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Introduction



A trio of Chicago & North Western F units hustle several loads of livestock eastward through Missouri Valley, Iowa, in 1947.
Henry J. McCord

The livestock and meatpacking businesses, and their associated traffic—namely refrigerator cars of meat and meat products—were a key part of railroading from the 1800s through the 1960s. If you model any era during that time frame, you can replicate many facets of the industry regardless of the railroad or region you model.

These industries provide many fascinating modeling possibilities. Cattle, hogs, and sheep traveled in stock cars. Dressed meat and finished meat products were carried to all corners of the country in a tremendous variety of refrigerator cars, many of which featured bright, colorful paint schemes. Structures included stock pens, stockyards, packing plants, and branch houses.

The meat business was no small player in American industry: by the 1930s, meatpacking ranked third behind only the auto and steel industries.

We'll take a look at the history of livestock production and the packing industry and see how railroads handled shipping both live animals and finished products.



In the late 1930s, the Pennsylvania Railroad rebuilt more than 100 old 50-foot round-roof automobile boxcars into class K9A stock cars. They were distinctive, with rectangular cutouts, slats, and screen-wire covering. *Chuck Blardone*



Number 14266 is from the first batch of 400 stock cars (of 900) that the Chicago & North Western rebuilt from old single-sheathed boxcars in 1954 and 1955. Note the temporary upper deck (boards sticking through slats) added to carry bales of hay. *Lloyd Keyser*

Refrigerator cars in service

1880: 1,310 (310 railroad-owned)

1890: 23,570 (8,570)

1900: 68,500 (14,500)

1924: 157,000 (33,000)

1932: 158,600 (46,000)

1941: 147,100 (22,100)

cars. Refrigerator cars would increase shipping mileage of finished products, while decreasing the mileage of livestock shipping—which, since the animals hadn't been processed, resulted in more carloads and tonnage to haul.

Refrigerator cars were also more expensive to build and maintain than stock cars or boxcars, with their double-wall construction, insulation, ice tanks or bunkers, and need for constant ice replenishment. Add the fact they would spend half their time running empty, and railroads didn't want to make the additional investment for these specialty cars.

The result was that private owners, the packing companies and leasing companies, began building and acquiring large numbers of cars. Of the 68,500 reefers in service in 1900, about 54,000 were private-owner cars.

At that time, Armour was doing its best to corner the refrigerator-car market with a fleet of 20,000 cars. These cars not only served Armour's own needs but were leased to others. In fact, most of Armour's refrigerator cars were leased to haul produce in the West. By around 1920, multiple federal rulings required Armour to divest much of its fleet except cars for its own use.

As perishable traffic grew in the 1900s, some railroads began building their own fleets of refrigerator cars, including Northern Pacific and Illinois Central. A more common approach was for railroads to form separate companies to supply refrigerator cars, a tactic that placed fewer restric-



Armour operated the largest fleet of refrigerator cars into the early 1900s, leasing cars to others as well as using them for its own products. *Library of Congress*

