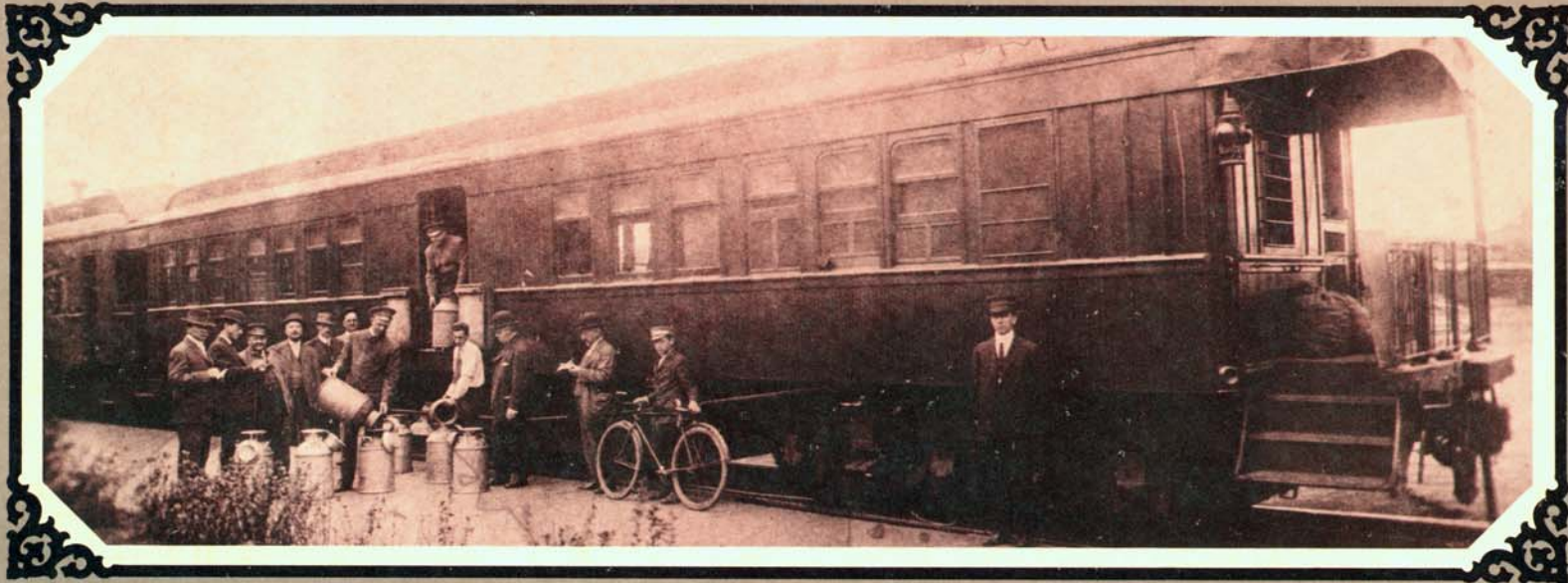


THE FISH CAR ERA

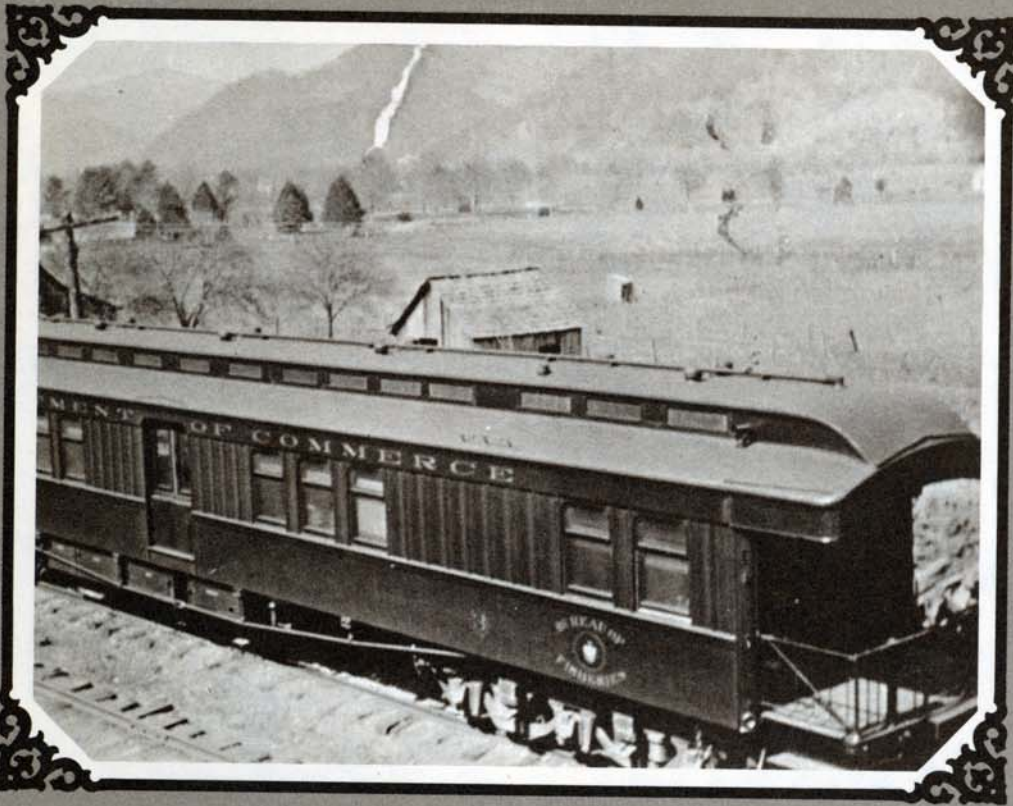
Department of the Interior · U.S. Fish and Wildlife Service



The Fish Car Era of the National Fish Hatchery System

Author John R. Leonard of the Fish and Wildlife Service's Division of National Fish Hatcheries acknowledges assistance from the following: Renee Jaussaud of the National Archives and Ted Fearnow, for historical information; the Still Pictures Branch of the National Archives, the Erwin National Fish Hatchery, Ed Forner, Robert Thoesen, and Monte Stuckey for photographs; and Grace Jackson and Galen Buterbaugh for the fish car uniform and equipment.





