

Ch de fer de l'Afrique portugaise

The Railway Gazette



## THE RAILWAYS OF ANGOLA.

About 1,000 miles of Railway, divided into Four separate Systems, serve this Portuguese Province on the West Coast of Africa. The principal line is the Benguella Railway, which, on completion, will form part of the East-West Transcontinental Route.

THE Province of Angola, the most extensive of the Portuguese Overseas Possessions, lies on the west coast of Africa, and has a total area of some 485,000 square miles and a coast line of 1,000 miles in length. The main part of the province lies south of the River Congo, and is bounded on the north by the Belgian Congo, on the east by the Belgian Congo and Northern Rhodesia, and on the south by South-West Africa. The province also includes the Cabinda Enclave to the north of the Congo, and is bounded on the east and south by the Belgian Congo and on the north by French Equatorial Africa. The country forms the north-west portion of the South African plateau. The coast is skirted by a stretch of low-lying territory, which is about 150 miles wide in the north but gradually becomes narrower until in the extreme south it almost disappears. Behind this flat or gently undulating country the ground rises—in some places gradually, in others by distinct terraces—through the rich forest belt, until it reaches the main plateau. This plateau, in the north, has an altitude of from 3,000 to 3,500 ft. Towards the south the elevation increases until in latitude 12 degrees South (that is, in the centre of the country) it reaches from 7,000 to 8,000 ft. There are four separate railways in the colony, one on the 3-ft. 6-in. gauge, one on the metre gauge and two on the 60-cm. gauge, the total railway mileage being about 1,050.

### The Loanda State Railway.

The Loanda State Railway system runs from St. Paul de Loanda to Malange on the main plateau, a distance of approximately 375 miles, and affords access to the most fertile regions of the country. The railway consists of two sections: the first, from the sea to Ambaca, 227 miles, opened to traffic in September, 1899, was built and worked by a company, while the section from Ambaca to Malange, 87 miles, opened to traffic in September, 1909, was constructed and operated by the Government. Eventually the State took over the first section and now operates the whole as a Government line. The railway has recently been extended to Cassange.

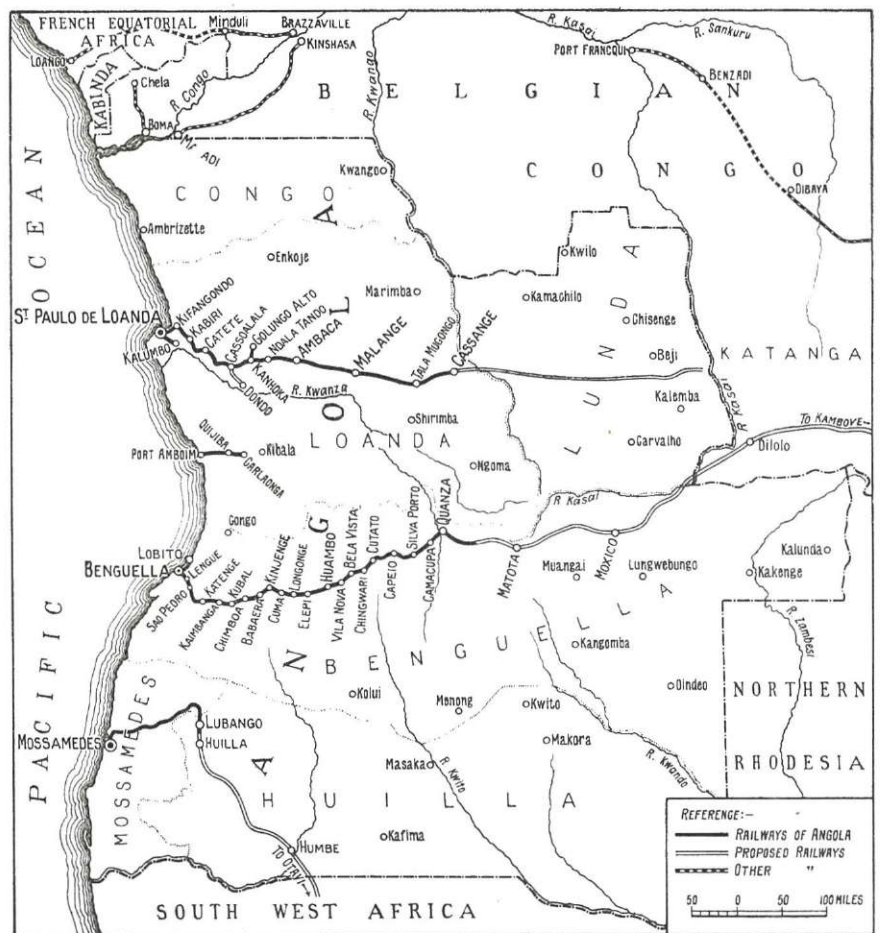
There are a number of bridges and culverts on the line, the longest on the first section being 105 metres in length. Beyond Malange construction was difficult, as the line then penetrates into the mountain zone. Many improvements have recently been taken in hand, and by means of re-location considerable reductions have been effected in the line mileage. It is stated that proposals are on foot for the widening of the gauge to the 3 ft. 6 in.

The rolling-stock comprises 40 locomotives, 41 carriages and 453 freight vehicles.