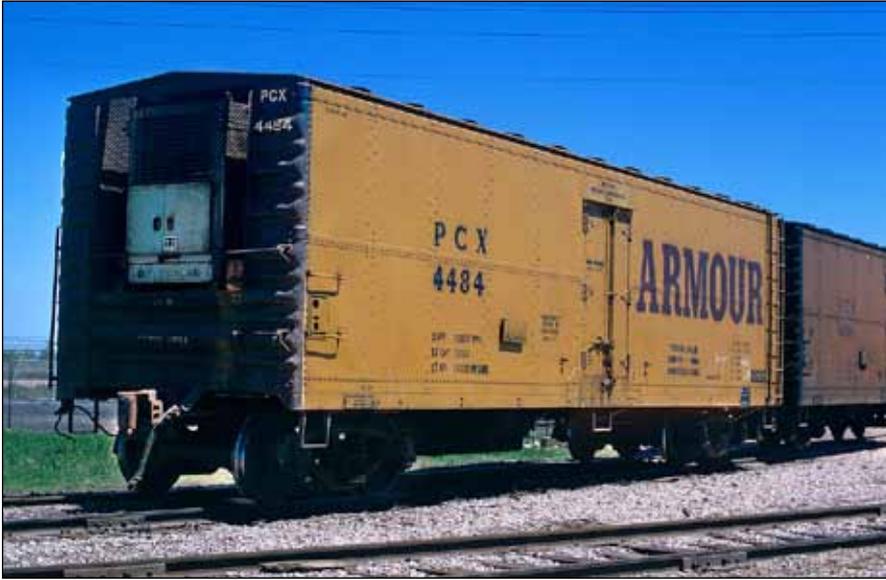


Mather cars, like this Morrell car with steel ends, enjoyed long service lives. The exposed channel side sill is a spotting feature of these cars. *William A. Raia collection*

tions on car usage. The largest of these were Santa Fe Refrigerator Despatch (later, Department) controlled by Santa Fe, and Pacific Fruit Express, a joint venture of the Southern Pacific and Union Pacific (and later Western Pacific). Other large private owners were Fruit Growers Express (Southern, Atlantic Coast Line, Baltimore & Ohio, and Pennsylvania) and its related companies, Western Fruit Express (Great Northern), Burlington Refrigerator Express (Chicago, Burlington & Quincy),

American Refrigerator Transit (Wabash and Missouri Pacific), and Merchants Despatch Transportation (New York Central).

The majority of these companies provided cars for produce service, but ART and MDT provided some meat cars. Other companies that provided meat reefers included General American (and subsidiary Union Refrigerator Transit), Mather Car Co., North American Car, and National Car Co. (a subsidiary of FGE/BREX).



Several of Armour's Packers Car Line leased reefers were fitted with end-mounted refrigeration units in the 1960s. This one, shown in 1970, shows the company's final scheme with large ARMOUR lettering. J. David Ingles

these weren't intended just for cooling meat. Instead, they were designed to haul frozen concentrated juice back to the Midwest from Florida processing plants, getting more utilization from the cars.

Ten Burlington Refrigerator Express 55-foot mechanical reefers built in 1957 received meat rails in 1961. In the early 1960s, several hundred new, larger BRE mechanical cars received meat rails and were

given BRMX reporting marks (as opposed to BREX).

Armour retrofitted some 42-foot PCX cars with end-mounted reefers in the late 1960s, and other companies did similar experiments, including a Rath refrigerator car equipped with cryogenic refrigeration.

All was for naught, as meat traffic was heading to trucks. A last effort to claim meat traffic was with refrigerated piggyback trailers. One railroad that tried

