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CHAPTER ONE

History of milk and dairy operations

Many railroads operated solid trains of milk cars or trains that were mainly milk with a coach or two at the rear. Erie train No. 9 totes a string of empty milk cars near Lanesboro Junction, Pa., in the 1940s. They’re on their way toward Elmira for reloading at various local creameries along the line. Two of Borden’s distinctive “butter dish” tank cars are in the consist. Wayne Brumbaugh

Milk was an important, high-priority traffic source for many railroads into the 1950s. Railroads carried milk from creameries and small collection stations in rural areas to bottling and processing plants in large cities. In some areas, especially in the Northeast, this was done by dedicated trains, 1. In addition, railroads carried—and still carry—finished dairy products, namely butter, condensed and powdered milk, and cheese.
plagued by dramatic price swings, caused by many factors including competition among competing cooperatives, alleged price fixing by large dairy companies, and seasonal production swings (more milk in spring, less in fall). The core problem is that farmers have a daily production that must be sold; it can’t simply be stored like grain. Farmers can’t simply produce less milk if prices drop or more milk if demand increases—they’re tied to their herds.

As the Depression started, demand dropped, and producers lobbied for the government to regulate prices. This initially resulted in the Agricultural Adjustment Act of 1933, which led to raising and leveling prices for milk and other agricultural products. It was eventually struck down by the Supreme Court, but a revised version, the Agricultural Marketing Agreement Act of 1937, took over. The goal was to ensure an adequate milk supply while providing a fair price for producers. It sets a minimum price that processors must pay to farmers and cooperatives (which is adjusted by region and is based mainly on supply and demand, not the cost of production).

Part of this was the government buying excess milk and providing it free or at reduced cost to children in schools across the country (followed by subsidized lunches, through the National School Lunch Act in 1946). This did double duty, providing nutritious meals to children in need and providing a ready market for milk.

Many small creameries did not survive the Depression. In many regions, there were fewer than half the creameries in 1940 as in the late 1920s. As demand increased again in the 1940s, surviving creameries continued to grow and improve efficiency. Dairy herds, which had shrunk in the 1930s, also began expanding as electricity came to most rural areas, with milking machines and bulk tanks made processes more efficient.

**Butter and other milk products**

Along with market milk (milk intended for resale as such), a great

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**Milk and Dairy Timeline**

1611—First cows arrive in North America, to Jamestown Colony
1842—First regular shipment of milk by rail (Orange County to New York City)
1851—First wholesale ice-cream plant (Baltimore; owned by Jacob Fussell)
1856—First patent for condensed milk (Borden’s); production began in 1857
1856—First commercial butter factory
1884—Milk bottle first appears
1886—Automatic bottling/capping machine appears
1888—First dedicated milk railcars placed in service (Boston & Maine)
1895—First pasteurization of commercial milk
1903—Modern milking machine introduced by Alexander Gillies
1905—First milk-drying plant opens (Fayetteville, N.Y.)
1908—Chicago adopts first pasteurization law
1911—Rotary bottle filling/capping machine speeds operation
1914—First bulk (tank) trucks for milk
1919—First homogenized milk sold commercially (in Connecticut)
1920—5 million dairy farms in U.S.; 55,000 milking machines
1922—First production bulk (tank) railcars placed in service
1930—93 percent of milk into Boston arrives by rail
1930—13 percent of U.S. farms have electricity
1931—Milk rail traffic peaks
1932—Cardboard (coated) milk cartons introduced
1935—Borden’s “butter dish” tank cars first appear
1936—Flatcars with detachable milk tanks begin appearing
1938—Bulk tanks began appearing at farms, replacing cans
1940—70 percent of milk is home-delivered
1944—4.5 million dairy farms; 685,000 milking machines
1946—Truman signs National School Lunch Act
1948—Ultra-high-temperature pasteurization begins
1948—Paper milk cartons begin appearing
1964—Plastic milk bottles begin appearing
1972—Last rail milk operation (on Boston & Maine into Boston)
baby formula, ice cream, baked goods, and other food products.

Dried (or powdered) milk is another way of preserving milk, and it’s easier to store and ship than evaporated or condensed milk. Most common in early production was drying the skim milk left over from the buttermaking process (and dried whey from cheese), but there’s also dried whole milk and buttermilk.

Drum drying was a common early production method, where milk is applied as a thin film to a heated rotating drum. The moisture flashes off and the dried milk is then scraped off the drum. This method could scorch...
Larger tanks
The system worked well, but by 1939 the move was to larger tanks (3,000- and 4,000 gallons), which would quickly become the standard. These larger tanks had additional features compared to the early versions. Along with discharge pipes and plumbing, they included a thermometer, internal agitator, and manway. The initial 4,000-gallon tank, built by Glascote Products Inc., was 20 feet long and had a light weight of 7,300 pounds, making its loaded weight about 41,700 pounds (just over 20 tons).

With these, tanks were now positioned lengthwise on flatcars (up to two to a car). This time MTI worked with the Pennsylvania Railroad to modify a 70-ton steel flatcar at the railroad’s Wilmington, Del., shops. The resulting cars carried MTIX reporting marks. These cars had 10 transverse rails (five per tank) with locking devices at the end of each rail. The significantly longer tanks required semi trailers instead of the straight-chassis trucks of the original design.

The new arrangement required the truck to park parallel to the car for transfer. This simplified truck