long (53') trailer, but sometimes it is more efficient to pull two or more trailers connected by a shuttle (or converter) dolly. A dolly has one or more axles, riding on air bags or leaf suspension, with a frame to connect to the rear of another trailer. The dolly has its own fifth wheel, support gear, brakes, air and electrical lines, and sometimes its own air tank.

Connecting these trailers involves getting the dolly in place, hitching it to the lead trailer, pushing it under the next trailer, and verifying your fifth wheel, air and electrical connections.

Get the dolly in place

If the dolly is close enough (and light enough);

1. Release the dolly brakes (open the dolly air tank petcock, or, if it has spring brakes, release the dolly parking brake control)
2. Roll the dolly toward the front of the rear trailer, leaving it so that the dolly's fifth wheel "mouth" is directly in front of the trailer's kingpin.

If the dolly cannot be moved manually, do the steps below to connect the dolly to the end of the lead trailer.

1. Drive the tractor-trailer near the dolly.
2. Attach the dolly's hitch eye through the lead trailer's pintle hook, and lock it.
3. Raise the dolly support and secure it.
4. Drive the vehicle in front of the rear trailer.
5. Lower the dolly support.
6. Unlock the pintle hook and detach the dolly's hitch eye from the lead trailer's pintle hook.
7. Roll the dolly toward the front of the rear trailer, leaving it so that the dolly's fifth wheel "mouth" is directly in front of the trailer's kingpin.

Connect the dolly to the front trailer

1. Drive the tractor-trailer near the dolly.
2. Attach the dolly's hitch eye through the lead trailer's pintle hook, and lock it.
3. Raise the dolly support and secure it.
4. Verify rear trailer's brakes are locked or its wheels are chocked.

Push the dolly under the rear trailer

1. Slowly back straight up until you feel the dolly fifth wheel touch the front of rear trailer. Check that the trailer is slightly lower than the middle of the dolly's fifth wheel.
2. Back the dolly under the rear trailer until you hear the fifth wheel "snap" into the rear trailer's kingpin.
3. Verify the dolly's fifth wheel latch is "in" (i.e., close to the fifth wheel), and that the locking jaws are clamped on the base (not the top) of the kingpin.
4. Raise rear trailer landing gear slightly off the ground.

Verify your fifth wheel, air and electrical connections

1. Try to drive the tractor-trailer forward (chock should keep rear trailer in place).
2. Verify the dolly is still under the rear trailer.
3. Connect dolly's safety chains, air hoses and electrical lines to rear of lead trailer and front of rear trailer.
4. Close the dolly's air tank petcock.
5. Close the shut-off valves at end of the second trailer.
6. Open the shut-off valves at end of the lead trailer. If dolly has a shut-off valve, open it as well.
7. Put the rear trailer landing gear all the way up.
8. In cab, push in trailer brake ("trailer air supply" button). This should send air through both trailers.
9. Open the emergency line shut-off at the end of the rear trailer.
10. If there is no air pressure, do not drive vehicle – there is a problem with the air supply.

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11. Turn on all lights and verify they work on all trailers.
12. Pick up the rear trailer chocks and go.

Tips

This article describes connecting simple one or two axle dollies. Other types of dollies, especially for hauling extremely heavy items, may have different connection methods.

Some dollies have a bar which attaches to the front trailer, so that the dolly will not turn. Then the tractor, lead trailer and dolly can be backed up as a single unit under the rear trailer. The bar is then detached from the lead trailer and secured on the dolly before driving the combined unit away.

Warnings

The lead trailer should be the heaviest one.

How to identify hazardous materials by trailer type

Overview

Tractor-trailers carry many types of hazardous materials ("hazmats") as varied as gasoline, poison, or cement. The trailer sides must display placards that describe what kind of hazmat is inside.

You can also infer what hazmat is inside by looking at the trailer's appearance. Trailers specially made to haul hazmats in liquid or gaseous form ("tankers") typically have a tube-like appearance.

Oval-shaped tanker

A trailer with an oval-shaped tube is called a Low-pressure Flammable Liquid tanker, and carries gasoline or other fuels. Tankers of this design may also carry milk or other liquid foods.

Round-shaped tankers

There are many types of round-bodied trailers.

