Freight cars, like passengers, sometimes must change trains. The Pennsylvania Railroad operates 1,600 freight trains a day. Four hundred of these are fast, through trains which run between major points like St. Louis, Chicago and New York, and cars between these points usually do not have to change trains. But the Pennsy serves a total of 2,400 cities and towns throughout 13 states and the District of Columbia, and most of them do not generate enough cars for any single destination fast enough to justify a through train. Instead these cars are picked up by local freights which bring them into “classification yards” scattered throughout the system. Here the cars are sorted out according to destin-
tion so they can be attached to the proper trains.

Conway Yard is designed to compress the job of sorting out or "classifying" freight cars into the shortest possible time. When operating at full capacity Conway can classify more cars—9,000 per day—than any other yard in the country. It serves as a gigantic clearing house for the Pennsylvania's enormous east-west traffic between the Middle West, the Great Lakes and the Eastern Seaboard, virtually all of which funnels through the Pittsburgh gateway. Instead of going through several classification yards en route, thousands of cars will now be brought unclassified to Conway and sorted centrally in the Pennsylvania's most efficient yard, then relayed in solid blocks direct to their destinations.

Cars will accumulate faster in Conway, enabling more frequent trains to be dispatched. It is estimated that Conway's faster classification will make possible time savings of up to a full 24 hours on east-west freight schedules.

Automation is the keystone of Conway Yard. Radar, coded circuits, electronic computers, intercoms, inductive trainphone, micro-talkie radios, electronic scales, automatic floodlights, cab signals, pneumatic tubes, tape recorders, teletype—every known advance in automation and technology which can speed the classification of freight cars has been built into Conway.

CONWAY YARD: KEY TO BETTER SERVICE

The Pennsylvania Railroad has invested almost 35 million dollars in Conway Yard to achieve better freight service. This ultra-modern facility will provide the railroad's customers with faster and more efficient transportation, benefiting not only the shippers themselves, but the entire consumer public as well.

Since the end of World War II, the Pennsylvania has spent well over a billion dollars for modernization and improvement. Economists predict that the nation's transportation requirements will increase about 40 per cent over the next ten years. The Pennsylvania is moving as fast as it can to get ready for this great surge in the national economy.

Modern railroading is also a highly technological business, offering many opportunities for capital improvements that can produce a substantial return on their investment. In savings of time and increased efficiency alone, Conway is expected to pay for itself within three or four years. This project was therefore not only an essential step in preparing for the future, but a fundamentally sound business investment as well.

While the Pennsylvania's postwar improvement program has been large, it could be larger still except for the fact that earnings are too low to justify many needed projects or to attract new equity capital. This situation of low earnings is typical in the railroad industry. For example, in 1956 the nation's railroads earned a rate of return on their investment of only 3.30 per cent. In all the years since World War II—years of great national prosperity—the railroads' rate of return has averaged only 3.75 per cent.

Compared with other leading industries on the basis of return on net assets, in 1956 the railroads' rate of return was a little more than one-half as much as the public utilities, one-third as much as the automotive industry, and only one-quarter as much as the aircraft manufacturing industry.

In order to get the funds to continue improving and modernizing itself, the Pennsylvania—like all other railroads—must be permitted (1) to price its transportation services flexibly in keeping with changes in costs and competitive conditions, (2) to eliminate transportation services that its customers no longer require, while at the same time experimenting with new services, and (3) to compete on a more equal basis with its rivals as regards government subsidy, taxation and regulation.

As competition in the transportation industry is placed on a more equal basis, the Pennsylvania will be able to make more improvements like Conway Yard—improvements that will benefit not only the railroad but its customers, the consumers, and the economy of the entire nation through better transportation service at lower rates.
HOW CONWAY WORKS

1. **CAR NUMBERS** are read off as train enters yard, picked up on tape recorders in main yard office.

2. **INSPECTORS** check each car thoroughly as soon as train arrives, use tiny radio transmitters to report any cars requiring repairs.

3. **LUBRICATING** cars is done efficiently at stationary positions as cars move toward hump.

4. **TAPE RECORDINGS** of car numbers are used to verify lists showing destination of each car, which form basis for operations at hump.

5. **WESTWARD CLASSIFICATION YARD**

   - Hump
   - Conductor Office
   - Main Office
   - Retarder Tower

   Cars go over hump one every 15 seconds. Below: PUSH BUTTONS or coded tapes set up route in automatic machine which throws track switches, guides car into proper classification track.

   1. **FROM CHICAGO**

   2. **OHIO RIVER**

   3. **THE HUMP** is the focus of yard operations. Cars go over hump one every 15 seconds. Below: PUSH BUTTONS or coded tapes set up route in automatic machine which throws track switches, guides car into proper classification track.
AUTOMATIC RETARDERS grip the wheels of each car as it coasts through, slowing down the car to safe coupling speed.

ELECTRONICS and the law of gravity team up to make Conway work. Incoming strings of cars are pushed up an elevated "hump" where the cars are uncoupled and coast down the other side into various "classification tracks." Conway has 99 classification tracks, some almost a mile long, and each track represents a different destination. As each car goes over the hump its route is set up in a master control machine which works the track switches. Radar and other electronic devices measure the speed, weight and rolling characteristics of the car, as well as the distance it must coast. Even the wind resistance and the amount of moisture on the rails are automatically taken into account. This information is fed into electronic computers governing the "retarders" which automatically brake the car just enough so it will coast to a stop gently in the right place. The track switches are not set in advance, but each switch aligns itself automatically as the car approaches, enabling cars to follow each other down the hump at closer intervals. The progress of a car from the time it goes over the hump until it comes to rest in its proper classification track is controlled virtually automatically.

THROUGH TRAINS like "TruTrain," Pennsy's fast piggy-back service, move directly through Conway by-passing the hump.

NEW TRAINS are assembled at the opposite end of the classification tracks by locomotives which pick out strings of cars bound for the same locality.

TRAIN LEAVES CONWAY. Classification time as short as 4 hours permits freights to run on faster schedules, give more reliable service.