

A COMPREHENSIVE GUIDE TO:

FREIGHT SHIPPING SERVICES



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The Comprehensive Guide to Answer: What are Freight Shipping Services?

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In this comprehensive guide, you will learn what freight shipping is.

To help you find the answers about anything freight shipping related, we've put together an interactive table of contents. Click each link to be transferred to its section – or, you can scroll down and start from the beginning.

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CHAPTER 1

Definition of Freight Shipping

Freight shipping services are a part of the process of transporting commodities and cargo by ground, sea, or air. These goods are ordered into boxes, crates and containers to be loaded up and moved from point A to point B. With many different means of transportation, there are certain benefits that one may have over the other.

This guide will cover the history of freight shipping services, the different modes of transportation, how freight shippers price, which industries heavily rely on it and what the future holds for freight shipping.

Where did Freight Shipping Begin?

The term of "freight shipping" date as far back as the 1400s. Throughout the years, it became much more significant, especially in the 1700s. Freight shipping became more popular among European nations. Nations such as England, Spain, and the Netherlands started to expand their global empires, which resulted in many transportation of goods. During those years, goods were transported by using carts and wagons drawn by horses. This was extremely slow and often dangerous. For the United States, it was not until the beginning of the industrial revolution that freight shipping services saw the introduction of trains, steamboats and airplanes.



Freight shipping services started with wagons drawn by horses.

Before steamboats were introduced, travel by water used flat boats and rafts. Although this was seen easier for two destinations separated by water, it was also time-consuming. Flatboats and rafts required crew members to paddle, making it much harder than horse drawn wagons. Steamboats made it this process faster and more efficient. This also led to cargo ships being able to deliver to foreign countries. Since then, business owners have always looked to new technology for better, faster and more secure ways to ship their goods.

Today, freight refers to a larger quantity of goods that exceed the normal parcel size and weight. Goods are ordered into boxes or containers, loaded on pallets, and moved using various modes of transportation. The [freight shipping industry is evolving](#), and it is up to us to either keep up with the times or fall behind.

CHAPTER 2

The Difference Between Freight and Parcel

Understanding how freight shipping differentiates from parcel delivery helps provide insight on which shipping method is best for certain products.

Small parcels are individual shipments that are handled by common carriers such as UPS, USPS and FedEx. These are much lighter than standard freight pallets, maxing out at only 150lbs (70kg) per shipment. Individual shippers can visit their local drop-off points to ship via envelope or box at their convenience.



Couriers that deliver parcel are normally sent via a small truck or van. Anything larger is categorized for freight shipping/delivery, and needs larger vehicles accordingly.

[Parcel pricing](#) is determined by dimensional weight or weight of the package. However, packaging that exceeds the following criteria are classified as freight and shipped as such:

- Packages cannot exceed 150 lbs (70kg)
- Packages can be up to 165 inches (419 cm) in length and girth (2x width and height) combined
- Packages can only be up to 108 (270 cm) inches in length

Most of the time parcel will use ground services for domestic deliveries. However, some customers will use expedited courier services for small shipments if they want their items to arrive the next day. This requires air services most of the time to fulfill the requests.

On the other hand, freight shipping services help bring multiple types of transportation to the table for large-scale goods. These types of shipped goods can come in many sizes, from pallets stacked with plush toys or crates filled with automotive parts. With freight shipping, pallets and crates are used for easy loading, stability and protection of the goods.

Most modes of freight transportation are used in different scenarios for these shipments. There are many options, including LTL (less-than-truckload), Ocean, Air, and Rail.

What is Freight Forwarding Compared to Freight Shipping?

The role of a freight forwarder is to make global shipping as easy and stress free as possible for shippers. They specialize in arranging storage and shipping of goods on behalf of the shipper. Instead of shippers having to do their own research and discovery journey for a freight shipper, [freight forwarders offers a "middle man" service](#) between shipper and carrier. Products are normally sent to and from international stations that may use several carriers. Each carrier may have different requirements and legal issues – therefore, having an agent act as an intermediary for the transported goods helps ensure smooth and efficient shipping.



Freight forwarders help freight shipping by management of the transported goods.

Common services includes tracking inland transportation, preparation of shipping and export documents, warehousing, negotiating freight charges, cargo insurance, freight consolidation and filing insurance claims. They do not move the shipped items, but rather find the means and management of it. This [helps businesses and personal shippers](#) move their freight cargo successfully and seamlessly.