A Low-pressure Chemical tanker has a ladder on its side, and carries flammable, poisonous, acid or caustic liquids.

A High-pressure tanker has both ends rounded (like a pill) and carries pressurized gases like propane.

A Corrosive Liquid tank body is wrapped with reinforcing rings, and carries corrosive materials like acids, or flammable liquids.

A Cryogenic Liquid tanker carries gases liquefied by refrigeration (such as nitrogen), and is notable for having its wheels sit under a large trapezoidal structure (which houses the refrigeration equipment).

Non-tube tankers

Tankers with openings on the bottom to disperse their load ("Hoppers") are Dry Bulk Cargo tankers, and may carry corrosive solids, fertilizer, cement etc. The body style can vary.

Non-tank trailers that may carry Hazmats

Conventional ("box") trailers can carry hazmats in any form, as can trailers with no body ("flatbeds"). In this case, each piece of hazmat cargo must carry signage, in addition to having placards on the trailer.

How to use a dry van trailer

Overview

Dry van (or box) trailers are the most prevalent type in the trucking industry ("box" refers to the appearance of the trailer, which is actually rectangular; "dry" refers to the dry goods they carry).

Although any item which fits in can be loaded, dry vans most efficiently carry items packed in cartons, on pallets, or otherwise squarely bundled together, which can be loaded from the rear or (if available) side doors. Dry vans protect cargo from bad weather and theft, and can provide built-in cargo securement features.

A deck (a second floor above the trailer floor) created using cargo bars may allow more of the cargo space to be used.

Loading freight on the floor of a rear-door only dry van

The easiest way to load the van is through the rear door and only on the floor.

1. Position the trailer near the loading point (for example, a loading dock).
2. Carry the freight onboard, using a forklift, pallet jack, hand truck, or your hands. Be sure not to hit the front or side walls of the trailer.
3. Position the freight so that the items are as close together as possible, so they do not move during transit.
4. Hold freight in place with straps or cargo bars, if needed. Bars may hook into logistics posts on the walls, or just by pressure fitting them between the sides.
5. Distribute freight so that weight is evenly spread across the entire length of the floor.
6. When full, close the doors and, if needed, close the locks on the door clamps.

Loading freight on decking and floor of a rear-door only dry van

Loading freight through the rear doors using deck requires more planning.

1. After positioning the trailer, plan how the decking will be loaded.
2. Set the deck(s) at the appropriate level so that material-handling equipment or people can reach it safely
 - a. Verify deck materials (decking bars, deck floor, or straps) are properly secured into logistics posts
 - b. verify top of forklift or freight will not hit ceiling during loading
 - c. verify freight sits securely on deck, without falling off front
 - d. place items onto deck and secure as needed (i.e. with straps, bars, or other padding)

- e. load underneath the deck
3. Set next set of decks and do steps a – e until trailer is full.

Loading freight on floor (and/or decks) of a trailer with side doors

Loading a trailer with side doors needs to be planned so that the doors can open as needed (i.e. do not hook cargo bars or straps into the doors) and that goods do not fall out of the side doors when they are opened. Household goods movers and drivers with “peddle routes” (frequent stops of small deliveries) often use these vans.

Loading freight in a non-box dry van

Some trailers have “drop decks” – the trailer floor is lower in the back than the front. This provides more cargo space to load. These vans are often used by household movers and for other, light cargo. The front floor may not be reachable with a forklift or pallet jack; a walkboard (a long, wide plank usually made of aluminum or fiberglass) can enable getting from the lower (“dropped deck”) to the upper level.

Warnings

1. The driver is responsible for the overall weight and weight distribution of the load, and will need to compare the gross vehicle weight rating (GVWR) – the maximum the tractor, trailer and cargo can weigh – and its actual weight. Truck stops have scales where actual weight can be determined.
2. Tall loads will make the vehicle more “top-heavy” (apt to tip over), so decking should be reserved for light items.
3. A trailer with a hole in the floor, walls, or ceilings, or having doors with missing or broken hardware, may be taken out of service (i.e. off the road) by authorized federal or state commercial vehicle inspectors.