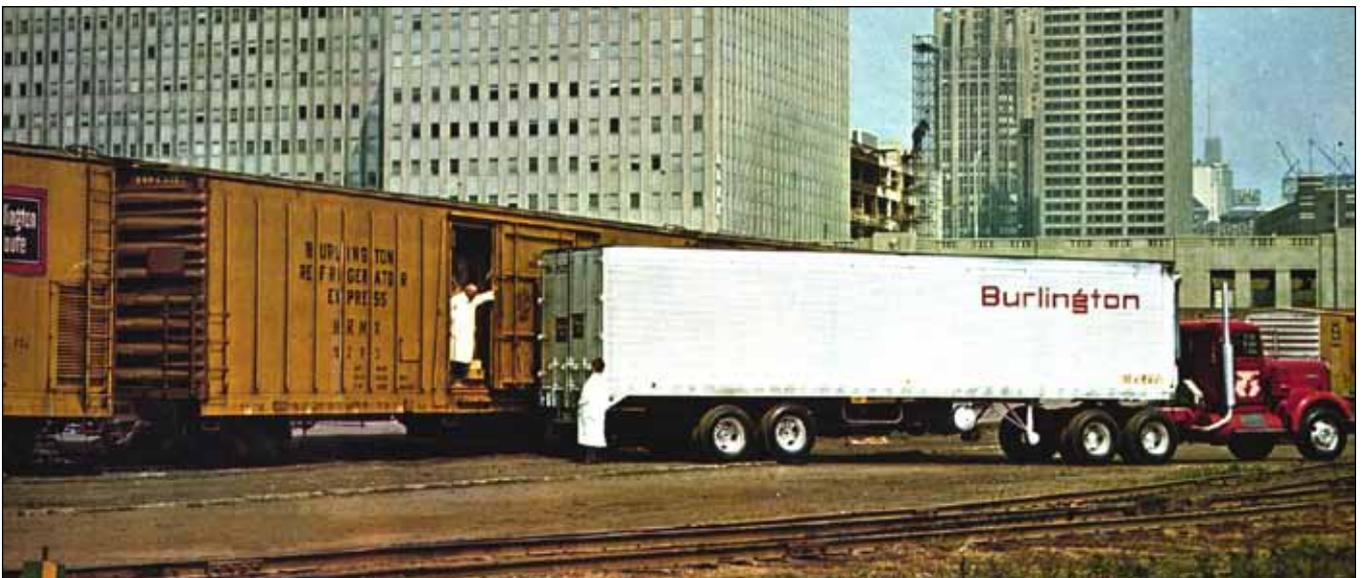
this was the Chicago, Burlington & Quincy, which bought 400 40-foot refrigerated meat trailers in the early to mid-1960s and added to the fleet in 1969 and 1970. In fact, in December 1969, the Burlington started a high-speed piggyback train dubbed the *Beef Express*, which departed Denver Friday afternoons bound for Chicago with trailers headed to Philadelphia and New York.

Over-the-road trucks won the traffic war, and most meat refrigerator cars were off the rails by 1971, as ice stations were removed from service and most produce cars were retired in favor of mechanical refrigerators.

Modeling

Red Caboose has made a Mather reefer in HO scale, Rapido has an HO model of a late-1930s 37-foot General American car, and Walters makes HO models based on a General American steel reefer with overlapping side panels. In N scale, Micro-Trains has a wood refrigerator car that can stand in for a meat reefer.

To match specific prototypes, it's hard to beat resin kits. Sunshine and Westerfield have both offered resin kits for numerous meat reefers in HO scale.



The Chicago, Burlington & Quincy tried to recapture meat traffic in the 1960s with large (67-foot) mechanical refrigerator cars and 40-foot refrigerated trailers. *Chicago, Burlington & Quincy*



Drovers load cattle into stock cars as a Chicago, Burlington & Quincy steam locomotive waits to move another cut of cars to the loading chutes. Crew members sit on the caboose cupola to watch the action in this 1941 view. *Hol Wagner collection*

Local stockyards

From the late 1800s through the 1960s, railroads maintained local stockyards along their routes in cattle-raising country. In the Midwest and West especially, it wasn't unusual to see pens in almost every town. The Chicago, Burlington & Quincy, for example, listed more than 660 stock pens along its lines in 1937; the Chicago & North Western had 200 such pens in 1940. In North Dakota in 1942, more than 90 percent of towns located on railroads had stock pens.

Even though the western United States is more noted for livestock traffic, plenty of animals began their journeys on eastern railroads as well, and pens could be found along railroads in most

farming areas east of the Mississippi River. As an example, about 40 percent of Kentucky railroad towns had pens in 1942.