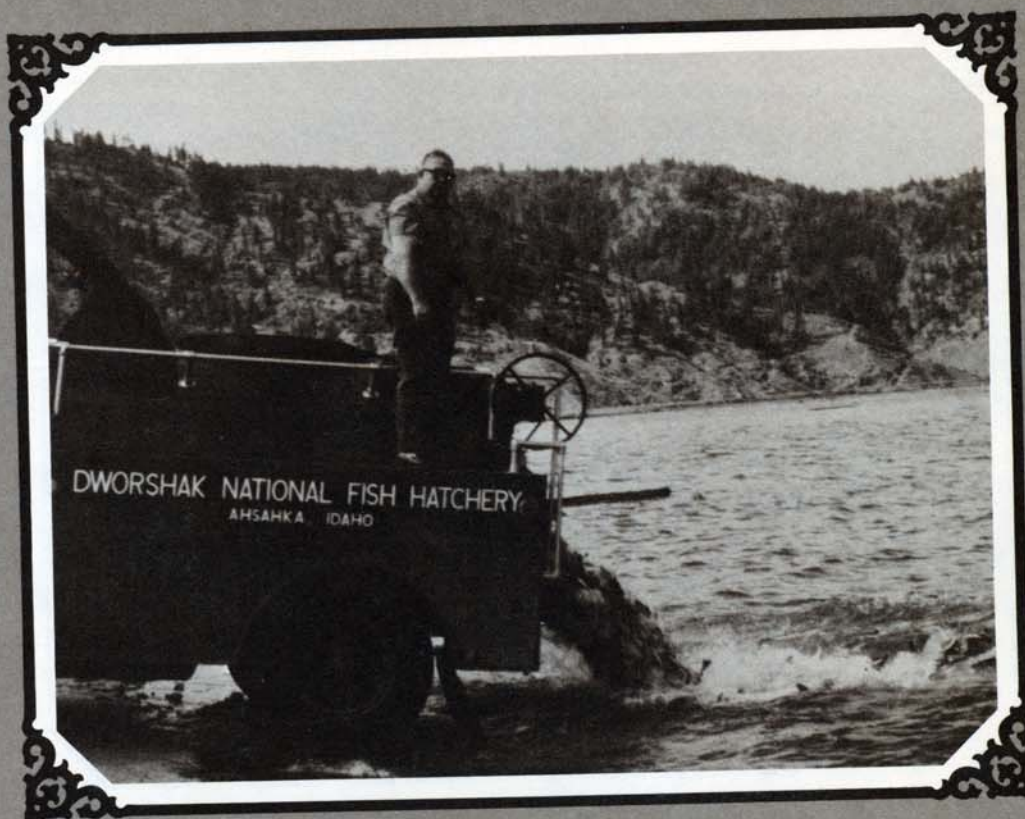
Traveling coast to coast by train is no easy trip today. But back in 1874, just 5 years after the first transcontinental rail linkup, the journey was a downright arduous expedition—especially when tending 35,000 shad fry. For Dr. Livingston Stone of the U.S. Fish Commission (a forerunner of the U.S. Fish and Wildlife Service), the trip was also a unique challenge. His job was to get the fish fry to California safe and sound for planting in the Sacramento River and other Pacific coastal streams.