Tips

1. “Drop deck” trailers often have stabilizers that automatically or manually raise the level of the rear floor up (i.e. to the height of standard loading dock).
2. Some trailers have folding “liftgates” that lift cargo from the ground to the trailer floor.

Resources

1. “Mass RMV cdl manual – part 1 section 3 – “transporting cargo safely” - http://www.mass.gov/rmv/cdlmanual/CDL_Manual_Part_1.pdf
2. “Anderson Trucking System – dry van specifications” - <http://www.atsinc.com/about/dryvan.jsp>

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3. "Strick Trailers with lift gates" -
<http://www.stricktrailers.com/dryvantrailers/customtrailers/rail-gate.aspx>
4. Satellite Specialized Transportation – dry vans -
<http://www.satellitetrans.com/dryvanshipping.html>

How to get semi-truck driving directions

Overview

Semi truck driving directions can be retrieved online using GPS systems, internet-connected devices and truck-specific maps.

The online systems enable truck drivers to quickly determine the route and time to get from their current location to the next; the truck-specific maps often contain valuable general information (location of low bridges, permits needed) that may not be in the online systems.

GPS systems

Truck drivers may use either a car or truck-specific GPS. The driver enters the cargo type, weight, height, length and width of the truck, and creates a route avoiding roads with size or weight restrictions, low bridges, and cargo restrictions (for example, hazardous materials).

GPS units are usually small enough to be attached to the windshield and speak the directions aloud, so the driver can focus on the road not the GPS.

Internet-connected devices

Online mapping systems are widely available for Smartphone and laptop or e-reader devices, and can be used to retrieve directions. Typically the driver enters current location and destination and gets turn-by-turn directions. These systems generally produce directions for cars.

Truck-specific maps

A semi driver needs to keep a truck-specific map onboard in case his or her online systems are not working. Road atlases for trucks contain maps for all fifty states and Canadian provinces, as well as state/province-specific weight, length and width maximums, locations of low bridges, and designation of permit vehicles. Maps are available which show the locations of low bridges for specific cities (for example, New York, NY or Chicago, IL).

Keywords

Truck driving directions

Truck GPS systems

Truck maps

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- 2 "YP mobile apps" <http://www.yellowpages.com/products/yppmobile>
- 3 "Truck-specific maps" http://store.randmcnally.com/road-atlas/motor-carriers-road-atlases/2011-rand-mcnally-motor-carriers-road-atlas.html?SCCampaign=SEMDMCRA&gclid=CPGWgpX_naUCFQ915QodaH2PJg
- 4 "Garmin truck GPS" <https://buy.garmin.com/shop/shop.do?cID=275&pID=31541>
- 5 "maps.google.com" <http://maps.google.com/>
- 6 "New York City Truck Route map" <http://www.nyc.gov/html/dot/html/motorist/trucks.shtml#map>

Resources

List of online mapping software <http://www.autoguide.net/travel/directions.shtml>

Effects of aerodynamics on tractor-trailers

Overview

Tractor-trailers, heavy and square, are in continuous conflict with the air. There are three main aerodynamic effects that tractor trailers cause as they rumble down the road, all of which create “drag” or wind resistance.

Pushing air forward

The more blunt (flat and square) a tractor-trailer is up front, the more air it pushes forward, creating an area of high pressure. Air pressure and drag increase the faster the truck goes.

Tractors often have large square radiators, flat and protruding headlights, and many flat appendages (lights, mirrors, tailpipes, windshields, etc.) that add bits of drag. Trailers (especially ocean-going containers) are often flat-faced, though many manufacturers have rounded off their front corners.

Displacing air to the sides

The high pressure displaces air which will mostly be pushed to its sides (some also goes over or under the vehicle). This causes turbidity, or the movement of air in different directions, along the trailer body, which can sometimes produce a suction that draws other vehicles and objects towards the trailer.

Turbulent air also gets into the space between the tractor and the trailer (in fact, into any “hole” in the truck or trailer’s surface).

Drawing air in at the end

The blunt end of the typical “box” trailer exhibits the opposite aerodynamics of the front end; its abruptness means the turbid air on the sides passes it by, leaving an area of low pressure directly behind the trailer, in turn causing a vacuum that sucks air back into it. This vacuum pulls tailgaters along also, enabling them to use less fuel (but creating a dangerous driving situation).