To get a better understanding of what to know when choosing a freight forwarding provider, check out this article. [Must Knows When Choosing Freight Forwarding and Shipping Services.](#)

CHAPTER 3

The Different Modes of Freight Transportation

Ground Shipping Services

Less Than Truckload (LTL)

Less Than Truckload, or LTL, is a [ground shipping service](#) where goods only occupy portion of a trailer. Most freight trailers are 8'-8.5' wide, 12.5'-13.5' high, and 40'-53' long. These dimensions allows for several loads of shipment to fit into a single truck to accommodate for multiple customers and point of destinations. This makes LTL cost efficient for freight shipping. LTL also offers many benefits not found in other shipping methods. Those are eco-friendliness and access to extra service options.



Full truck loads are used to ship goods that requires the full use of a truck.

Not only does LTL cut costs, but by sharing a truck bed with other shippers allow for a reduction on the carbon footprint on Earth. Extra service options are inside pickups and delivery, liftgates, non-commercial delivery and notification options.

Full Truck Load (FTL)

Full truckload will usually mean two things; either there is enough products to fill a full truckload, or there is a need for a dedicated truck for a partial load. The volume of goods will fill out the truck from top to bottom, front to back. Although there are some weight limitations based on vehicle laws, the standard size of each shipments will range between 10,000 to 45,000 lbs. When it comes to what types of transportation methods are used, full truckloads use dry can, flatbeds and refrigerated trailers.

This method is often chosen when shippers have 10 pallets or more, there are high-risk packages or when time is an issue. A couple questions to ask before choosing this method is:

1. What size is the shipment? (Is it more than 10,000 lbs?)
2. [How fast does it need to be delivered?](#)
3. How delicate is the shipment? (Can it be easily damaged or is it temperature-sensitive?)

Rail

Rail shipping is one the least expensive mode of transportation available for large and heavy goods. If goods and commodities are located near the rail head then this option should be considered. However, one fact to consider is that if the destination is connected to the railway, or if additional modes of transportation is needed. This will influence a cut down or increase in costs, so ensuring that shipping by rail fits within a specified budget.



Freight shipping by rail is a valid option for products that are in no rush to arrive at their destination, but planned ahead of time.

Railway carries goods and commodities by freight car. There are a variety of railcars available per each types of goods. Some of the more common cars are auto-carriers, coil cars, stock car, refrigerator cars, etc. These help transport automobiles, coils of sheet metal, livestock and temperature-sensitive items, respectively. Other materials that commonly are transported using this method are grain, stone, coal, ethanol and petroleum.

Air Shipping Services

[Air freight shipping services](#) are widely used by shippers all over the world because it allows for goods to move quickly and reliably. Defined into two groups, [air freight](#) can either be delivered as express or international air freight.

Express freight is handled by one central company, like DHL, UPS and FedEx). These shipments are much smaller and can be delivered from door to door within 5 days. International air freight are significantly larger and can move between multiple companies during its trip. This service includes much larger planes for transport of larger goods.

For example, the [Anatov 225](#) – the largest cargo airplane – can hold an entire train if needed.

The primary reasons why air is used is for its speed, reliability and protection.

Speed

For international shipping, air freight blows ocean shipping out of the water. Airplanes are much faster than ships at 30x faster for travel. Although it take ships weeks to send goods from a warehouse in China to the U.S., air freight can get it there within five days. This is extremely important for [expedited shipping and other high-urgency products](#).



Air freight can deliver goods and products within a shorter time frame than the other freight shipping services.

Reliability

As more technology is introduced into society, people are much pickier about their packages. Air shipping introduced better air freight data management, allowing both shipper and receiver to know exactly where their products are at any given moment.

Protection

Air freight shipping technology has influenced more safety precautions to be built around the cargo. Goods shipped by air are less likely to be damaged.

Since air cargo is normally very expensive, it is only limited to smaller goods that are high-valued or time sensitive. These types of items are:

- Electronics like phones, computers, desktop parts.
- Clothing and apparel especially during seasonal periods.
- Pharmaceuticals due to quicker delivery and better protection management.

For a deeper look at what air freight is and when to use it, you can view our article here at [Definition of Air Freight](#).

Ocean Freight Shipping Services

Even though [air is preferred over ocean](#) for international shipping, the benefits in using [ocean freight shipping](#) is due to the size of cargo and total costs. There are no restrictions when using ocean freight, but where air freight may take only a few days, ocean freight may take up to a few weeks. Much like ground shipping, ocean freight is categorized into two different shipping types, Full Container and Share a Container. These are big factors to [determine shipping container costs](#), amongst other factors.



Shipping containers can be loaded up into two different categories for ocean freight services.

Full Container (FCL)

Full container shipping allows the shipper to use an entire container, whether it is filled up 100% or not. Benefits of shipping FCL is damage protection from other cargo and no standby time for filling out the container, therefore making it much safer and quicker to delivery.