The fish were carried in open milk cans, and Stone changed the water every 2 hours—if water was available. After days of such round-the-clock care, most of the shad fry arrived safely. As a result of the successful experiment, a new species was established on the West Coast for sports anglers

and commercial fishermen.

Nowadays a fleet of modern tank trucks transports more than 200 million fish a year from Fish and Wildlife Service National Fish Hatcheries to stock many of the nation's rivers, lakes, and coastal waters. Some 48 species reared by over 90 Federal hatcheries are carried in cooled, oxygen-aerated, constantly circulated and cleansed water. Indeed, the science of fish transportation has been so highly developed by fisheries experts that virtually all of the fish arrive at stocking points in sound condition.

Things were different a century ago. The science was still young. And it was the beginning of what a few Fish and Wildlife Service veterans can fondly recall as the "Fish Car Era." The problem in 1872, when the U.S. Fish Commission was first set up, was how to quickly



move fish from hatcheries to far-off waters throughout the country. Because of transport limitations, fish were generally first planted in areas near the rearing stations.

Pioneers like Stone and others soon devised techniques to safely carry fish long distances. In 1879, for example, Stone successfully shepherded a shipment of striped bass from New Jersey to California. During the lengthy train journey, the milk cans containing the fry were cooled by ice. Fellow passengers were hired by Stone to help aerate the water by hand. A few years later he took another shipment of fish across the country. But this time a new aerating device was used. A cylinder with tiny holes in the bottom was filled with water and held over the cans, releasing a fine spray of air-enriched water.

It was clear by then that fish could be effectively transported by rail. The basics of the science were evolving. Most important, the water in fish containers required frequent aeration. A suitable water temperature was necessary. And the importance of adding ice to the water was recognized. The colder water both absorbed more oxygen and also reduced the oxygen needs of the fish. The water had to be kept free of slime and impurities. Before being loaded, it was helpful to confine the fish for a few days without food.