Ameliorating drag on tractor-trailers

Laws passed since 1980 allow longer overall tractor-trailer lengths, enabling truck manufacturers to create longer, more rounded tractors, reducing the amount of high pressure generated. Truckers also added devices to deflect air ("fairings") from the tractor-trailer gap and over the trailer roof.

Smaller, drag inducing holes have been filled with fairings between the tractor wheels (covering the fuel tanks, battery boxes, etc.), rounded or flush lights, and rim covers.

Trailers now sometimes have a fairing at the front (a "nose cone").

Trailer manufacturers have recently added under-trailer fairings which send air toward the bottom of the trailer end, reducing the low-pressure zone there, and letting air pass by more easily. Another design reduces low pressure by adding an artificial rounded end to the trailer, which can be folded down flat to open the doors and back the truck up to a dock.

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- 3 ATDynamics Trailer Extension FAQs, http://www.atdynamics.com/trailertail_faq.htm

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NASA, "Reducing Aerodynamic Drag and Fuel Consumption", http://gcep.stanford.edu/pdfs/ChEHeXOTnf3dHH5qjYRXMA/10_Browand_10_11_trans.pdf

Keywords

Aerodynamic

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Tractor-trailer

Drag

trucking

Truck Driver Safety Training Materials

Overview

The federal government, non-profit organizations and private companies all provide materials to train truck drivers in safe driving, cargo handling and security, and general workplace safety. These materials consist of classroom and online courses, DVDs and videos, posters and guidebooks, laminated cards and more.

Safe Driving

Train your staff with DVDs and videos that address general safe driving techniques, for example:

- defensive driving
- driving in traffic or in rural areas
- handling weather conditions
- backing up.

You may prefer training that is based on a particular methodology for safe driving, like the Smith System.

You can also find courses for drivers who need to teach driving to others, or who drive trucks hauling multiple trailers (also called longer combination vehicles or LCVs).

You can direct every driver to get the Federal Motor Carrier Safety Regulations handbook, which encompasses all federal commercial driver safety regulations.

Cargo handling and security

You will find training for truckers who carry hazardous materials (Hazmats) or who need to know how to secure cargo in van (enclosed), flatbed or tank trailers. Laminated cards describing how much of a specific item constitutes a "hazardous" amount are critical for Hazmats drivers.

You can provide classroom courses to your drivers who transport air cargo (also called "Indirect Air Carriers"). This instruction is required by the Transportation Security Administration (TSA).

Workplace Safety

Office posters remind drivers about safe driving concerns ('No texting while driving'), and warehouse/dock safety issues (proper lifting techniques). A key warehouse safety issue for drivers who load their own vehicles is forklift training and safety.

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Place these posters around the office near the dock, time clock, drivers' break room, or other heavy 'foot-traffic' areas.

References

National Safety Council

http://www.nsc.org/products_training/Products/MotorVehicleSafety/Pages/ProfessionalTruckDrivers.aspx?utm_source=google&utm_medium=cpc&utm_campaign=Truck%2BDriver%20Safety%20Class

Professional Truck Driver Institute <http://www.ptdi.org/products/publications.aspx>

Smith System <http://www.smith-system.com/purchase.shtml>

JJ Keller Safe Driving DVDs webpage

http://www.jjkeller.com/webapp/wcs/stores/servlet/CatalogSearchResultCmd?storeId=10151&langId=-1&catalogId=10551&searchTerm=DVD+Programs&resultCatEntryType=&beginIndex=0&sType=&searchTermScope=&lastGeneratedEndecaQuery=No%3D24%26Ntx%3Dmode+matchall%7Cmode+matchall%26Ntk%3Dp_TradingID%26Ne%3D16%26Ntt%3D10005%26N%3D287+14+325+29&keywordSearchTerm=&paginationActionSelected=pageButtonClicked&pageNumberSeq=1%2C2%2C3%2C4%2C¤tEndecaPage=3&tabSelecetd=tabProductNServices&tabHasChanged=&lastGeneratedProdNServQuery=No%3D24%26Ntx%3Dmode+matchall%7Cmode+matchall%26Ntk%3Dp_TradingID%26Ne%3D16%26Ntt%3D10005%26N%3D287+14+325+29&lastGeneratedNewsNInfoQuery=No%3D0%26Ntx%3Dmode+matchall%26Nty%3D1%26Dx%3Dmode+matchall%26D%3DDVD+Programs%26Ntk%3DDefaultSearch%26N%3D288%26Ntt%3DDVD+Programs&pageNumberSeqProdNServ=1%2C2%2C3%2C4%2C&pageNumberSeqNewsNInfo=&beginIndexProdNServ=24&beginIndexNewsNInfo=0&numResultsProdNServ=40&numResultsNewsAndInformation=0&pageSizeHasChanged=false&selectedCategory=Transportation%7C16585&selectedCentryId=16585&searchOperationSelected=&endecaSearchKey=&newSearchTerm=DVD+Programs&categoriesIdSearchForm=Transportation%7C16585&pageSize=12

