

the statutory limit in over 30 States at the present time. We might even state that it is also the general basis for the design of the Interstate System.

The AASHO road test also showed the frequency of allowable axleloads is also a matter that must be taken into consideration.

Work at the road test developed a method of converting any axle loading into an "equivalent number of 18,000-pound, single axleload applications" as a standard reference.

It was demonstrated that the 20,000-pound, single-axle load is equivalent to 1.60 applications of the 18,000-pound axle; the 22,000-pound, single axleload is equivalent to 2.37 applications of the 18,000-pound axle; and that the 24,000-pound single axle is equivalent to 3.45 applications of the 18,000-pound single axle.

The results of the increasing frequency of loadings can be seen from the following table developed for rigid pavements which, in turn, is measured by the number of applications required to bring about fatigue failure in pavements of certain thicknesses. Flexible pavements perform in a somewhat similar pattern, and it is readily apparent that increasing loads seriously shorten the remaining life of the pavements.

Our table on required pavement thickness in inches shows:

NUMBER OF SINGLE AXLE LOAD APPLICATIONS TO BRING PAVEMENT TO UNSATISFACTORY CONDITION
[In inches]

Applied axle load (kips)	100,000	1,000,000	10,000,000
18.....	3.8	5.8	8.4
20.....	4.3	6.2	9.0
22.....	4.6	6.6	9.6
24.....	4.8	7.1	10.2

The foregoing common denominator techniques used in conjunction with traffic forecasts are used in determining remaining life of highways and in determining when funds will be needed for heavy maintenance or strengthening operations or for replacement.

Recognizing the need to optimize the use of the extensive existing highway plant, AASHO, through the transport committee, developed a draft policy of maximum weights and dimensions in 1964.

At the time of the balloting by AASHO, in 1964, the transport committee offered the State highway departments the option of voting on either the 32,000- or 34,000-pound tandem axle, on the basis that the optimum balance of the best use of the highway lay somewhere in that range, and with the supposition that the Interstate System might be completed before too long, which would make the highway funds then available to rebuild and modernize the some 200,000 miles of mainline primary highways in this country within a reasonable time.

At the present time, however, it appears that the completion of the Interstate, and eventually being able to turn our efforts to beefing up the primary system, seems to be moving further and further into the future, and that much of our highway system may have to accommodate increasing traffic densities and weights longer than we had hoped.