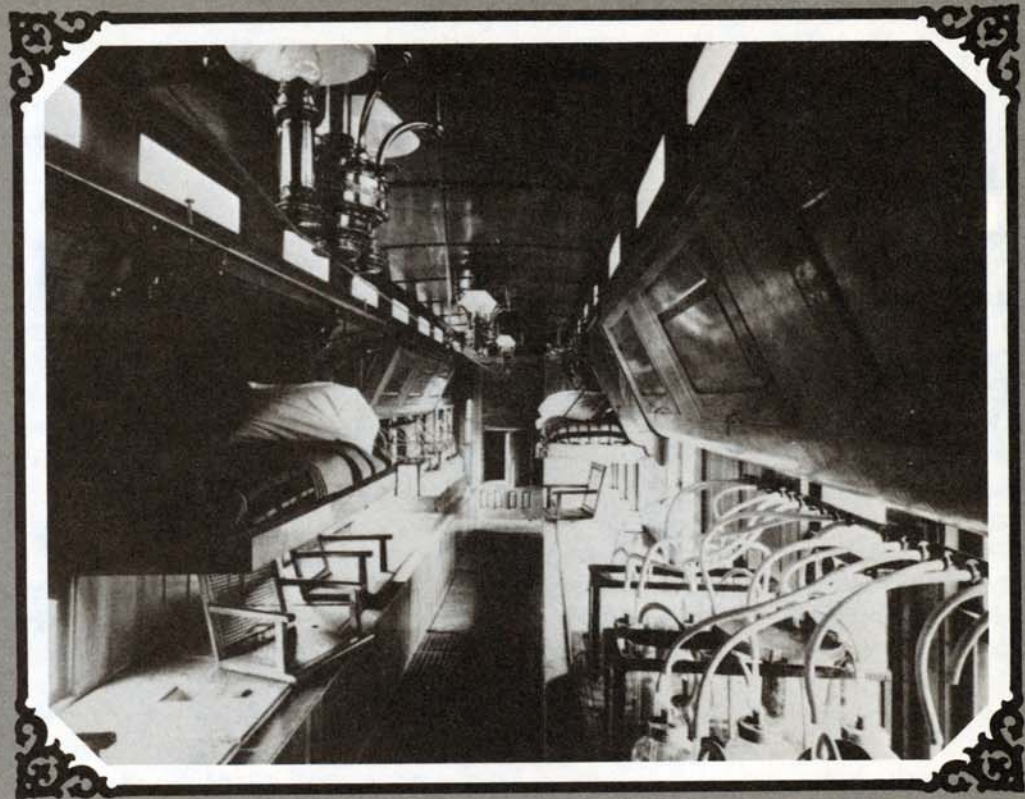
Rail shipments of fish increased as the interest in “managing” streams and lakes spread. Containers were shipped in baggage cars, accompanied by Government fish culturists who were called “messengers.” Their task was to aerate the water and generally make sure

their live cargoes arrived in sound condition. With the volume of such traffic steadily rising, the Fish Commission decided in 1881 to purchase a “fish car”—a baggage car specifically equipped for carrying fish.

The improved efficiencies and economies of the first fish car were compelling. In 1882, the Commission invested \$7,334 in a new and improved version. Fish Car No. 2, built by the Baltimore and Ohio Railroad, was fitted with special compartments to hold ice. The car was reinforced so it could carry as much as 20,000 pounds of fish, water, and equipment at passenger train speeds. From that time on, until the “Fish Car Era” ended, Federally raised fish traveled first class in railroad cars designed for their health and comfort—along with their human attendants.

So successful was Fish Car No. 2 that a third coach was built in 1884 and added to the fleet. This car could not only carry fish but also fish eggs which would be hatched in transit. The first trial came in 1886 when 600,000 shad eggs were sent from the Battery Station on the Susquehanna River in Maryland to Portland, Oregon. The eggs had hatched and become thriving fish fry by the time they reached their destination for stocking in the Columbia and Willamette Rivers.

The rise in the number of Government hatcheries prompted the purchase of another fish car in 1893. Each car was more advanced than its predecessor. Car No. 4, for instance, had cedar tanks, an air pump to aerate the water, and other special equipment. At the turn of the century, the Fish Commission had become



the Bureau of Fisheries, and two more cars had been acquired.

By this time, the fish cars were crisscrossing the country, sometimes en route as long as 10 days (with fish losses held down to only 1 percent). They generally operated from April through November. During the other 4 months of the year, the cars were laid up for repair and maintenance.

