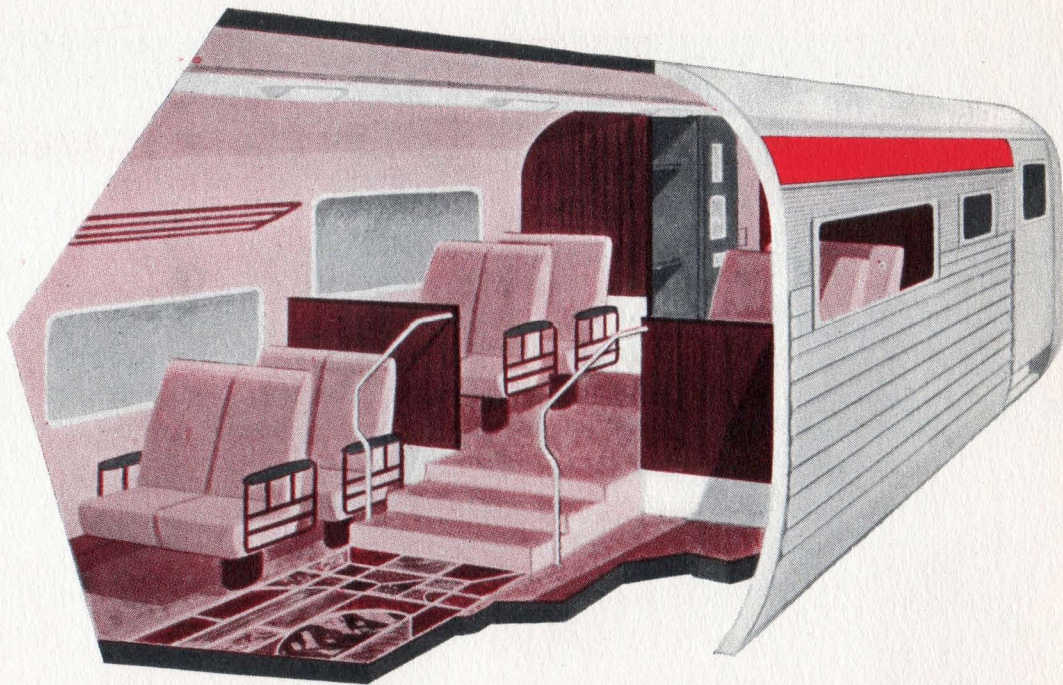




*About the New Tubular Train*

*Interior view of a  
tubular train coach. Two-level  
floor aids low center  
of gravity, insuring comfort on  
curves at higher speeds*



**E**ARLY IN 1956 a train of "rail-hugging" two-level passenger cars shown on the cover will go into service on the Pennsylvania Railroad. Revolutionary new tubular design makes its center of gravity the lowest ever engineered for railroad cars, permitting faster schedules, increased passenger comfort, and sharply reduced construction, operating and maintenance costs.

Including seven coaches seating 574 passengers, and a matching power car for lighting, air conditioning and heating, the tubular train will be tested on daylight runs between New York, Philadelphia and Pittsburgh, using existing electric and diesel locomotives. It is being built by The Budd Company at a cost of somewhat more than \$1,000,000.

The new cars, each riding on two 4-wheel trucks, have the same 85-foot length as existing coaches, but are nearly two feet lower and weigh 40% less. Concentrating

electric generating equipment in a separate power car, instead of requiring each car to produce its own electricity, as in conventional trains, is an important factor in cutting costs. Maintenance will also be simplified.

Compared with coaches built only three years ago the new cars will show savings of about 25% in cost per passenger seat. Further reductions through quantity production are anticipated.

Tubular design, a complete departure from conventional car construction, produces a body structure in which the roof, floor and sides constitute a sturdy, car-length steel tube of great strength and low weight. Because the whole body replaces the usual steel underframe, the car is built closer to the rails and its floor lowered in the center section. This drops the center of gravity by more than a quarter, to only 39 inches above the rails.

Speed at which trains may round curves without

discomfort to passengers is determined by the center of gravity of the cars. Low centers of gravity are inherent in diesel and electric locomotives, so by reducing that factor in the cars train speeds can be materially quickened on curves with full safety and comfort for the passengers. Reductions of at least 15% in running time will be possible.

Two-level floor design permits an interesting interior arrangement. Each car is divided into smoking and non-smoking areas for 82 passengers, with reclining seats in the lower section and at one end, and lounge chairs in a smoking area at the opposite end. Facilities will be provided for light food service to passengers in their seats. There are lavatories, electric drinking water coolers and luggage compartments in each car, as well

as overhead baggage racks. Vestibules are at convenient height for easy entrance and exit at all metropolitan stations on the Pennsylvania Railroad.

Cars may be readily attached to or taken from the train, giving it desirable flexibility in meeting varying traffic demands and making for most efficient operation.

The train was developed by a Mechanical Research Committee set up by six railroads, including the Pennsylvania, to plan passenger equipment of entirely new types completely adapted to modern transport needs. Its tubular design and other developments characterizing this approach to rail travel are among the results of the committee's six months' study of all present and proposed concepts for modern passenger equipment in this country and abroad.

## **PENNSYLVANIA RAILROAD**