Share a Container (LCL)

Sharing a container lets shippers keep their inventory low, especially if they do not have the money or space to accommodate a full shipment. Instead of paying for an entire container, LCL allows shippers to be priced based on cost and size. This makes it easier to manage and restock seasonal inventory in different shipments.

CHAPTER 4

How are the Costs of Freight Shipping Calculated?

By definition, freight costs includes fuel, mileage, capacity requirements and any other use of equipment and services. However, shipping freight is dependent on many variables. The method of transportation, freight class, delivery timeframe, types of packaging and destination all contribute to the final costs.

Determining Freight Class

A large portion of freight costs depends on the freight class. Freight class is determined by a standard called the [National Motor Freight Classification](#), or NMFC for short. This standard lists out the commodities and compares them to a table associated with each freight class. These classes are categorized into 18 different classes, each ranging from 50 to 500. Lower classes have lower rates for higher rate, where higher classes have higher rates for lower weights. Below is a table displaying the 18 freight classes.

Class Name	Cost	Notes, Examples	Weight Range Per Cubic Foot
Class 50 – Clean Freight	Lowest Cost	Fits on standard shrink-wrapped 4X4 pallet, very durable	over 50 lbs
Class 55		Bricks, cement, mortar, hardwood flooring	35-50 pounds
Class 60		Car accessories & car parts	30-35 pounds
Class 65		Car accessories & car parts, bottled beverages, books in boxes	22.5-30 pounds
Class 70		Car accessories & car parts, food items, automobile engines	15 to 22.5 pounds
Class 77.5		Tires, bathroom fixtures	13.5 to 15 pounds
Class 85		Crated machinery, cast iron stoves	12-13.5 pounds
Class 92.5		Computers, monitors, refrigerators	10.5-12 pounds
Class 100		boat covers, car covers, canvas, wine cases, caskets	9-10.5 pounds
Class 110		cabinets, framed artwork, table saw	8-9 pounds
Class 125		Small Household appliances	7-8 pounds
Class 150		Auto sheet metal parts, bookcases,	6-7 pounds
Class 175		Clothing, couches stuffed furniture	5-6 pounds
Class 200		Auto sheet metal parts, aircraft parts, aluminum table, packaged mattresses,	4-5 pounds
Class 250		Bamboo furniture, mattress and box spring, plasma TV	3-4 pounds

Class 300		wood cabinets, tables, chairs setup, model boats	2-3 pounds
Class 400		Deer antlers	1-2 pounds
Class 500 – Low Density or High Value	Highest Cost	Bags of gold dust, ping pong balls	Less than 1 lbs.

Source: <http://cerasis.com/2013/11/20/freight-class/>

However, shipping an extremely large item, like an entire vehicle, will require a different method for pricing. This is best determined by contacting the shipping company directly.

Delivery Time

Delivery time for shipping is more of an estimate, rather than a guarantee. Unfortunately with standard freight shipping, there is always a possibility with unpredictable natural disasters, road collisions or driver sickness. Missing a delivery time happens from time to time. However, shippers who are willing to pay extra for shipping ensures their shipment arrives on time. If an incident were to occur, shipments will be moved to the front of the line to ensure that the goods are delivered on time.

Destination Mileage and Specifics

Certain specifications at destinations can add to the final shipping costs. If a request is put in to call ahead of delivery, delivery to a limited access location or delivery to an inside unit can all increase costs. This is because it requires the drivers to complete a few extra tasks to ensure that the shipped freight arrives according to instructions from the shippers. The distance traveled also will affect the final shipping costs too.



Sometimes shipping containers are needed to be unloaded and reloaded at shipping docks. This can add to extra costs depending on the dock.

Typically, the longer the shipment needs to arrive at its destination means the higher the price per-hundredweight will be. Some freight carriers serve a general locale, so if the products cross state line then another carrier will need to be hired to continue the transportation. This is defined as interlining, a procedure that may result in higher costs due to lower discounts.

CHAPTER 5

Major Industries That Require Freight Shipping

Most industries require shipping to either send their products to consumers, to other businesses or send parts and material for production. However, there are a handful that require freight shipping for their success. Whether its due to time sensitivity, temperature control or safety and protection, freight shipping is extremely important. Below are five major industries that builds its success on freight shipping services.

Medical Clinics and Hospitals

The medical industry relies on freight shipping to handle the transportation of emergency supplies, specimens for lab testing, organ transplant or blood transfusion. What's even more important is getting these shipments to their destination much sooner than later. Time is of the essence for this industry, and failure for medical supplies to arrive on time can be extremely detrimental to patients and medical procedures. Freight shipping also saves the medical industry lots of money by streamlining a solution for their logistics and storage concerns.

