

CLOSING THE GAPS

By Thos. H. MacDonald, Chief, U.S. Bureau of Public Roads

Approximately 26,000 miles is the estimate of the roads to be constructed this year under the supervision of the State highway departments. Probably more than 21,000 miles will be on the Federal-aid highway system, and somewhat less than half of this improvement will be carried on with Federal aid. The year's addition to the Federal-aid system will bring the mileage of that system initially improved up to practically 150,000 miles, leaving only 35,000 miles of the roads thus far designated to be constructed in order to complete the initial improvement of the system.

More rapidly than most of us realize the main highway system of the United States is being brought to a condition of continuous improvement. We are still a long way from the condition that will ultimately be required but we are moving toward it at a surprisingly rapid rate. Roads we are now improving with gravel and other low-type surfaces will eventually have to be further improved. Narrow present surfaces will need widening; bridges which

suffice for the present will need replacement; grade crossings tolerated in the initial improvement must be later eliminated; and the whole system as originally constructed must be combed over to root out of it the danger places, the congestion breeders, and the failures of one sort or another inevitable in a construction work of such magnitude. These are refining processes and they will continue indefinitely; but the fact remains that we are now rapidly approaching the time when we shall have a continuous network of main State and interstate arteries improved throughout to some degree at least, and all of it under maintenance by the State highway departments.

Some idea of the present condition can be gained from the logs of the United States highway system now being compiled. Take Route 40, for example, the mid-continent route which runs from Atlantic City to San Francisco. Westward from its eastern terminus this road passes through Wilmington, Baltimore, Wheeling, Columbus, Ohio, Indianapolis, St. Louis, Kansas City, Topeka and Manhattan, Kansas, at which point it divides into 40 North and 40 South and takes the two courses to Limon, Colorado.

From Atlantic City to St. Marys, Kansas, just beyond Manhattan on 40 North, a distance of 1,302 miles, there is continuous pavement. The bells of St. Marys signal the end of the hard surface, but portend no great difficulty for the traveler. The pavement ends but the road beyond through Limon, Denver, Salt Lake City, Elko, Nev., and Auburn and Sacramento, Calif., to San Francisco, is mostly gravel surfaced and graded, with pavement again from Auburn to the terminus, and even the small mileage unimproved is for the most part under efficient blade grader maintenance. Cataloging the present condition of this road we find that 51 per cent of its 3,220 miles is paved, 15 per cent is gravel surfaced and the remainder is graded and drained or unimproved.

Route 30 from Atlantic City to Portland, Ore., is improved to a somewhat higher degree. This route, which coincides with the Lincoln Highway from Philadelphia to Granger, Wyo., and follows very closely the line of the old Oregon Trail in the West is 3,450 miles long. It is approximately 86 per cent surfaced with gravel, bituminous macadam or the higher types of pavement.

Down south the combination of Route 90 from Jacksonville to Van Horn, Tex., and Route 80 from Van Horn to

Los Angeles takes one across the continent with a journey of 2,640 miles. The route follows closely the line of the Old Spanish Trail and some of its sections are perhaps the oldest roads in the United States, going back as they do to the Spanish occupation of Florida and the Southwest.

Much of this line in Florida is already paved, and the balance now surfaced with sand-clay is scheduled for immediate paving. In Alabama there is approximately 33 miles of unimproved road which is being relocated to conform to the line established by the Mobile bridge. Across Mississippi the 91 miles involved is constructed of gravel with intermittent paving in the vicinity of the cities. In Louisiana a similar condition obtains for the entire 340 miles unless portions have been destroyed by the Mississippi flood. In eastern Texas an extensive paving program has been in progress for four years and is being continued. In West Texas the first serious obstacle is encountered in a considerable mileage of dirt road, maintained by county authorities, which is difficult, if not impassable, after protracted rains. In New Mexico the line is improved with gravel throughout except possibly 30 miles west of Masilla

Park which is under construction; and the rest of the way across Arizona and California the route is surfaced for the entire distance with gravel, plain or surface-treated, or pavement to Los Angeles.

The east coast route No. 1, from Fort Kent, Me., to Miami is approximately 76 per cent improved with sand-clay, gravel, bituminous macadam or high-type pavements, and much of the unimproved earth road - all in the South - is included in the 1927 construction program. It is reasonable to expect that the entire line will be completed as an all-weather route in time for the annual Florida travel next fall.

