COUNTRY ROADS BOARD
VICTORIA

Chief Engineer's Visit Abroad, 1947

REPORT

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Visit of Chief Engineer to the United States of America and the United Kingdom, 1947

The Chairman,

Sir,

I have the honour to submit a summary of observations made and impressions gained during my recent visit to the United States of America and the United Kingdom.

Copies of my diary and typed notes on inspections, interviews, and discussions have been forwarded from time to time, and are available for reference in the Library, with relevant specifications, plans, technical papers, and other publications.

Every effort has been made to reduce the summary to a reasonable length. With this limitation it cannot be a comprehensive description of present practice in the countries visited, but is a brief description and discussion of those matters which either confirm or suggest amendment of our own organization and methods. Certain matters of general policy are dealt with because of the stress placed on them in the United States of America, and their importance in determining the objectives of any engineering policy or programme.

The number of subjects now recognized as important factors in determining the location, dimensions, shape, and composition of a road to carry present and future traffic, and the extensive study made of each of them, made it essential to resist the temptation to concentrate on any one at the expense of the others. The visit stressed the desirability of sending members of the Board's technical staff overseas to investigate their own subjects in detail. It was most gratifying to find that our own specialists are equal in calibre to those interested in the same matters abroad and that, with the same facilities and greater freedom from routine work, they would doubtless have achieved the same wide reputation.

Without the goodwill of Mr. T. H. MacDonald, Commissioner, Public Roads Administration, United States of America, and Dr. L. I. Hewes, Chief, Western Region, Mr. A. E. Aldington, Chief Engineer (Roads Division), Ministry of Transport, United Kingdom, Dr. W. H. Glanville, Director, Road Research Laboratory, London, and the help of their staffs and of the various authorities and organizations to which I was directed by them, little profit would have been gained from the journey. The co-operation received from all was such that any responsibility for failure to make proper use of the opportunities given must be mine alone. It is desired to express appreciation, not only of the assistance given to a representative of the Board, but of the personal consideration and kindness shown by all whom I met. One regret after this visit to the United States of America and the United Kingdom is the small chance of meeting, for many years at least, those with whom one has had such interesting and pleasant associations.

Yours obediently,

C. G. ROBERTS,
Chief Engineer.

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Section I—General Impressions

1. Two impressions arising from observations and discussions abroad stand out from the rest. The first was the American recognition of the need for facts, rather than preconceived ideas, as a basis for decisions, and the pains taken to obtain the necessary information, not only in relation to purely technical problems but also as regards matters of policy and higher direction. The second was the provision of ample qualified staff for the detailed investigation and engineering supervision without which proper planning and economical construction cannot be undertaken successfully. Other impressions which, with these two, form a background to the matters discussed in greater detail in this report were:—

2. Firstly, matters affecting the problem facing road authorities in the United States of America.

(*a*) The volume of traffic. In 1945 there were over 31,000,000 vehicles registered in the United States of America, or one to every 4·25 persons. In California the ratio was 1 to 3·5. The Arroyo Seco, an eight-lane expressway in Los Angeles, carries 70,000 vehicles per day, while the Bay Bridge, San Francisco, carries the same number at peak with six lanes.

(For purposes of comparison, the ratio of registered vehicles to population in Victoria is 1 to 7·3, and the Spencer-street Bridge, Melbourne, carries up to 33,000 vehicles per day.)

(*b*) The prevalence of long distance road haulage. When the difficulty of allowing unrestricted competition with Government-owned railways was discussed with a number of eminent engineer administrators, the view was

Common Carrier Truck Operated by U.S. Railway Company.

frequently expressed that past commitments which were essential to the development of a country could not be allowed to interfere with its further development now that new means of assisting it were available. The value of the improvement achieved in railway service by competition was also stressed, while one suggestion was that railway losses could be minimized by railway participation in road haulage.

(*c*) The high speed of all traffic. In the West heavy diesel-engined trucks commonly travelled at 50 miles per hour and buses faster.

3. Secondly, organization and general approach affecting the solution of the problem in the United States of America.

(*a*) The splendid work of the Public Roads Administration under Mr. T. H. MacDonald's leadership in raising the standard of road construction and administration to a high level. It is believed that this success is largely due to the spirit of co-operation with the States, and the technical service given them.

(*b*) General enthusiasm for highway planning based on factual data leading, in many cases, to re-surveys of the essential problems to be solved by State road authorities as guardians of the road users' money.

(*c*) The readiness of Government bodies to enlist the assistance of interested parties in formulating policies and the general spirit of co-operation, without any forfeiture of the right to criticize and fight. What has been described as the secular trinity of the Public Roads Administration, the American Association of State Highway Officials, and the Highway Research Board is an example of this team work in the Federal field.

(*d*) The pains taken by State road authorities and other organizations to publicize their reasons for desiring changes in policy or additional funds. In addition to its success in obtaining support for sound proposals, it has the essential merit of treating the public as composed, generally, of reasonable beings.

4. More particular points observed in the United States of America which yet must be classified as major impressions were:—

(*a*) The great attention paid to geometric design as a necessity for the safe and efficient operation of modern traffic. The principle followed is that the road must fit the traffic.

