

Balanced U.S. Export System Generates Transport Efficiencies

Together, barge, train and truck transportation each play a key role in delivering U.S. grain from farmers' fields to domestic and international consumers. While some degree of competition exists among the transportation sectors, they each work toward the same objective and complement the goals of the U.S. barley, corn and sorghum and co-product industries.

In the United States, truck transportation is particularly important for distances of less than 500 miles (804.7 kilometers), according to the United States Department of Agriculture's Agricultural Marketing Service. Trucking is always the first, and often the last, stage of the journey from farm to market.

All grain is shipped first by truck to on-farm storage or a local elevator. In many cases, grain may be hauled by truck several times from farm to elevator; from the elevator to a bulk purchaser; and, depending on location, to an animal feeding facility, ethanol plant, feed manufacturer or export terminal.

The cost per ton for transporting grain in the United States is lower than in competing export countries. A drop in U.S. fuel prices in the latter months of 2014 supports this position and contributes to favorable marketing conditions for U.S. grain farmers.

United States Grain Gateways

Waterways
15,850 kilometers

Railways
217,260 kilometers

Highways
1.25 million kilometers





Loading corn into a truck for transport to grain elevator. Photo courtesy National Corn Growers Association.

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While lower fuel costs are providing welcome relief, new state and federal regulations, along with infrastructure issues, are posing new challenges. The U.S. highway system includes roads that are built and maintained by federal, state and local jurisdictions. This allows for an interconnected yet complex system of regulations. Even so, grain organizations work closely with state highway departments to keep farmers up-to-date on current regulations including weights, measures, shrink on agricultural products and log hours for truckers. ■

Railways Facilitate Grain Movement To Markets

Railroad service is a key component of the agricultural industry, especially in areas of the United States where there are no waterways for barge transportation.

When it comes to moving grain over long distances, railroads have a significant advantage. For example, a 100-car train unit has the capacity to move up to 9,074 metric tons, while a single truck can haul about 24 tons.


Railroads, however, serve many sectors besides agriculture, from automotive manufacturing to coal and oil. Competition between sectors can result in shortages or surpluses in the availability of railway equipment and scheduled movement of them along existing tracks. Within the agricultural sector, demand is influenced by weather-related transportation disruptions, variation in annual crop size and location, the timing of planting and harvesting, global trade patterns and commodity price fluctuations.

These and other factors can result in unexpected shifts in transportation costs, adding to the commodity price risk that agricultural producers, processors and shippers must manage.

Because of the combination of options between truck, train and barge, U.S. grain has the advantage of getting to market even if there become issues with one form of transportation. An example is in the state of Texas, railroads have discontinued service on some short segments of railways that serve a limited area.

“We’ve seen the removal or abandonment of rail switches from the main lines to local

A 100 rail car unit can



transport **9,074** metric tons,
equivalent to:

357,225 bushels
corn or sorghum

416,765 bushels barley



Railroad cars await loading at grain elevator.

U.S. Export Grain Grading Process

To ensure a quality crop at harvest, U.S. farmers work to select seed varieties that are best suited to the climate and growing conditions in their region. Throughout the growing and harvest seasons, farmers collect data to guide decisions such as fertilizer application. Prior to on-farm storage, grain goes through a cleaning and drying process to reduce the moisture content.

Arrival of grain at an elevator is the first point of quality control and certification off the farm. As grain is received at export elevators, it is graded and quality checked by government inspectors or a certified independent company.

From there, the Grain Inspection, Packers and Stockyards Administration (GIPSA), the Federal Grain Inspection Service (FGIS) (both divisions of the U.S. Department of Agriculture (USDA), or an independent survey company grades each load of grain as it is loaded from the elevator to a barge, railcar or truck.

This grade certificate serves as the basis for subsequent domestic sales of that load as it moves through the marketing system to the final domestic or international customer.

The U.S. Grain Standards Act mandates heavy grains (wheat, corn, grain sorghum, rye and soybeans) must be certified at the point of export by FGIS. It certifies the weights and grades for heavy grain

overcome any issues as they arise. ■

elevators,” said Wayne Cleveland, executive director of the Texas Sorghum Producers Association. “As a result, grain moves by truck from the local elevators to the export port. Additionally, much of the sorghum in the state’s southern region goes directly from the field by trucks to an export elevator at the port.”

U.S. grain farmers have closely monitored the country’s railway system for decades and have worked to keep it a viable transportation option for its customers. The National Corn Growers Association (NCGA), which represents the interests of U.S. corn farmers before the U.S. government, works hard to address any railway issues to ensure timely and efficient service during heavy shipping periods, particularly at harvest.