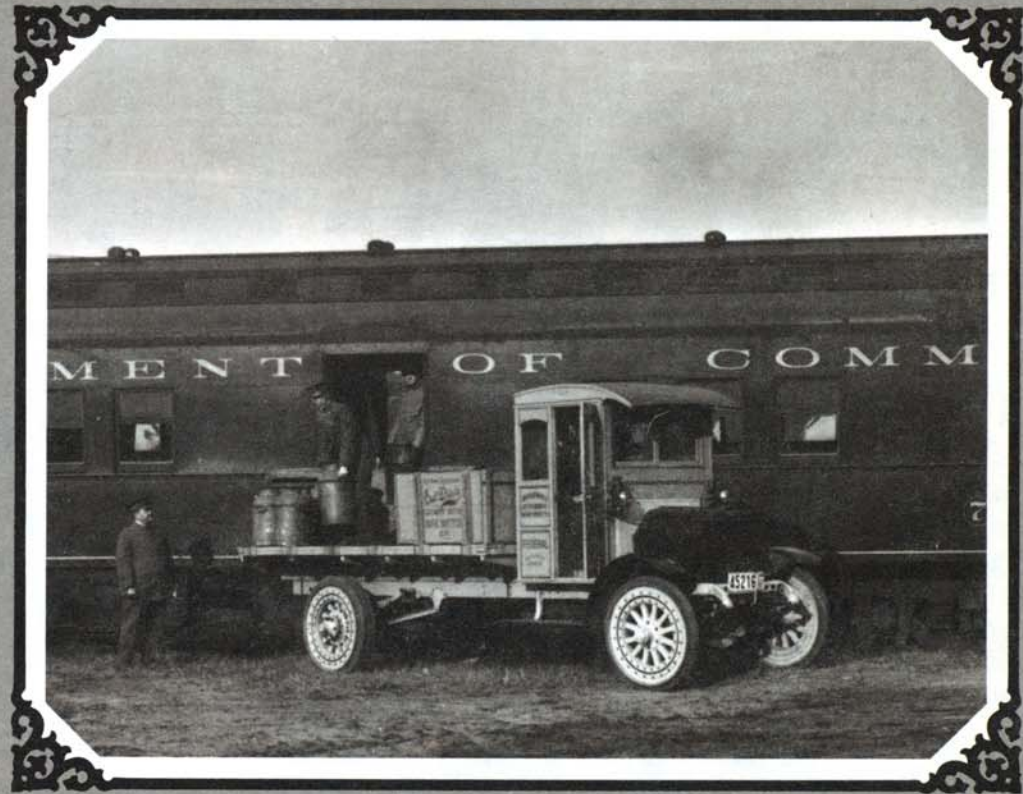
Each car, which could carry about 150 10-gallon cans containing some 15,000 3-inch fish, was like a little self-contained world on wheels. The five-man crew included a fish car "captain," several "messengers," and a cook. They traveled, ate, and slept in comfort. One car even became a honeymoon coach for an employee and his new bride. As the fish car rumbled toward the Valley City Hatchery in North Dakota, the crew's cook prepared



a wedding feast in his little galley.

Fish delivery service was free of charge. A shipment would be picked up by recipients at the rail station nearest to where the fish were being stocked. If no rail terminus was nearby, a fish car messenger would unload 25 or 30 pails of fish and transport the shipment to a more convenient pickup point. The applicants receiving the fish would be notified ahead of time by telegraph. Given the vagaries of rail travel, there were occasionally missed connections. But the great bulk of the fish were successfully planted.

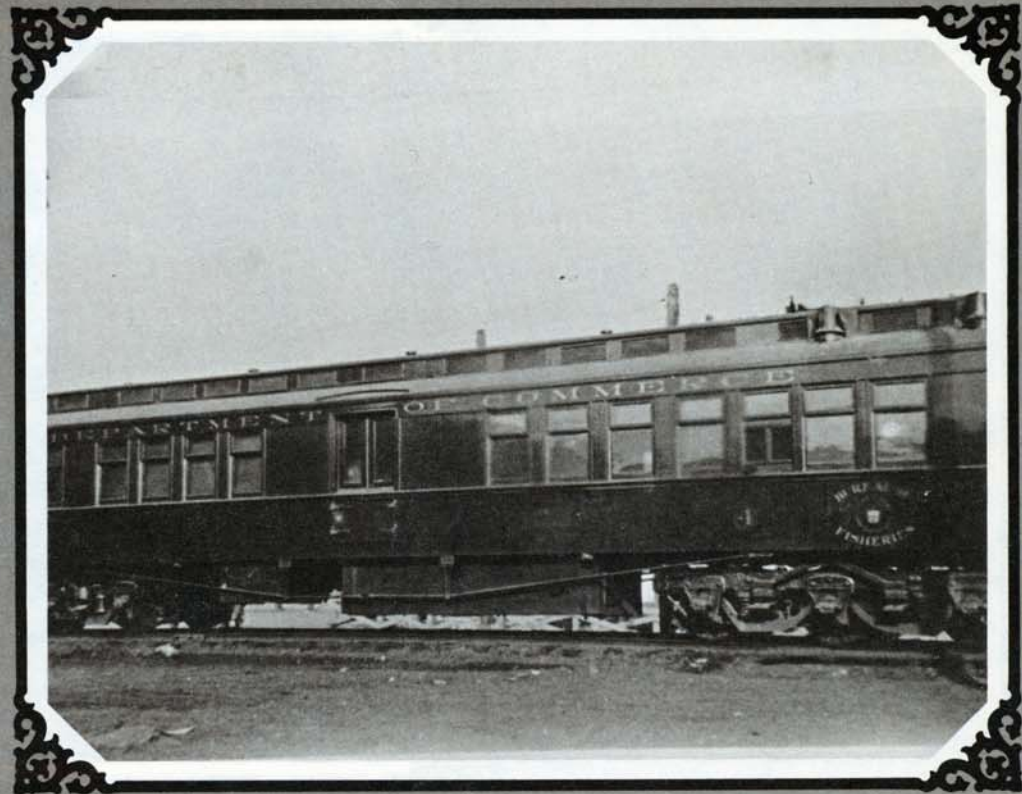
Railroads welcomed the fish cars, generally charging only 20 cents a mile to haul the cars and their crews. Indeed, the railroads so appreciated the benefits of having the waters along their routes stocked for free that they levied no charge

