15 Containers

Susan M. Roberts

Even if you live miles from the ocean, you have seen shipping containers. They are the big steel boxes seen on the back of truck trailers, travelling on rail cars, and stacked at terminals and depots. Sometimes rusting containers can be found turned into temporary storage facilities behind shopping malls, at the edges of school playgrounds, and on construction sites. All around the world containers can be spotted, adapted, and transformed into everything from movable barracks ('battle boxes') and prison blocks to houses and stores.

The genius of the container, though, lies in its original purpose: as a standardized, multimodal shipping box. Containers are either 20 or 40 feet long, 8 feet wide and 8½ or 9½ feet tall ('high cube'). Each standard container can hold about 20 tons in weight and can withstand having five full containers stacked on top of it. Most containers are 'dry boxes'—just empty steel boxes with a wooden floor lining and double doors at the back. Others are temperature controlled ('reefer' boxes) or are designed to hold liquids in tanks, but all can be stacked on top of one another and be moved by the same equipment. Over 80 per cent of all containers are manufactured in China.

If you live in the global north, the chances are that nearly every manufactured thing you buy (and each of its components) has seen the inside of a shipping container. Over 90 per cent of international non-bulk trade travels in containers, and even items that were previously considered not suitable for containerization (such as metal ingots) increasingly are containerized. World trade is growing faster than world output, and world container traffic is growing much faster than world trade. It is estimated that there are about 30 million containers in circulation globally.

This simple and unassuming box has had a complex and very dramatic role in changing the world we live in: it has propelled globalization, altered the global geography of trade, restructured labour relations, and changed the face of cities.

The shipping container made its first appearance on the world stage just over 50 years ago, when the *Ideal X*, an old tanker with decks converted to hold a few dozen containers, sailed from Newark, New Jersey, down the east coast of the USA and around to the port of Houston, Texas, in 1956. (See also Helen Sampson's discussion of seafarers and changing global labour markets in Chapter 17.) Now there are over 3,000 specialized container ships, or 'box boats', sailing the world's oceans (see Figures 15.1 and 15.2). Some of the newest and biggest box boats can hold over 10,000 20-foot containers (or

Figure 15.1 Examples of modern intermodal containers aboard a specially built cargo ship.

Figure 15.2 Examples of modern intermodal containers aboard a specially built cargo ship.

TEUs—'twenty-foot equivalent units') each. Before 1970 only the New York Port Authority, with the creation of the Port Elizabeth Marine Terminal next door to the Port of Newark in New Jersey, and the ports in Rotterdam and Singapore had invested in building specialized container terminals. Today there are more than 50 ports with facilities to each handle over two million TEUs per year. Ten ports (nine of them in East Asia) have throughputs in excess of 12 million TEUs a year.

Vast investments in physical infrastructure, from dredged deep-water channels to quays to cranes to feeder highways and rail lines, have propelled some port cities, such as Singapore, to global status, whereas many ports unable to muster the investments have been bypassed by container traffic. The once-busy piers and quays of Brooklyn, Hoboken, and Manhattan fell quiet as Newark and Port Elizabeth took over the job of handling the increasingly containerized trade of the north-eastern USA. Because containers are predominantly moved by machines, not men, once-powerful port labour organizations such as the longshoremen of New York have seen their clout diminish.

The story of the container is often told as the story of Malcom McLean, a self-made trucking company owner from North Carolina. It was he who had the *Ideal X* refitted and designed the wheel-less truck trailer containers that were stacked on its decks. McLean was not the first to see the possibilities for intermodal traffic based on a standardized freight container, but he did determinedly take advantage of every opportunity and pushed to make it happen, in the process building his Sea-Land company.

The Vietnam War, it turned out, was a major opportunity for McLean. In 1965, the US military was embarrassed by its inability to organize the speedy offloading of much-needed military equipment at the harbours in Vietnam. Ships would wait for days to be painstakingly unloaded by hand and, once unloaded, equipment often sat on the docks for weeks without being sent on to the battlefield. Malcom McLean lobbied hard to persuade the US military to change from using smaller steel boxes (so-called Conex or Container Express boxes) to transport equipment, to adopting the larger container format. Sea-Land soon won the US military shipping contracts to Japan, the Philippines, and Vietnam, operating a largely containerized supply chain on those routes from 1967 on. As its Pacific business grew, Sea-Land looked for loads to carry on the return trip to the USA and began bringing containers full of Japanese-made goods back across the Pacific to consumers in the USA.

For the potential of containerization to be unleashed there needed to be agreement on basic issues such as the dimensions of the container. Like time zones and railroad gauges, it took some time for one set of standards to prevail. The 1960s were a time of intense jockeying among railroad, trucking, and shipping companies, sometimes in national coalitions, as the International Organization for Standardization (ISO) debated the pros and cons of various sizes of container and different types of construction. Even the fastening mechanisms at

the corners of the boxes, allowing containers to be fixed to different chassis and to each other, were the subject of fierce battles. Eventually ISO standards were established, such that by 1970 there was emerging convergence among manufacturers and users on the 20- and 40-foot lengths. With the standards in place, ports authorities and freight corporations felt secure investing in containerization. Before that, no one had wanted to potentially be stuck with the Betamax version of containers and container-handling equipment.

What has containerization done? First it has tremendously lowered transportation costs. Freight costs now make up only a fraction of the overall cost of many products, from phones to shoes, which travel immense distances from producer to consumer. Costs are lower for a variety of reasons: there is less pilfering when goods are containerized; labour costs are lower at ports, on ships, and at warehouses and depots; far-away production locations have become more substitutable, and the industry has tended to exploit possible economies of scale at every point.

The latest class of so-called post-Panamax (too big to fit through the Panama Canal) container ships can carry 11,000 to 15,500 TEUs, depending on their weight, and a Korean shipbuilder is building the first of a new ('Triple E') class of container vessel that will have a capacity of 18,000 TEUs. Such enormous ships transport containers across oceans very cheaply. However, the tremendous economies of scale they embody have had some curious effects. They have tended to lock in some ports and exclude others. The very biggest of the box boats can only call at a few of the world's ports whose facilities can handle such large vessels and the logistical challenges entailed in unloading, loading, and sorting thousands of containers in as few hours as possible. A train carrying a post-Panamax load of containers would be at least 71 kilometres (44 miles) long, so you can imagine the logistical problems a port could face in managing and sending such a quantity of boxes on their way. The potential for 'traffic jams' at the largest container terminals and the way the network tends to bypass many world regions (notably much of Africa) open the possibility for there to be a niche for specialized players (shippers and terminal operators) who serve smaller ports, or who might be able to promise greater speed or some custom handling.

However, the major site of innovation in the container business these days is information technology. Shipping companies and container-leasing companies can see the efficiencies and thus the profit that can be squeezed from better managing the host of small and big logistical challenges faced in keeping vast numbers of containers on the move—what one analyst called 'an exercise in mass synchronicity'. Such technologies can also be tailored to mesh with tracking systems that, much like those offered by parcel delivery services, can be used by customers to more exactly coordinate their logistic chains. Not coincidentally, such technologies can be mobilized to somewhat counter security concerns aroused by the opaque and ubiquitous container.