

Great Ships/Great Lakes: Pre/Post Test ANSWER KEY

1. Out of every \$100.00 spent by Americans, how many dollars are involved with Great Lakes shipping?
D. Twenty dollars. Amazing right? Well, maybe not so amazing when you realize that iron ore for making American steel, as well as other raw materials such as coal for energy, grain for bread and pasta, and limestone for cement are some of the biggest cargoes hauled on the Great Lakes.
2. What is the most efficient and economical way to prevent the spread of invasive species by ocean going ships in our Great Lakes?
A. Swish and spit. This method is easy and inexpensive! Virtually all freshwater organisms cannot live in saltwater and saltwater organisms quickly die in fresh water as well. Therefore, a vessel loading in fresh water must empty, rinse and refill their ballast tanks in saltwater before entering fresh water ports. When the ship empties their tanks to take on cargo, they will be discharging saltwater, and saltwater organisms cannot live in fresh water. The US Coast Guard now monitors ocean-going ships to be certain that their ballast tanks are full of water of the correct salinity, or that vessel is forbidden to empty their ballast in the Great Lakes. Unfortunately we have not always known about this problem. Most of our invasive species were probably introduced before such policies were the norm.
3. One, one thousand foot Great Lakes vessel can carry the same amount of bulk cargo (such as coal or taconite) as how many fully loaded semi trucks?
D. Over two thousand trucks! Two thousand thirty eight full semi truckloads of taconite pellets can be carried on one, one-thousand foot Laker. Using Great Lakes shipping to move raw materials keeps our roads clear for other traffic and reduces fuel costs, road wear and air pollution as well. Maritime shipping is safer too! The number of accidents with ships is a tiny fraction of the accidents involving trucks, even considering those legendary Great Lakes storms!
4. How much oil can be spilled or discharged by a Great Lakes ship without breaking the law?
A. Not even one drop! The laws that protect our Great Lakes waters are tough and well enforced! If the Coast Guard detects even one drop of oil discharged (just enough to make a sheen on the water) they can issue a hefty fine. Maritime transport is very careful not to ever spill, and if there is an accidental spill, the ships have equipment on board to clean it up immediately. Sailors love their Lakes, and work very hard to keep them beautiful. (These laws apply to pleasure craft as well. Can all fishermen and jet skiers say the same?)
5. How many locks do the 1000-foot Great Lakes vessels have available to use when passing from Lake Superior to Lake Huron?
A. Only one! Only one lock, the Poe lock, at Sault Saint Marie big enough for large (700 foot and bigger) ships to pass through. If anything happened to that lock and it closed,



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shipping of all cargo from Lake Superior would stop. This would bring many American industries to a halt. Ninety-percent of iron ore for U.S. steel passes through this lock.

6. Why can't Great Lakes cargo vessels (Lakers) travel worldwide?
A. Great Lake vessels are too large. The Saint Lawrence Seaway was finished in 1959. At that time ocean-going ships were much smaller. Because of its size, no ships larger than 750 feet, or drafting more than about 28 feet can travel to or from the Great Lakes. This restricts Great Lakes Shipping greatly. Large ships cannot come into or leave the Great Lakes.

7. How long does an ocean-going cargo vessel usually last?
A. 30 years. Saltwater is very corrosive and damages the hull of ocean-going ships (Salties) very quickly. Ships travelling exclusively on the fresh water of the Great Lakes however can last a hundred years or more!

8. What are the three main bulk cargoes shipped on the Great Lakes?
A. Taconite (iron ore), coal and grain. Iron ore is a Great Lakes product, and is mined and made into taconite pellets in Minnesota and Michigan. Trains move it from the processing plants to ports such as Duluth, Two Harbors, and Escanaba, where it is loaded onto ships at huge ore docks. It travels to wherever industry needs it to make steel. Coal comes by rail from the low-sulfur coal beds of the Powder River in Wyoming primarily. It is also used to make steel as well as for coal fired electrical power plants. Grain from the Midwest comes to ports like Duluth, and Sault Saint Marie, usually by rail, and is transported all over the world via the Great Lakes.

9. What is a reasonable estimate of the dollars lost when a Great Lakes 1000-foot cargo hauler must wait to dock, load or pass through a lock?
A. A Laker might lose as much as \$2500 per hour! Big ships are very expensive and every minute counts when a profit needs to be made. Ports must work smoothly and efficiently or money is lost in costly delays.

10. How many hours does it take modern Great Lakes cargo haulers to load a 1000-foot ship with taconite?
A. As little as four hours! New ships can be loaded very quickly and efficiently. But it is not a job to make a mistake with. Modern ships have very thin hulls, and an incorrectly directed load can tear through the 'skin' of a vessel very quickly. An unbalanced load will cause the ship to hump or sag, which makes the ship hard to control and may even sink it in heavy weather.