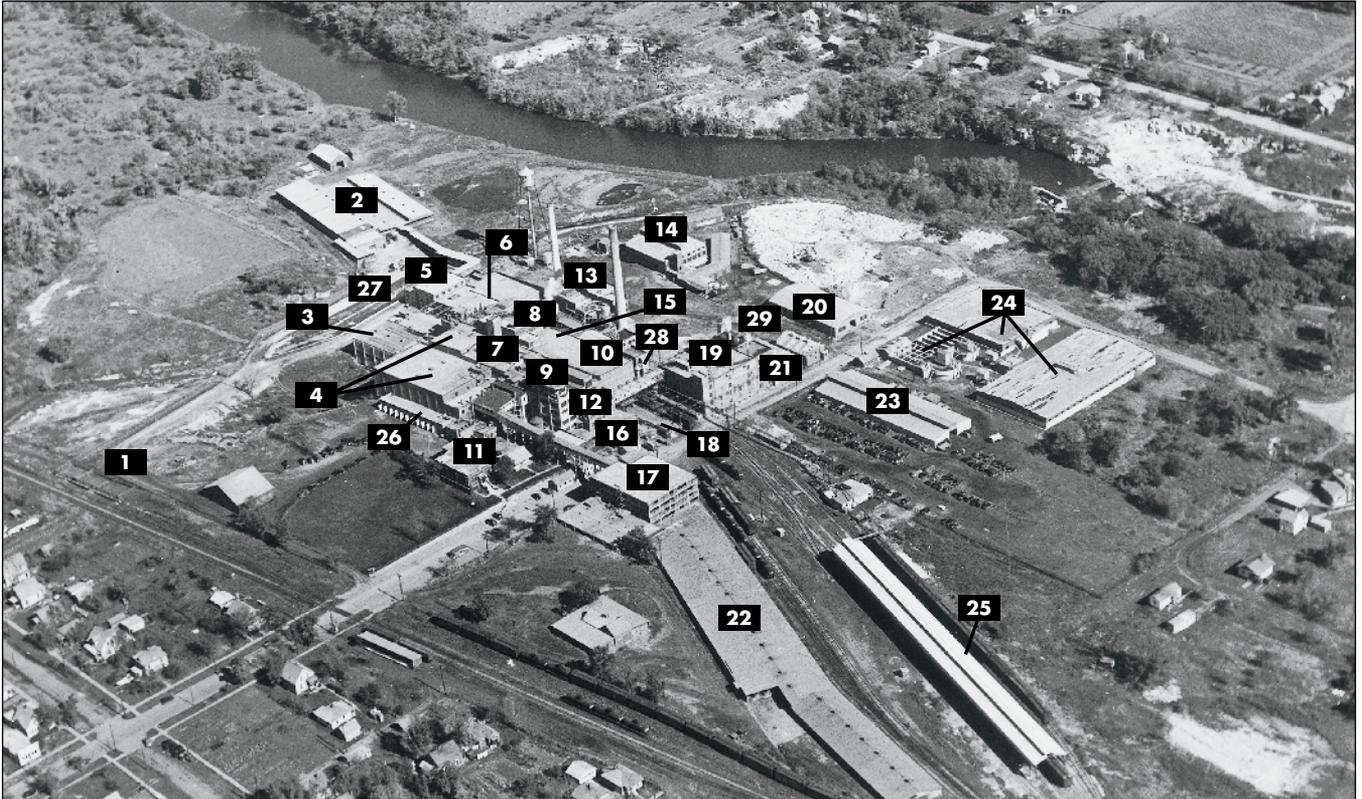
Most of these railroad-owned stockyards were relatively small. About 75 percent of them had four pens or fewer and could load 1–4 cars at a time with a siding or spur capacity of 6–12 cars. Larger stockyards at bigger towns could have 10–15 pens and be able to load 6 or more cars at a time with a siding capacity of 20 or more stock cars. The closer a town was to a major union stockyard, the less likely it was to have a pen.

These local stock pens were designed to allow farmers and ranchers a place to load their cattle for shipping to a union stockyard, packing company, or

other buyer. Most were little more than a series of pens and perhaps a scale and a scale house.