Route 11 which runs from Rouses Point, N. Y., to New Orleans, is 98 per cent surfaced with some kind of surfacing varying from sand-clay to pavement, and the 2 per cent remaining will be completed in 1927. This route passes through Syracuse, Scranton, Harrisburg, Hagerstown, Martinsburg, Winchester, Bristol, Knoxville, Chattanooga, Gadsden, Birmingham, Meridian, and Hattiesburg; and is continuously improved with gravel, sand-clay, macadam, or higher types of surfacing from the Canadian border to the Georgia line.

Mentioning only one more of the main through routes - and that the most completely improved of all - there is Route 99, the Pacific Highway which runs from the Canadian boundary near Blaine, Wash., to Los Angeles. This road is completely improved throughout with high-type pavements except for approximately 100 miles, which is improved with surface-treated gravel, immediately south of the Oregon line, and much of this section, I understand, is now being further improved. In combination with a section of Route 101, from Los Angeles to the Mexican border this route is 1569 miles long, and it is perhaps the longest continuous stretch of surfaced road in the United States.

These are only a few of the main through routes which are already far advanced in improvement. I have described their present condition, not with the thought of furnishing a guide for tourists but merely to indicate how near we have come to a condition of continuous improvement. As the improved sections of the through routes begin to draw together the tendency, rather strong in the early stage of improvement, to scatter construction is supplanted by the desire to fill in the gaps of the main roads and thus complete the through connections. The designation of the Federal-aid and State systems and more

recently the United States system has operated to center attention and effort on the improvement of the roads in each State which contribute most directly to a connected interstate system and serve the greatest numbers of people. The conception of a connected system is now firmly implanted in the minds of the highway authorities; and the influence of the Federal Government has recently been directed even more strongly toward such a concentration of effort. The next two or three years should see an intensive campaign to fill in the missing links, and we may confidently expect that by 1930 the totally unimproved sections of the principal through routes will be extremely rare if not absolutely non-existent.

These interstate and State routes are the trunk lines which carry the flood of traffic that flows between our principal cities. Into them there comes also a heavy volume of traffic from innumerable lateral connections serving a tremendous back country. Their construction and maintenance is financed through the public revenues - largely the direct contributions of the motorists and truckers who use them. On the roads themselves the traveler is rarely asked to pay toll; but the situation with respect to the

bridges is somewhat different.

The heavy flow of traffic concentrated on the State and Federal-aid roads and the public disposition to provide properly for the traffic are being capitalized by private corporations which obtain franchises permitting them to construct and operate toll bridges. In many cases the income from the tolls charged on these bridges - so heavy has the traffic become - is sufficient to pay the cost of construction in four or five years; yet the franchises under which they are built and operated often permit their owners and assigns to collect tolls indefinitely - forever if they wish.

There are cases in which the person or corporation originally granted a franchise holds it for speculative purposes only. The bridge is not built immediately but the right to build it remains with the holder of the franchise and none other until the increase in traffic resulting from the improvement of the approach roads at public expense gives high value to the bridge right, and it is sold for a large figure, all of which is clear gain to the original holder.

This is an utterly indefensible situation from every point of view, and the unlimited franchise, even

when used in a straight-forward manner to provide needed bridge facilities, is scarcely more justifiable from the public standpoint. The need for bridges on important highways and the heavy expense entailed by their construction, an expense which is concentrated at a single point; these facts are in many cases sufficient justification of the financing of the bridge by tolls collected only for a sufficient period to pay the cost of the bridge. A number of bridges have been constructed under various forms of this method, the tolls being collected in some cases by the construction company and in others by the public authority. There can be no great objection to this method which has built numerous necessary bridges which otherwise could not have been built.

The passage of the Oldfield bill at the last session of Congress provides a desirable means, hitherto lacking, whereby the Federal Government may assist the States in the construction of toll bridges on the Federal-aid highway system. Under the new authority granted, the Federal Government may contribute one-half of the cost of construction and the State may finance the remainder by means of tolls publicly collected for a sufficient period.

This arrangement should make possible the construction of bridges at points where heretofore the lack of available funds and an unwillingness to saddle a burden upon the future traffic for the enrichment of a toll bridge company have prevented the building of badly needed structures. It may now be hoped that the construction of such bridges will proceed at a rate fully consonant with the improvement of the roads of the system.