“Based on the large railroad volumes of corn and corn products and relatively short peak in seasonal shipping periods, improvements to rail transport are critically important for NCGA members,” according to the association’s official policy on the topic. ■

U.S. Export Grain Grading Process, cont’d

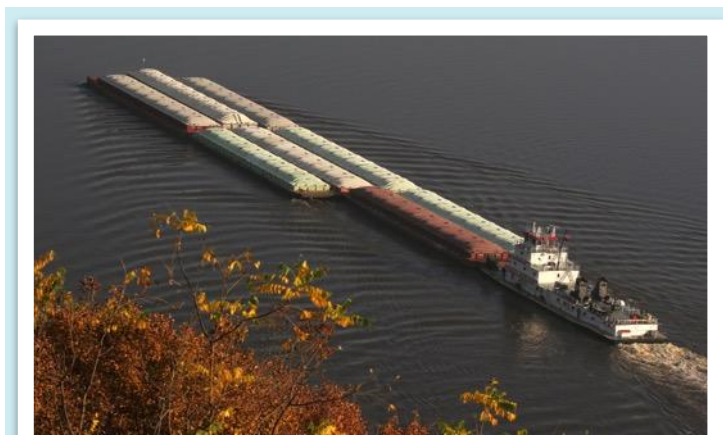
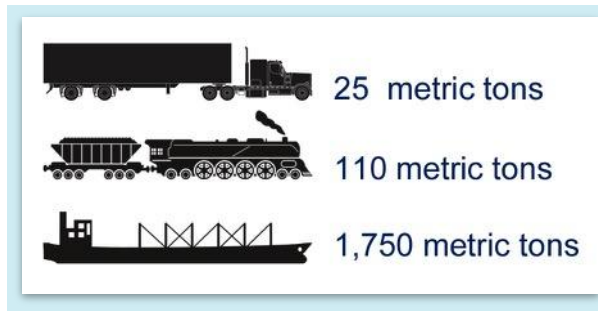
during the time of loading, which is intended to protect foreign buyers.

For more information on FGIS grading standards visit: http://www.gipsa.usda.gov/fgis/public_handbooks.aspx ■

Waterways Provide Efficient Movement Of U.S. Grain

Waterways offer a highly efficient system for transporting grain to major export ports in the United States. Through a complex system of rivers and connected waterways, farmers across much of the grain belt have the ability to move grain cost effectively and quickly to domestic and international markets.

Fed by the network of highways and rail lines leading to grain elevators along the river system, the U.S. internal waterways system has long been a major competitive advantage in world trade.



River barges move along the Mississippi River en route to export ports near New Orleans.

An estimated 60 percent of U.S. grain exports travel on U.S. waterways en route to export grain elevators for inspection and loading onto bulk cargo ships, according to The National Waterways Foundation, a group addressing policy issues related to America’s inland waterways system. Corn and soybeans make up the majority of the grain moved on U.S. waterways.

The U.S. Army Corps of Engineers (commonly known as “the Corps”), a U.S. federal agency delivering public engineering, design and construction management

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services, maintains the infrastructure of U.S. waterways, including channels, harbors, ports, locks and dams. To maintain mandated channel depths and ensure safe navigation, the Corps oversees construction and dredging projects at an average annual cost of nearly \$1.5 billion.

The Mississippi River system is the largest waterway system used by U.S. farmers. Running from north to south, this river-based transportation is a “super highway” for moving grain. It connects 31 states to export elevators and other commodity storage tank facilities. Grain elevators located at many points along the Mississippi River system provide farmers access points for marketing their crop. These elevators load grain arriving by highway and railway onto barges for delivery to export ports in the Lower Mississippi River Port Complex, such as the Port of New Orleans. In addition, the Pacific Northwest region of the United States uses the Columbia River to move grain and other products westward to Oregon and Washington export grain elevators.

Waterways offer a major advantage in freight costs by moving large volumes of grain over long distances for less than other transportation modes. For instance, a river barge can haul 16 times the tonnage of a rail car and 70 times of a highway tractor-trailer.

The movement of large quantities of grain is supplemented by the efforts of grain elevators to keep supplies moving and the Corps of Engineers to maintain and improve navigation along the river system.

Seasonal weather conditions like winter storms and extended periods of drought can impact river barge movement and volume, yet most of those issues are alleviated through planning and management. If necessary, grain shipments can divert to highways and possibly railroads.

When choosing U.S. grain, international buyers can have confidence in the balanced U.S. transportation system for moving grain efficiently from the U.S. interior to export ports. The movement of large quantities of

grain is supplemented by the efforts of grain elevators to keep supplies moving and the Corps to maintain and improve navigation along the river system. ■

Export Ports Serve As Hub For International Grain Trade

Every bushel of U.S. corn, sorghum and barley moving to overseas markets passes through a U.S. export port, a system known worldwide for its efficiency and certification procedures.