Each railroad followed its own set of standard plans in building and maintaining local stockyards and pens, but most followed a similar design. The drawings on pages 40–41, based on the union stockyard at Sioux City, Iowa, can be used as a basis for modeling various stock pens and yards.

Pens were divided and surrounded by wood fences that stood 5–6 feet tall. Fence posts were placed every 5 to 6 feet, and fences were commonly horizontal 2 x 8s with a gap between each board. Wider boards, such as 2 x 10s, were sometimes used lower down on the fence. To protect animals, horizontal planks were used on



- | | | | | |
|---------------------------|-------------------------|--------------------------|--------------------------------|--|
| 1. Cattle unloading pens | 7. Cutting and cleaning | 13. Heat and power plant | 19. Fertilizer building | 25. Refrigerator car maintenance, icing |
| 2. Cattle pens | 8. Packing and shipping | 14. Machine shop | 20. Garage | 26. Truck dock |
| 3. Processing and canning | 9. Hog killing | 15. Car loading tracks | 21. Hair building | 27. Box storage, packing, and loading dock |
| 4. Cold storage | 10. Packing and storage | 16. Offices | 22. Hog sheds | 28. Ice building |
| 5. Beef killing | 11. Offices | 17. Hog hotel | 23. Lumber shed | 29. Water tank building |
| 6. Beef cooler | 12. Lard building | 18. Salt storage | 24. Water and sewage treatment | |

This aerial view of the Armour packing plant (formerly Decker) in Mason City, Iowa, provides a good idea of how a small facility is laid out. Note that the hog storage areas (17 and 22) are covered to keep the hogs out of the sun. *David P. Morgan Library collection*

History

Through most of the 1800s, the business of butchering and processing meat was a small-scale operation. Slaughterhouses operated in most areas of the country, using animals raised locally. A lack of electricity and refrigeration meant butchered animals had to be either consumed right away or preserved, which was usually done by smoking, salting, or pickling. Much of the industry was seasonal, with many plants working strictly in the winter.

The invention of mechanical refrigeration helped revolutionize the meatpacking industry. In 1859, Ferdinand Carré of France

developed a vapor-compression system using ammonia that made large-scale building refrigeration practical.

Breweries were the first industry to extensively apply refrigeration, beginning in the 1870s, and commercial ice-making operations soon followed suit. Meat packers were a bit slower to catch on, but by the 1880s, the use of refrigeration was widespread in the industry.

Refrigeration allowed packing plants to become large-scale operations. Instead of being preserved, beef and pork quarters and halves could be held in large refrigerated warehouses and processed or shipped as needed.