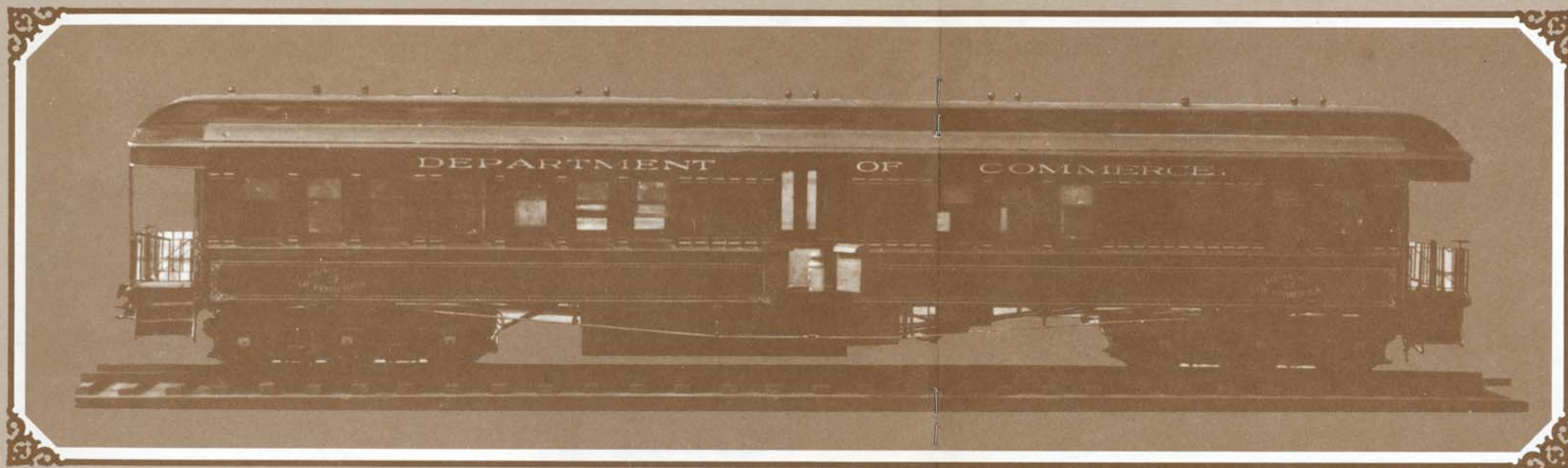


for up to 50 percent of the annual fish car mileage. Messengers accompanying "detached" shipments rode for reduced rates, or at no cost. And the emptied cans and pails used in hauling the fish were shipped back to the Commission free.

The uniquely outfitted cars themselves became attractions, participating at various festivals and exhibitions such as the New Orleans Exhibition of 1885, the Chicago World's Fair in 1893, and the 1901 Pan American Exposition in Buffalo, New York. At times, though, the cars were less appreciated by railroad men. With their novel cargoes, the fish cars were much heavier than normal passenger coaches. And in spite of precautions, they were involved in several accidents.