(*b*) The opinion was formed that the general Victorian rural practice of building a base which will carry the anticipated traffic and protecting it by the use of a cheap, thin bituminous seal coat is sound and will be satisfactory for many years to come. This view was

strengthened by inspections made of the lighter types of work carried out in the States of South Carolina, Georgia, and Florida, where traffic volume and climate more closely approach our own.

(*c*) The more general use of mechanical plant, made economically possible by its cheapness compared with the general price level, by the large size of jobs and by their number.

(*d*) The need for legislation making limitation of access and reservation of land for future road requirements possible, particularly on main routes which at present run through undeveloped areas.

(*e*) The excellent riding qualities and alignment of important highways. Where traffic densities were similar to our own the standards were often similar.

(*f*) The value of good road signing and particularly the use of advance direction signs and route numbering.

Typical Main Road in Scotland. A83 at Arrochar.

5. The road system of the United Kingdom has suffered, as have so many other services in that country, from two wars and a depression. The alignment of most of it is unsuitable for fast travel, while widths are generally inadequate. The road authorities are quite aware of these deficiencies but can see no possibility of early improvement. With the object of diverting labour to employment essential to pay for the nation's food, funds available for road work at the time of my visit were little more than those necessary for essential maintenance, while no petrol was available for purposes of pleasure.

The pavements have withstood the traffic of the war remarkably well. They are only uniformly fair in riding quality at moderate speeds, owing to lack of heavy maintenance over the last eight years. This is being rectified by the use of thin bituminous carpets, generally

of the open graded type. In spite of these deficiencies the surfaces are on an average much better than those in Victoria, while the smaller distances between centres of population reduce the need for high speeds.

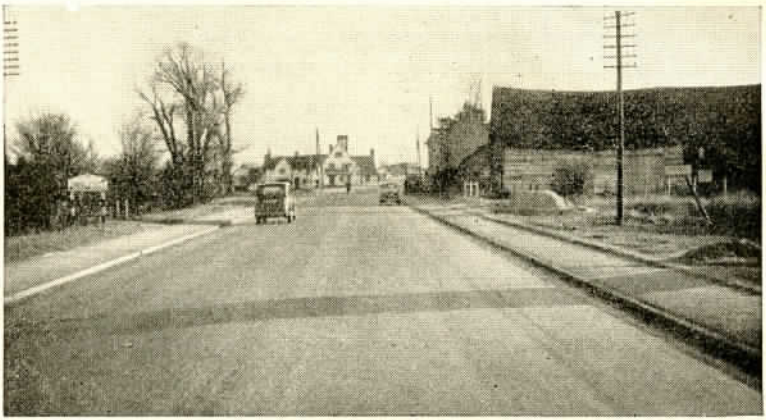
Other impressions gathered in the United Kingdom were:—

(*a*) The good work carried out in the few years before the war.

(*b*) The fundamental approach of the staff of the Road Research Laboratory to its problems, which should produce very valuable results now that the organization has returned to its normal work.

(*c*) The excellence of the direction and route signing system of the country.

(*d*) The social and economic evils of very large cities.



Great North-road. Boxing Day, 1947. Note Effect of Petrol Restrictions on Traffic.

APPENDIX I

BRIEF ITINERARY.

VISIT ABROAD, 1947.

22nd June–25th June ..	Travelled by air from Melbourne to San Francisco, spending 24th June with Public Roads Administration District Engineer at Honolulu.
	NOTE.—One day gained through crossing Date Line.
25th June–1st Aug. ..	Visits and inspections in California, Oregon, and Arizona, as arranged by the Western Regional Headquarters of the Public Roads Administration and the State Highway Departments of California and Oregon.
5th Aug.–1st Sept. ..	Headquarters of the Public Roads Administration at Washington, D.C.
2nd Sept.–17th Sept. ..	Inspection of works, particularly soil stabilization, in the States of Georgia, Florida, and South Carolina, under arrangements made by the Public Roads Administration.
18th Sept.–21st Sept. ..	Public Roads Administration Headquarters, Washington, D.C.
22nd Sept.–27th Sept. ..	Annual Conference of the American Association of State Highway Officials, New York.
28th Sept.–7th Oct. ..	Visits to Caterpillar and Barber Greene Works at Peoria and Aurora; Engineering Experiment Station, University of Illinois; University of Michigan; National Safety Council Headquarters; and inspections with Public Roads Administration engineers in Chicago area.
8th Oct.–10th Oct. ..	State Highway Commission, Connecticut, and Public Roads Administration District Office.
11th Oct.–16th Oct. ..	New York, including visit to Manhattan—Brooklyn Tunnel.
18th Oct.–25th Oct. ..	Sea journey—Montreal to Liverpool.
26th Oct.–14th Nov. ..	Visits to plant manufacturers as arranged by Ministry of Transport, and to the Road Research Laboratory.
15th Nov.–21st Nov. ..	Leave.
23rd Nov.–9th Dec. ..	Inspections of main roads in England and Scotland, also the Gardner Engineering Works and open cut coal mining; arrangements made by Ministry of Transport.
10th Dec.–26th Dec. ..	Road Research Laboratory and various inspections and visits to authorities in London area.
30th Dec.–28th Jan. ..	Sea journey to Melbourne.