Read our [case study for the Medical Industry](#)

Pharmaceutical Companies

Most [pharmaceuticals require temperature control](#) to ensure the quality of the goods are maintained while in transit. This is due to the nature of narcotics, plasma and other perishable pharmaceuticals that need special care and handling. If flu vaccines and insulin are not correctly controlled, it can cost hundreds of thousands to millions. On average, pharmaceutical companies will lose \$150,000 per small package shipment due to temperature slips. Therefore, temperature control is the most important factor for pharmaceutical freight shipping.



The success of the pharmaceutical industry lies in if drugs and other products can get to their destination on time in a reliable manner.

Even if a shipment of medicine is delayed, it can make a huge impact in the quality of care for patients and pharmaceutical reps too.

E-Commerce Stores

In a world where online retail is growing at a fast speed, finding a solution for freight shipping on both the business and consumer side is important. On both business and consumer fronts, deliveries are expected to arrive much quicker than it did years ago. Most items that are shipped to warehouses for inventory arrive in large pallets. These can range from toys, clothes, perishable foods, cosmetics and more. The holidays and seasonal periods are even more

important for freight shipping services. New products are introduced and are only on shelf for a couple month, requiring reliable freight services to arrive to sell on time.

Freight shipping services provides solutions for E-Commerce by planning the means of transport months ahead of time. Companies plan ahead with shippers by finding the best routes and transport modes for their goods to ensure they are not affected by issues down the line.

Manufacturing and Industrial Support

Finding a solution for freight shipping for manufacturing and industrial companies helps cut unnecessary costs. These costs may rise from factors including missed delivery deadlines, broken goods and non-optimal travel routes. Generally these shipped items are electronics, construction materials, raw materials and other high-value goods.

Most manufacturing companies work with freight shippers who understand how to move large-scale cargo from Point A to Point B at the lowest costs for the best transport services.

Automotive

The automotive industry requires freight shipping services due to the pressures faced in both the distribution and production cycles. Auto replacement parts, engines, motorcycles and cars are expected to arrive on time an undamaged. This helps widen the window for sales and lessens the possibility of any delays.



Automobile and other vehicles need a reliable source for shipping foreign parts overseas.

Shipping domestically may only require LTL or FTL, but shipping across countries will require air or ocean services. The process is similar for planning and determining best routes for cost effectiveness. However, knowing that ocean freight takes much longer means it should only be used to ship parts for manufacturing months ahead of time.

Next day air services for automotive parts are normally used for quick repairs that be have a short turnaround time.

Read our [case study for the Automotive Industry](#)

CHAPTER 6

What the Future Holds for Freight Shipping

The growth of machine learning and technology improvements is set to change the entire face of freight shipping services as a whole. One of the core challenges that these improvements aim to answer is finding a solution to cover more miles with fewer vehicles on the road. Initially this may be seen as a catalyst for cutting jobs, the main purpose is to reduce both shipping costs and carbon emissions.

Even though [Amazon may be ahead of the game with expedited shipping](#), the industry is still growing as more technology is introduced to solve current issues.

Below we explore efficiencies to ocean freight and the revolution of autonomous trucking for today's society.

Changes to Ocean Freight Services

One of the major concerns for shipping by ocean is the amount of carbon emissions emitted. Freight ships contribute to [3-4% of human-caused carbon emissions](#), mostly coming from the high polluted fuel.

Immediate solutions for these carbon emissions is to build ships that can use cleaner diesel fuels. This would significantly reduce the emissions currently produced. Other technological improvements are changes to reducers and propellers to enhance weather routing. This helps ships avoid rough weather to save the most fuel, time and cost between ports.



Introducing ocean freight that can take diesel will help cut emissions problems once done correctly.

Other factors contributing to ocean freight are the automated and robotized ports. Ships can now plug into ports where they dock, tap into local power to avoid burning hundreds of tons of fuel. Automated cranes can unload and reload ships quickly, reducing the times spent in ports.

Introduction of Autonomous Trucking

Much like with advances to ocean freight, ground freight shipping services look for ways to move trucking to a more fuel-efficient solution. This birth the idea of autonomous trucking, which allows the vehicles to travel longer at a fuel-efficient speed that most humans cannot do. Automation is already implemented in many aspects of the logistics cycle – especially with the [trends in last-mile logistics](#). However, so far not officially for [autonomous trucking](#)(at least for the public use). It is projected that within a decade, vehicles will be completely self driving, dropping off products are specific set points and people will only need to pick up their stuff.



Autonomous trucking will be the future of freight shipping.

These reduced costs in energy not only means there will be less energy-sucking vehicles on the road, but the leftover would be allocated towards creating more efficiencies and technological improvements to freight shipping.