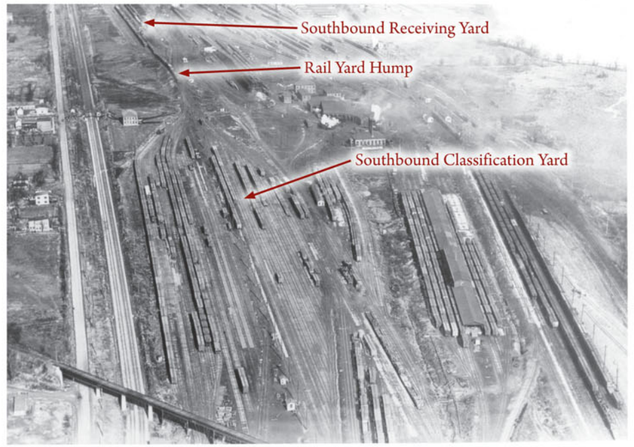
The Rail Yard Hump

Certain rail classification yards depended on a simple landform called the "hump." Potomac Yard had two humps: one for northbound trains and one for southbound trains. Trains first entered a receiving yard where locomotives were detached from trains and cars were sent to a classification yard over the hump: a hill built between the two yards. After being pushed to the top of the hump by a yard locomotive, cars were uncoupled in specific groups and allowed to roll down one of several different tracks to become part of a new train. This group of tracks formed the classification yard. This system used gravity—and a good deal of pre-planning by track managers—to make classifying (or sorting) rail cars much easier.



Potomac Yard's southbound hump and receiving yard in 1922. Courtesy of Alexandria Library Potomac Yard Collection.

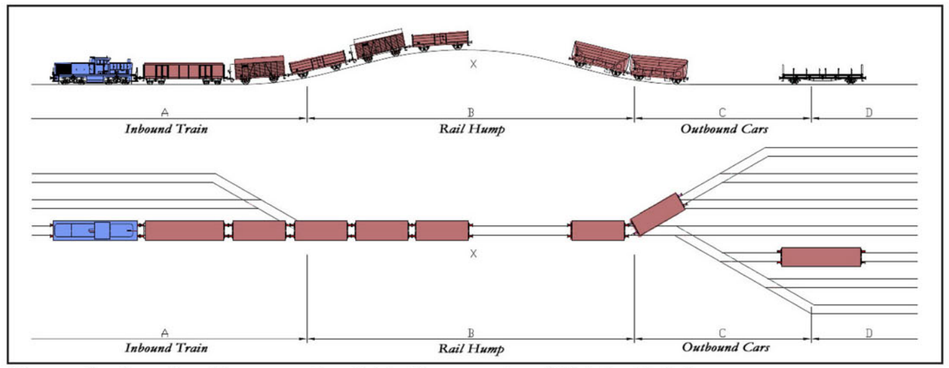


Diagram showing rail yard hump operation. Original image courtesy of Christian Lindecke.

Technological Advances

Potomac Yard incorporated numerous technological advances over the years to improve efficiency. Classifying cars evolved from primarily manual labor to utilizing automated and digital systems. Computers, installed at the Yard in the 1960s and 1970s, replaced mechanical relay systems with state-of-the-art digital systems.

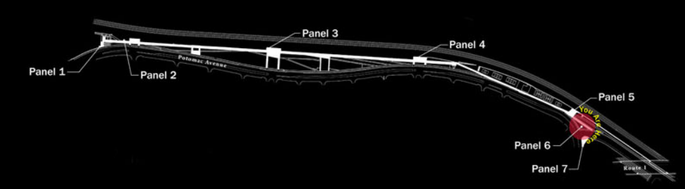
Rail cars were once uncoupled by hand on the hump by workers called car-cutters. Courtesy of the Library of Congress.

The first hump yards at Potomac Yard were operated manually by car-cutters who uncoupled the cars when they reached the top of the hump. Switch tenders lined the switches and brakemen rode the cars down the hill and slowed their descent using hand-operated brakes. In the 1930s and 1940s, remotely-operated switches and car retarders were installed and controlled from two towers on each hump.

In the late 1950s, the hump yards were once again updated when the VELAC system was installed at the southbound hump. VELAC, an automated classification yard system, replaced remote switches with electronic switches controlled from a four-story concrete tower. Touted as an "electronic brain," VELAC made car classification even more efficient and required fewer employees.

View of southbound rail hump and receiving yard from control tower inthe 1970s. Courtesy of Alexandria Library Potomac Yard Collection.

Before car retarders, brakemen slowed cars manually. Courtesy of The Library of Congress.

This automatic car retarder contained brakes on the tracks to slow downhill rail cars. The control tower is shown in the image background. Courtesy of George Payne.

Above: Car retarder operator. Right: Northbound control and retarder tower. Courtesy of Alexandria Library Potomac Yard Collection.