Fish Car No. 4, for example, weighed 42,780 pounds. One of





Model of a fish car (scale $\frac{1}{12}$) on display at the National Fisheries Center, Leetown, West Virginia

the heaviest railroad cars in the country, it was blamed for a 1911 wreck near Bridgeport, Connecticut, which killed 13 people and injured 48. The excessive weight of the car had purportedly delayed the *Federal Limited* for an hour. The engineer, anxious to make up the lost time, was reportedly speeding when the wreck occurred. According to a newspaper account, the car had been involved in at least one other near-accident and was regarded as a veritable "hoodoo" by railroaders. Later investigation showed Car No. 4's allegedly unlucky past was more fiction than fact.

The modern "Fish Car Era" was ushered in with the delivery in 1916 of the first steel car, Fish Car No. 7, which had a fish-carrying capacity of 50 percent more than the existing wooden models. Indeed, a number

of railroads were becoming reluctant (for safety reasons) in those years to hook the older wooden cars to their high-speed passenger trains. So three were replaced by new steel cars with advanced equipment and twice the fish-carrying capacity.

The technology of fish transportation was also changing. By the early 1920s, the traditional 10-gallon milk can containers were succeeded by new lightweight containers called "Fearnow" pails. These containers weighed only 5 pounds but could carry twice as many fish as the older milk cans, while taking up half the space. Moreover, each "Fearnow" pail had a special built-in compartment for ice to keep the water cool. At the same time, the manual aeration of water in the containers began to be replaced by more modern meth-



Fearnow fish pail

ods—electric or jet aerators that used compressed air. Several of the new steel cars used air from the train lines to aerate the fish.

By the early 1920s, the fish cars had accumulated an impressive record. A 1923 report indicated that, over the previous 20 years, the output of the various hatchery activities amounted to 72,281,380,861 fish which were distributed by fish cars traveling 2,029,416 miles and detached messengers 8,104,799 miles. Most of the shipments were made up of freshwater or anadromous fishes—pike, perch, shad, whitefish, trout, carp, landlocked salmon, and others. Regional resources were exchanged. Lobsters and blue crabs, for instance, were carried from Woods Hole, Massachusetts, to San Francisco, and dungeness crabs from San Francisco to the Chesapeake Bay. Such



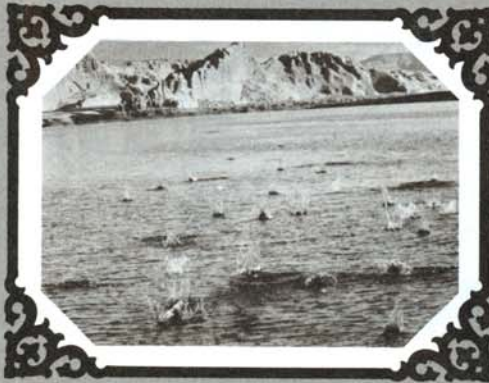


“transfers,” to enrich the aquatic potential of one region or another, were common. Non-native species such as brown trout, shad, and carp were introduced in various areas. The cars were also a key link in the distribution of fish to private organizations and local government agencies, as well as aquariums and public exhibitions.

Tronically, the queen of the fleet was delivered shortly before the “Fish Car Era” began to wane. Fish Car No. 10, a \$59,000 behemoth built in 1929, stretched 81 feet. Its insulated compartments could hold 325 cans containing 34,000 3-inch fish or 500,000 1-inch fish. The car even had its own generator to operate all the equipment, including the electric aerating devices. The shiny new No. 10 and the other fish cars seemed to burn up the rails as the decade came to a close. During one

2-month period, according to the records, "fish were sent to virtually every State in the Union, and the cars were kept busy day and night." The cars and the messengers together covered an astonishing 505,853 miles in fiscal year 1930.

