

You'd Be Surprised-BUT

The trucks of a Pullman car today weigh 10,000 lbs. more than the first Pullman weighed complete.

- There are a mile and a quarter of electric wires in the car.
- And a half mile of pipes for heat, water, wires and air.
- Besides a complete electric generating, storage and distributing plant operating lights, fans, etc.





BUILDING A PULLMAN CAR

THE Pullman organization not only operates its cars all over the North American continent, but it builds them, along with a large share of all other types of railroad vehicles. In the last half century it has constructed 41,120 passenger cars, including sleepers, day coaches, parlor, dining, observation, baggage, mail, express and private cars, and also has built for practically every railroad in the country a total of 312,718 freight cars. All these cars assembled in a single train would make a string from Washington to Los Angeles via St. Louis and Kansas City, and leave a few miles over for good measure.

At the great plant at Pullman, in a labyrinth of large and small buildings and railroad tracks covering 323 acres, is housed the major part of Pullman passenger car building activities; in fact, of the country's, for in 1929 the concerns now within the Pullman corporate system manufactured 73 per cent of all passenger train cars.

The all-steel car of today is the product of a series of sub-assemblies. 1



RIVETING OUTER PLATES ON CAR'S FRAME

First comes the underframe, the car's foundation; an assembly of heavy steel parts into the weight-bearing, stress-resisting backbone of the structure. It must carry the weights above, must bear the strain when a mighty locomotive pulls a long train upgrade, must resist the tremendous impact when speed is suddenly slackened. It is the car's backbone; in fact the series of vertebrae, in a coupledup train, is astonishingly like the spinal

column of some prehistoric monster.

When the underframe has been "laid down," other sections previously assembled are superimposed on it. Thus you will see a [] [] [] [] []

A HUGE CRANE LOWERS THE CAR'S SIDE IN PLACE





INSTRUCTION CAR TO DEMONSTRATE MECHANICAL FEATURES

fabrication of steel parts picked up by an overhead crane, carried to the underframe, and lowered into position. Then you recognize it as the skeleton of the car's side. Ends, sides and roof are thus fitted into place, reamed, bolted and riveted, sand blasted to remove scale and rust, and given a priming coat of paint. Insulation, water pipes, steam pipes, conduits full of wires, along with insulating materials, are installed between inner and outer shells of walls, ends, and roof; and when the inner shell of sheet steel is in place, the car is ready for painting. The schedule for interior painting covers twenty

days. First a priming coat, requiring two days to dry. Then an intermediate coat, a mixture of priming and surfacing paint; after this a filler is worked into irregularities of surface, leaving it even. This having dried, it is smoothed, sandpapered, gets a ground color coat, more filler, and yet more ground color coats. Then sanding, graining, and two days' drying; and on the thirteenth day the first varnish is put on, followed by the application of decoration and ornamentation. Another coat of varnish leaves

it needing only to be rubbed down with pumice and water. Exterior painting requires sixteen days, plus two more for drying.

How Pullmans have grown is suggested by the fact that trucks of a present day car weigh about 47,500 pounds, while the first Pullman, complete, weighed only 37,500. The truck is largely cast steel, a huge frame cast in a single piece being the basic member. There are both elliptical and coil springs of finest tempered steel;



REAMING COVER PLATE PRIOR TO RIVETING

and the car's weight is hung so low that its center of gravity is only 51.4 inches above the rail, although the top is 14 feet.

Being now on its own wheels, painted inside and out, the car is ready for trimming. Doors and upper berths are hung, sash fixed in place; basket racks, lamp fixtures, signal and emergency valve cord guides and other incidentals installed. Meanwhile the water supply system has been put in, together with plumbing, air



RIVETING VESTIBULE END FRAME

brake apparatus, battery boxes, water tanks, dynamo, etc. Then come seats, carpets and hangings; and with these in place the air brake, electric, steam and water systems are given thorough tests, as are wheels, axles, couplers, and draft gear. When the car is finished and has passed every shop test, it gets the final one of service; and when it is ready to go out on the road it is ridden by experts until they know it is right.

Construction of a standard Pullman,

from materials in stock, re-quires from 50 to 55 days; of a compartment car, about 60 days. Everything entering the construction is subject to the most rigid tests and inspections that science and mechanical ingenuity can devise. Although every effort is exerted to make it a model of comfort, convenience and compact facilities, safety is at every step the prime consideration. Because of rigid adherence to such high standards, Pullman cars are known the world over as the safest of all vehicles.

It has been a Pullman rule from the beginning that nothing is good enough unless it is the best. Every improvement made possible by advances in mechanical art or metallurgic science has been built into the Pullman. Not only are experience and investigation always at work to produce better things, but the product of their united efforts is made available to patrons just as soon as possible. This policy has earned the Pullman's repute as the last word in railroad vehicle building.



RIVETING GIRDER PLATES

PULLMAN TICKETS are on sale at 4,200 railroad ticket offices in the United States. It is advisable to secure your Pullman accommodations at the earliest moment.

All ticket agents and Pullman employes will help you in arranging this detail of your journey. THIS IS ONE OF A SERIES OF TWELVE BOOKLETS, THE TITLES BEING AS FOLLOWS:

- 1. Service You Get With Your Pullman Ticket
- 2. The Evolution of the Pullman Car
- 3. The World's Greatest Housekeeper
- 4. Building a Pullman Car
- 5. Safety First, Last and All the Time
- 6. Scientific Ventilation in a Pullman
- 7. How a Pullman Car Is Lighted .
- 8. Hidden Mechanisms of a Pullman Car
- 9. The Pullman Bureau of Tests
- 10. The Peripatetics of a Pullman Car
- 11. Exploding the Myth of Cheaper European Rates
- 12. Travel the Educator

COPIES OF ANY OF THESE BOOKLETS WILL BE MAILED ON APPLICATION TO THE PULLMAN COMPANY, CHICAGO, ILL., U. S. A.

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