

Notes.

I had numerous discussions on locomotive questions with some of the leading locomotive engineers in America. Regarding the use of compound engines I found great diversity of opinion. Some of these gentlemen have nothing to do with compound engines, while on the other hand others contended that compound engines were the best, and that by their use a considerable saving in fuel and also in the cost of maintaining the boilers was effected. The new type of four-cylinder balanced compound engines recently introduced by the American Locomotive Company, designed by Mr. Cole, and a similar type of engine built by the Baldwin Company and designed by Mr. Vaulclain, are giving satisfaction, and locomotive engineers hope for a favourable solution of the compound question by means of this new departure; new so far as America is concerned, but not so as regards France, Germany, and other countries, where the four-cylinder balanced compound engine has been developed and brought to its present efficiency. Large numbers of four-cylinder balanced compound engines are now being built in America, and I was informed that those already in use were giving much satisfaction.

The use of superheated steam was discussed and there is a general consensus of opinion amongst locomotive men in its favour. The Canadian Pacific Railway Company have a large number of locomotives fitted with superheaters, and their Superintendent of Motive Power claims a considerable economy by their use, and the fact remains that the number of engines fitted with superheaters is being increased.

Locomotives of great power: A very large number of these have been built for the American railways. The designs have not been good in all cases, and the result has been that breakdowns and failures have been numerous. Experience has shown up the weaknesses and defects generally, and these having been remedied the big engine is bound to stay, but it has its limitations even in America, and it would appear that the limit has been reached. American railways without their big locomotives and other high-capacity trucks could not cope with the enormous amount of freight offering.

Locomotive practice in New Zealand is in many respects similar to the American practice and this may perhaps be accounted for by the large number of American locomotives in use on New Zealand lines. What is wanted in New Zealand is a blend of English and American designs, by taking the best and most suitable from the English and American standards as a standard for New Zealand. The tendency generally is to work at high boiler-pressure, and especially so does this remark apply to America, France, and Germany. In Great Britain the increase of boiler-pressures is not so marked. There is a marked difference between the American designed locomotives and that of any other country. The American as a rule provides large boilers which give easy steaming and a reduction of wear and consequent cost of maintenance. Bearing-surfaces are also as a rule on a liberal scale. This means keeping engines on the road instead of having to be laid up in shops for repairs. During the last five years the English practice has been greatly changed, and to-day the proportions are more on American lines, notably in respect to boilers, the heating-surface of English boilers having been much augmented.

American engines lack the finish and are not built with the same care as those built in Great Britain, where the workmanship is, as it always has been, of the highest order.

The use of nickel steel is not general, engineers especially in America not having much confidence in it. Some crank axles for four-cylinder balanced compound locomotives are, however, now being tried. The consensus of opinion is in favour of locomotives of great power for lines where the traffic is congested. Locomotives of high power and high-capacity wagons reduce train mileage, which in turn means reduction in cost of working. High-capacity wagons cannot, however, be exclusively used, as they are not economical unless full loads are obtainable.

That American locomotive-builders can build as good a locomotive of English design as can be obtained from any country I am fully convinced. When I visited the Baldwin Works recently I saw a contract in progress for twenty powerful locomotives for New South Wales. An excellent job was being turned out. They had to stand the test of comparison with like engines supplied by the excellent British firm of Beyer, Peacock, and Co. (Limited). The cost of the engines delivered at Sydney in working-order was to be considerably less than the colonial or British cost. I do not think that Baldwins can possibly make the contract pay. The good work which I saw was, I consider, largely due to the able inspector, Mr. Howe, who represented New South Wales Railway Commissioners.

The Mallet Articulated Locomotive: This engine, No. 2400, was specially built by the American Locomotive Company (Limited) for the Baltimore and Ohio Railroad. It is the most powerful steam locomotive in existence, and was specially designed for working a heavy mineral traffic over a mountainous route having grades of 1 in 20, and numerous sharp curves. The weight of this engine in working-order is about 215 tons; tractive power, working compound, is 74,000 lb., and when working simple 84,000 lb.; the load hauled, over 2,000 tons; boiler-pressure, 230 lb.; consumption of coal per mile, 584 lb. One engineman and one fireman are found sufficient. This engine has given great satisfaction in service, and it is probable that the type will be repeated. This information is interesting inasmuch as a Mallet engine is being built at Petone for use on the Rimutaka Incline.

6. POOLING LOCOMOTIVES.

Reporters.—America—Mr. G. W. Rhodes, Assistant General Superintendent, Burlington and Missouri River Railroad; Belgium—Mr. Hubert; Russia—Mr. Kareischa; Austria—Mr. W. Ast; France—Mr. Boell.

Conclusions of Congress.

The Congress finds that in Europe and in countries other than North America the general sentiment is very much in favour of the single-crew system, and unfavourable to complete pooling, which is only used when necessitated by a sudden increase of traffic. However, for certain services various combinations of double-multiple crews or of mixed crews are used according to circumstances.