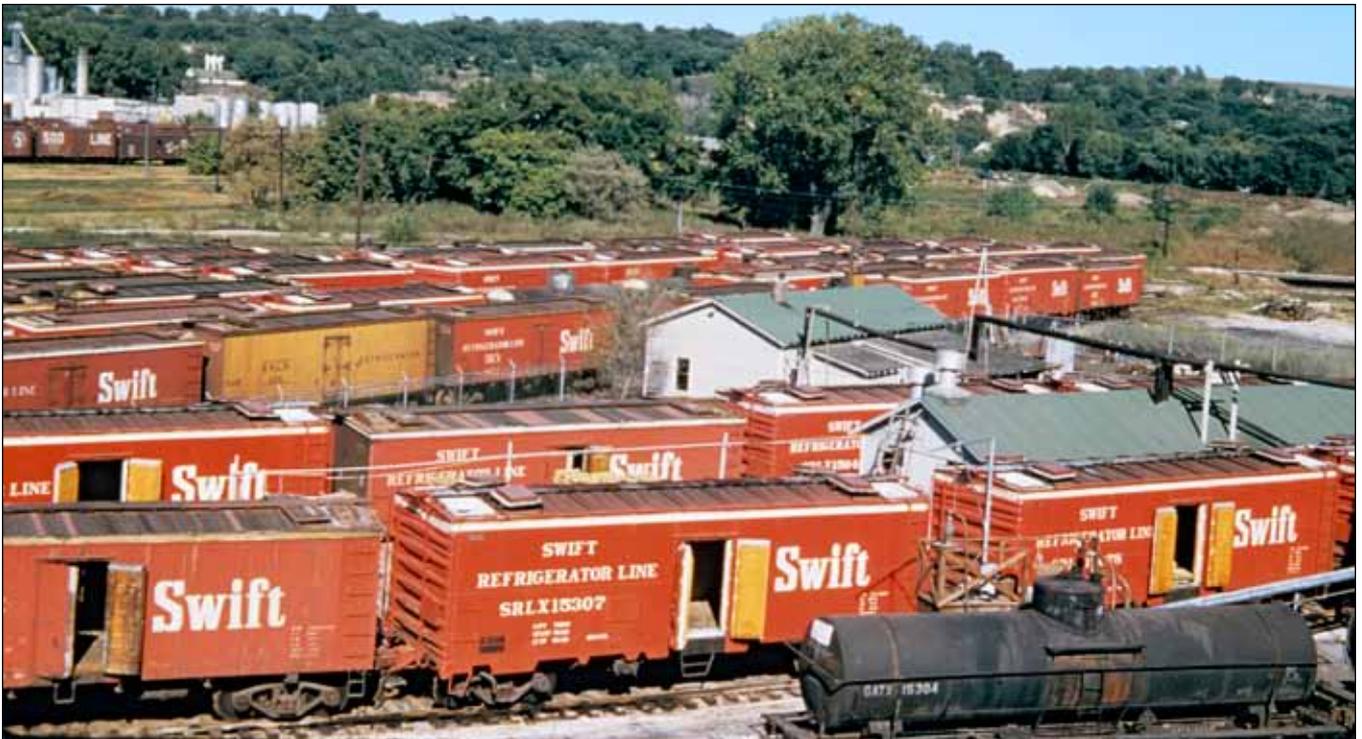
Ice-bunker refrigerator cars, which grew in numbers from the 1880s and 1890s onward, allowed these large packing companies to ship dressed meat and meat products all across the country.

Chicago became known as the world's leading meatpacking center as several packing companies set up shop next to the city's union stockyard, led by Swift in 1875 and followed shortly by Armour, Nelson-Morris, and others.

By 1900, the major packing companies had built large plants near union stockyards in many other cities, mainly in the Midwest and Plains states where animals were raised. Being located next to



Several billboard refrigerator cars wait outside the Cudahy Packing Co. Sioux City plant in the early 1900s. The main part of the plant stands about six stories tall. *Sioux City Historical Museum*



A mix of older wood reefers and new steel cars mingle on the cleanout and ready tracks at Swift's Sioux City plant in 1954. A lone car in the old yellow scheme stands out among a sea of cars in the red 1950 paint scheme. *George Berkstresser, Lloyd Keyser collection*

a union stockyard provided a ready supply of livestock.

By the 1910s, the industry was dominated by what became known as the Big Five packing companies: Armour, Cudahy, Nelson-Morris (purchased by Armour in 1923, which made the group the Big Four), Swift, and Schwarzchild & Sulzberger (which became Wilson & Co. in 1917). All five companies operated plants in Chicago and

also had large packing plants in other cities.

These companies dominated the market, controlling more than two-thirds of domestic meat production in the early 1900s. In fact, their hold on the market was too great, and in the 1910s the companies were charged with conspiring to fix prices and control the market. As a result, the packers were required to

divest themselves from stockyard and retail ownership, as well as other ancillary businesses not directly related to packing plants.

Along with the Big Four, many other significant packing companies developed through the 1900s including Cudahy Brothers (later Patrick Cudahy, a separate entity from Cudahy Packing Co.), Decker, Dubuque, Hormel, Oscar Meyer, Kahn's, Morrell, and Rath.