JJ Keller laminated Hazmat card webpage

http://www.jjkeller.com/webapp/wcs/stores/servlet/product_Hazmat-Load-and-Segregation-Chart_10151_-1_10551_60302

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Federal Motor Carrier Safety Administration "Safety and Security" home page
<http://www.fmcsa.dot.gov/safety-security/safety-security.htm>

Occupational Safety and Health Administration Transportation home page
http://www.osha.gov/SLTC/trucking_industry/index.html

Transportation Security Administration Indirect Air Carrier page
http://www.tsa.gov/what_we_do/layers/aircargo/indirect.shtm

Key Concepts

Job Safety

Truck Driving

Safety Training

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What are LCVs in the transportation industry?

Overview

LCV is the abbreviation for longer combination vehicle, which the Federal Motor Carrier Safety Administration defines as a tractor connected to two or three trailers, and weighing more than 80,000 pounds. Two-trailer systems are called doubles, and three-trailer systems are called triples.

Because they allow one tractor to haul larger loads, LCVs are promoted by the American Trucking Association (ATA) as a way to improve the industry's fuel efficiency and reduce its carbon footprint.

Components of an LCV

A trailer which is set up to haul another trailer behind it must have a pintle hook, an electrical connection, and an air connection at its end.

A converter dolly connects the first trailer to the second. This is basically a frame with a set of wheels, suspension, fifth wheel, hitch (or draw bar) and electrical and air hoses attached to it. The draw bar loop is placed on the pintle hook, locked in, and the dolly is pushed under the following trailer and attached to it on the fifth wheel. The air and electrical hoses are then attached between the front and rear trailers.

Where LCVs can be operated

Truck weight and length restrictions are generally set by state law, except as restricted by the Interstate Surface Transportation Efficiency Act of 1991 (ISTEA), which "froze" the maximum length and weight of doubles and triples.

A two-trailer system consisting of two short trailers less than 28.5 feet (called pups) are generally allowed on most interstate highway systems and many state roads, and are not considered LCVs.

A two-trailer system consisting of two forty-eight foot trailers (called highway doubles) are generally restricted to limited access toll roads in both the eastern and western states.

A two-trailer system consisting of a long trailer and a short trailer (called Rocky Mountain doubles) are allowed on interstates and many state roads in the western states, and on limited access toll roads in the east.

Triples consisting of three pup trailers may run on both interstate and state roads in many western states, but are only allowed on limited access toll roads in the midwest, and are not permitted at all in the east.

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LCVs operate in Canada as well.

LCV Safety

An Alberta, Canada, study conducted by Montufar and Associates between 1999 and 2005 found that "LCVs, as a group, had the lowest collision rate of all vehicle types operating on the LCV [road] network." The authors suggest this is "because of the strict operating restrictions placed on their use, and the special driver training requirements."

This study notes that similar American research is hindered because the states, which capture accident information, often do not indicate whether a truck involved was an LCV or not.

Keywords

trucking business
Longer combination vehicle
doubles triples
trucking safety

Reference

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Government of Alberta, Transportation: LCV Safety Performance in Alberta
[\[http://www.transportation.alberta.ca/1179.htm\]](http://www.transportation.alberta.ca/1179.htm)

Resource

Truck Writers of North America: trucking terms glossary [\[http://www.twna.org/trucking_terms.htm\]](http://www.twna.org/trucking_terms.htm)