The vast majority of this grain bound for international markets is sold in large volume bulk cargo loads. Smaller orders sometimes go out through containers, often through West Coast ports.



A large cargo ship receives grain at an export elevator along the Lower Mississippi River Port Complex. Photo courtesy Blue Water Shipping.

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Fifty percent of all U.S. grain exported moves through New Orleans, the Pacific Northwest handles approximately 25 percent and the Texas Gulf Coast exports about 11 percent. The remainder goes through ports in California and the East Coast.

From the time grain leaves a farm destined for international trade, there are multiple layers of controls and certifications by numerous independent authorities, all working to ensure integrity of the product and process.

Thomas Russell with The Russell Marine Group, a service agency and freight forwarder in New Orleans and Portland, Oregon, said, “The process is the strictest and most extensive in the world with the final steps taking place in major U.S. ports. Our role is to move our customers’ vessels and products through the process efficiently and without error so they receive their product in a timely manner.”

“There are many advantages to purchasing U.S. grain. One of them is the ability of international buyers to have export documents in hand the next day after a ship is loaded.”

For the Port of New Orleans, the majority of grain moving to international destinations first arrives by river barge at grain elevators along the Mississippi River. Additional loads arrive by truck or railway. Upon arrival at the elevator, the grain is inspected and quality graded by a government inspector or certified independent company. Because the elevators do not have massive storage capacity, they are constantly unloading grain from barges, trucks and rail cars and preparing it for loading directly onto large cargo ships.

As a cargo ship enters the port to load grain, it receives an inspection by the U.S. Department of Agriculture (USDA). Additionally, the National Cargo Bureau (NCB), a marine surveying organization working under authority of the U.S. Coast Guard, provides inspection to certify the stability of the ship once cargo is loaded. After passing those inspections, a readiness certificate is issued, which means the vessel is ready for loading cargo.

When an agency receives the readiness to charter for a vessel, they file a berth application with the grain elevator, signaling the elevator to schedule the vessel for loading with the buyer’s specified grain.

Once the cargo ship docks at the elevator, another USDA and NCB inspection of the vessel takes place to ensure safety and quality for the remainder of the process. As grain is loaded, it is inspected and quality graded to verify that the grain meets the specifications of the buyer’s contract. Upon loading, weight and inspection certifications are issued for each lot of grain. At this point the elevator or a freight forwarder prepares the export documents so the ship can sail.

“There are many advantages to purchasing U.S. grain,” said Matt Boucree, a manager at Blue Water Shipping, a prominent steamship agency and freight forwarder. “One of them is the ability of international buyers to have export documents in hand the next day after a ship is loaded. That doesn’t happen as fast in other countries.” ■



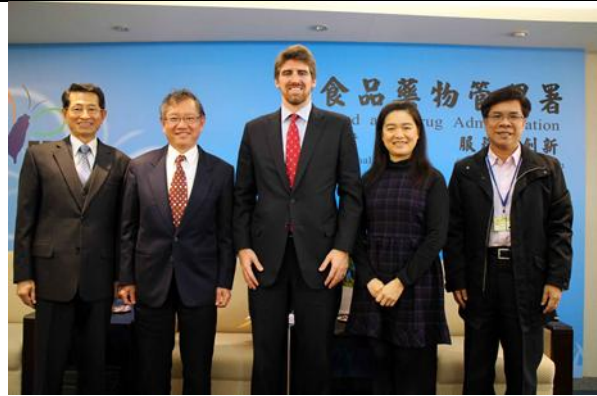
Grain moves by barge to an export elevator near the Port of New Orleans.

美國穀物協會全球生物科技經理訪問我國

美國穀物協會美國總部全球生物科技經理(Manager of Global Biotechnology) 康安儒先生(Mr. Andrew Conner)曾於今年 2 月 28 日至 3 月 3 日之間前來我國。在台期間，他曾分別拜會行政院農業委員會、行政院衛生福利部食品藥物管理署、美國在台協會、台灣大學生物資源暨農學院、台灣作物永續發展協會(CropLife Taiwan)、美國穀物供應商 CHS 公司等等，以了解我國基改產品有關規章與政策的最新發展。康安儒先生曾於 2012 年 11 月間前來我國。



3 月 2 日拜會行政院農業委員會。圖右起，畜牧處陳希嘉技正，陳保基主任委員，康安儒先生，美國穀物協會張學義駐台代表，和畜牧處陳志成技士。



3 月 3 日拜訪行政院衛生福利部食品藥物管理署。圖右起，科技中心林信堂博士，食品組周珮如科長，康安儒先生，潘志寬組長，和美國穀物協會張學義駐台代表。