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THE SHIPPING CONTAINER

THE IDEAL-X LEAVES PORT NEWARK

On April 26, 1956, a converted tanker called the Ideal-X pulled out of Port Newark with fifty-eight steel boxes bolted to a reinforced deck and sailed for Houston. Nothing about the cargo was new; the handling was. Until then almost everything moved as break-bulk freight - sacks, barrels, bales and crates carried piece by piece into a hold by gangs of LONGSHOREMEN, the DOCKWORKERS whose muscle and cargo hooks were the real transport technology of any port. A ship could sit at a pier for a week being filled. Malcom MCLEAN, a North Carolina TRUCKING owner, decided that week was the actual cost of shipping.

SPELL Spell: DOCKWORKERS

DOCKWORKERS

SPELL Spell: TRUCKING

TRUCKING

KNOWN What is the term for the gangs of dockworkers who carried sacks, barrels, bales and crates piece by piece into a ship's hold?

LONGSHOREMEN

KNOWN What is the last name of the North Carolina trucking owner who decided the week a ship spent sitting at a pier was the actual cost of shipping?

MCLEAN

OPEN The cargo on that first sailing was ordinary; the handling was new. What is something ordinary that changed completely when someone changed how it was moved?

Open response - use practitioner judgment

ONE BOX, ANY CRANE

McLean's insight was to standardise the outside of the box and ignore what went inside. The corner CASTINGS - eight hardened steel FITTINGS, one at every corner - gave cranes and locking gear a single universal interface, and TWISTLOCKS, rotating pins dropped into those castings, clamped box to box or box to deck in seconds. International standards agreed through the 1960s fixed the family at eight feet wide in lengths of twenty and forty feet, so any box fitted any crane and any chassis. That is INTERMODAL transport: one sealed load riding a TRUCK, a SHIP, a TRAIN or a BARGE without anyone opening it.

SPELL Spell: TWISTLOCKS

TWISTLOCKS

SPELL Spell: FITTINGS

FITTINGS

KNOWN What are the eight hardened steel fittings called, one at every corner of the box, that give every crane the same grip?

CASTINGS

KNOWN What is the term for moving one sealed load from one kind of vehicle to another without anyone opening it?

INTERMODAL

SEMI_OPEN Which two carriers can one sealed box ride without anyone opening it?

NEEDS 2 OF TRUCK / SHIP / TRAIN / BARGE

OPEN A twistlock clamps two boxes together in seconds, with no one opening either one. What would you want to ship without anyone looking inside?

Open response - use practitioner judgment

MATH A forty-foot container measures eight feet wide and forty feet long on the outside. How many square feet of deck does it cover?

320

WHERE THE SAVINGS CAME FROM

The savings never came from the sea voyage, which was no faster, but from the BERTH, the stretch of quay where a ship ties up and historically sat idle. Purpose-built CELLULAR ships, whose steel cell guides slot each box into a vertical stack, together with GANTRY cranes rolling on rails along the quay, cut port stays from days to hours, and a vessel earns money only while it is moving. Costs then fell in four places at once: HANDLING, PILFERAGE, INSURANCE and PACKAGING. A sealed box cannot be pocketed by the piece, and goods no longer needed crating stout enough to survive being dropped.

SPELL Spell: **GANTRY**

GANTRY

SPELL Spell: **CELLULAR**

CELLULAR

KNOWN What is the stretch of quay where a ship ties up called?

BERTH

SEMI_OPEN Name two of the costs that fell once cargo traveled in a sealed box.

NEEDS 2 OF **HANDLING / PILFERAGE / INSURANCE / PACKAGING**

OPEN A ship earns money only while it is moving. What is something in your life that only counts while it is in motion?

Open response - use practitioner judgment

THE PORTS THAT COULD PAY

Adoption was slow, contested and punishingly expensive. Carriers first built boxes to their own private dimensions, and the standards fight dragged through the 1960s until Sea-Land, McLean's own company, released its twistlock patent rights royalty-free so that one design could win. A port that wanted the traffic had to dredge deeper water, buy hundreds of acres for stacking yards and erect cranes costing millions. The narrow finger piers of MANHATTAN and Brooklyn could do none of that, and the trade crossed the harbour to Newark and Elizabeth. ROTTERDAM and Felixstowe rose the same way while older UPSTREAM docks emptied out.

SPELL Spell: **ROTTERDAM**

ROTTERDAM

SPELL Spell: UPSTREAM**UPSTREAM****KNOWN What is the name of the island borough of New York City whose narrow finger piers had no room to become container yards?****MANHATTAN****OPEN The trade crossed the harbour and the old finger piers emptied out. What has emptied out near you because the work moved elsewhere?****Open response - use practitioner judgment****MATH A standard shipping container stands eight and a half feet tall. Stacked six high in a yard, how many feet tall is the stack?****51****REACHING INLAND**

Cheap transfer rearranged the map inland as well. Every port draws on a HINTERLAND, the inland territory whose cargo flows through it, and once a box could ride a train across half a continent for a fraction of the old cost, a handful of deep-water hubs could serve regions that once supported dozens of working ports. Trade itself skewed: a route that carries full boxes one way must send empties back, so the BACKHAUL, the return leg of the journey, often moves air. Concentration bred fragility too, as the Suez CANAL showed in 2021 when one grounded ship closed it for six days.

SPELL Spell: BACKHAUL**BACKHAUL****SPELL Spell: CANAL****CANAL****KNOWN What is the term for the inland territory whose cargo flows out through a particular port?****HINTERLAND****OPEN One grounded ship closed the canal for six days and a queue formed behind it. What single blockage would cause the most trouble where you live?****Open response - use practitioner judgment**

THE LAST STRETCH

Nearly everything within reach of you spent part of its life in one of these boxes, and you never saw it. The last stretch is DRAYAGE, the short truck haul between a terminal and a warehouse, which now costs more per mile than the ocean crossing that preceded it. ECONOMISTS call the full figure LANDED cost, the price of a good once freight, handling and duty are added, and for most of what you own the sea leg is the smallest part of it. McLean's box did not make ships faster; it made the place where your things change vehicles almost free.

SPELL Spell: **DRAYAGE**

DRAYAGE

SPELL Spell: **ECONOMISTS**

ECONOMISTS

KNOWN What is the term for the full price of a good once freight, handling and duty are all added on?

LANDED

OPEN Which object near you would you most want to trace back to the box that carried it?

Open response - use practitioner judgment

MATH Suppose a box crosses 6,200 miles of ocean and then rides 40 miles by truck to a warehouse. How many times longer is the sea leg?

155