Still, No. 10 was the last fish car ever constructed. In 1928, 27,000 brook and rainbow trout were transported by airplane from Northville, Michigan, to Dayton, Ohio, without a single loss. The successful flight showed that fish could be quickly and safely carried long distances by air. More important was the growing distribution by truck. In 1930, the vehicles were limited to a 60-mile radius of a hatchery. But by 1932, improvements in the trucks, together with favorable cost comparisons, were making an increasing impact. Some 17 per-



In the late 1950's and 1960's, air stocking provided an innovative way of distributing fish in remote backcountry waters. Under ideal conditions more than 95 percent of fish dropped by airplane survive.



cent of the output of hatcheries was hauled by truck in 1933. Meanwhile, budget cutbacks were restricting fish car operations. By 1937, modernized tank trucks were equaling the mileage of the fish car rail fleet.

There was no holding back progress. The hard reality was that distributing fish by truck was less costly and more efficient than using the traditional fish cars. As a 1939 Bureau of Fisheries report put it, "The same number of fish can be carried by truck as by distribution car, to destinations within a radius of approximately 300 miles, at about one-fourth the cost." With Federal hatcheries now located in many States throughout the country, most shipments did not have to be carried much more than 300 miles.

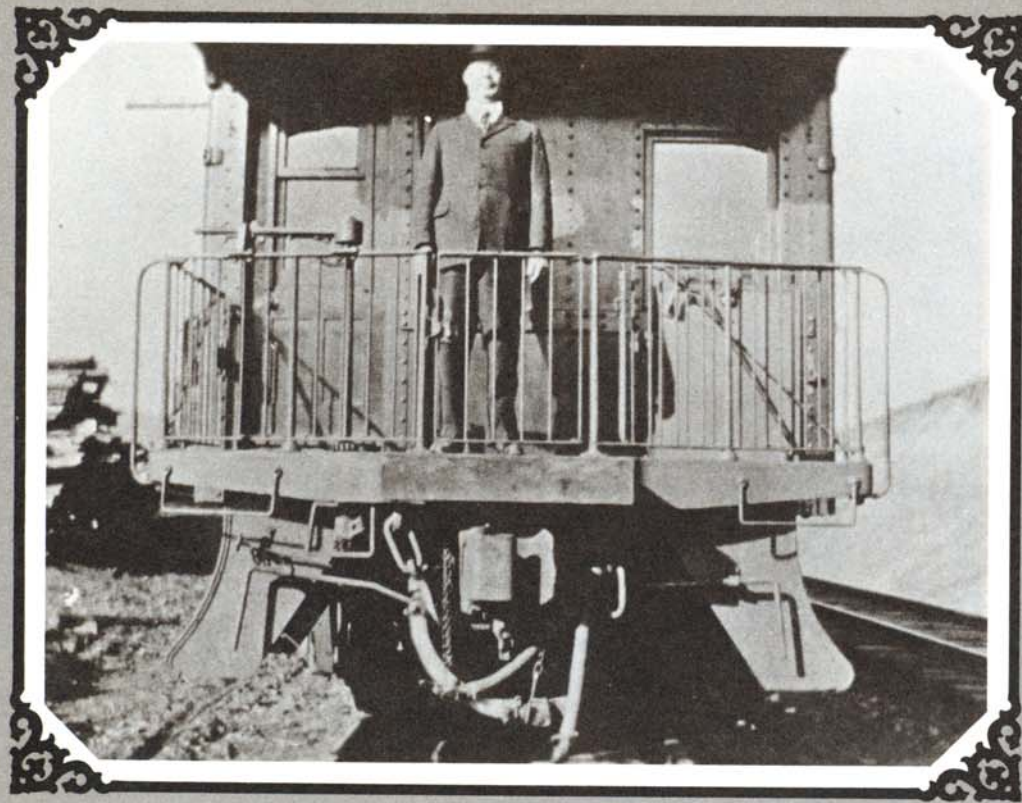
By 1940, only three fish cars were still operating. One of the cars was

wrecked in 1944. The fate of another is unknown. The last fish car, the mammoth No. 10 which was the pride of the fleet, was finally taken out of service in 1947, its equipment scattered among the various hatcheries.

An era had come to a close, in the name of greater efficiency. Indeed, for the Fish and Wildlife Service veterans who manned the fish cars, the disappearance of car No. 10 marked the end of a unique and romantic way of life. The fish cars may have become outmoded. But for 66 years they had played a key role in enriching the nation's natural resources—and in the process, created a proud tradition.



Fish car uniform, ca. 1917



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