### The Benguella Railway.

The Benguella Railway, which is on the 3-ft. 6-in. gauge, starts at Lobito Bay, and its objective is to reach the mining region of Katanga, in the Belgian Congo, to which, on completion, it will afford a quicker and cheaper means of access than any other route. Originally the Portuguese Government had authorised the building of a railway running from Lobito Bay into the interior, for the

purpose of opening up the back country, but this apparently got no farther than the making of surveys and the calling for tenders. Mr. Robert Williams, acting on behalf of the Tanganyika Concessions Limited (a British company formed in 1889 to develop mining properties in Rhodesia and Katanga), became interested in the scheme of connecting up Central Africa with the west coast, and obtained a concession towards the end of 1902 for the building and working of the Benguella Railway. A few months later the rights were transferred to the *Companhia do Caminho de Ferro de Benguella*. The original intention was that a long section of the line should



Map showing approximately 1,000 miles of Railway in Portuguese West Africa.

run parallel to the southern frontier of the Belgian Congo but outside that colony; but following discussions between the several interests concerned, it was decided in 1908 to divert the line northwards, so that it would enter the Congo at a point where the Kasai River forms the boundary and where the frontier suddenly turns eastwards. Some 400 miles of the total length of approximately 1,125 miles were thus to lie in the Belgian colony, and it was agreed that this would be built by the Katanga Railway to reach the frontier by the time the Benguella Railway was completed to that point. The construction of the line was commenced in 1903, but for various reasons progress was slow. About 500 miles are now open for traffic. Construction in the early stages was very costly owing to the difficult nature of the country, but the railway is now

being laid over easier country, which should make for rapid progress. One of the great troubles has been to obtain sufficient labour, and the contractors have had to resort to the importation of Liberians, Hindu coolies and West Africans.

The rails weigh 30 kg. per metre. The maximum gradient is  $2\frac{1}{2}$  per cent. and the minimum radius of curves 120 m. Between Lengue and Sao Pedro there is a rack section of the "Riggenbach" type, with gradients of 1 in 16. The line follows a ledge of rock and crosses the canyon three times. The first bridge has five spans and masonry piers, the second one has one span of 138 ft. in length at a height of 60 ft. and the third has four 60-ft. spans.

The rolling-stock comprises 35 locomotives, four rack locomotives, 20 carriages, 293 freight vehicles and 6 rail motor cars.

#### The Mossamedes Railway.

This railway runs from Mossamedes to the south of the colony, and extends to Lubango on the Chella plateau, a distance of 155 miles, an extension being now in progress through Huila. The line is laid to the 60-cm. gauge. The southern portion of Angola has been difficult to pacify, and one of the reasons for the building of the line was the facility offered for troop transportation to the foot of the

Chella plateau, some 100 miles inland. Additionally, the line opens up a region capable of easy colonisation. A Royal Decree of 1905 authorised the railway, and by the end of the following year some 40 miles were open for traffic. A further 25 miles was constructed in accordance with a Decree of 1907, and on the outbreak of war about 100 miles were in service. The southern portion of Angola is the natural outlet for the Otavi district, which is situated in ex-German South-West Africa, and an extension of the railway to Otavi has been projected.

#### The Amboim Railway.

In 1921 the Portuguese Government granted the *Companhia do Amboim* a concession for the construction of a 60-cm. gauge railway from the Port of Benguella Velha to its estates in the Amboim region, a distance of about 50 miles. The first section of 30 miles in length runs to Carloango, and was opened for traffic in January, 1925. In accordance with the terms of the concession the Amboim Railway must ultimately be carried forward to Quibala to connect with the Libola Railway, the latter being a branch of the Loanda State Railway which the Government is to build from Cassoalala southwards via Dondo. It is proposed eventually to push forward this line to connect with the Benguella Railway.



## THE RAILWAYS OF MOZAMBIQUE.

Brief Details of the Lourenço Marques, Mozambique, Quelimane and Inhambane Lines in Portuguese East Africa. These are mainly on the 3-ft. 6-in. gauge.

THE Portuguese possessions in East Africa have an area of 428,132 sq. miles, and comprise the province of Mozambique, administered by the State (295,000 sq. miles), the territory under the *Companhia do Moçambique* (59,840 sq. miles), and the territory under the *Companhia do Nyasa* (73,292 sq. miles). The total population of the area is approximately 2,626,000. The first, which is ruled by a High Commissioner, with his seat at Lourenço Marques, is divided into five districts: Lourenço Marques, Inhambane, Quelimane, Tete and Mozambique. The colony has an extensive coast line, and forms a barrier between Rhodesia and the Transvaal and the sea. The most important lines cross the colony to give access to these interior territories, while other lines run out from the ports and terminate abruptly in comparatively short distances.

### The Lourenço Marques Railways.

The Portuguese Government railways of Lourenço Marques run out from the capital, where the railway headquarters are located, to Ressano Garcia, 55 miles, opened in 1894; Goba, 44 miles, opened in 1912; and Xinavine, 80 miles, opened in 1914, respectively. The first mentioned is the main line, and connects at Komatiport with the Union Railways of South Africa. The other two are branch lines, that to Goba having been built as part of a scheme for an inter-colonial line through Swaziland to connect with the line to Johannesburg. The third line serves a sugar-producing country, and is to be extended to the Limpopo Valley, one of the most extensive and fertile tracts of land in South Africa.

These lines are laid on the 3-ft. 6-in. gauge, 80-lb. rails, with adequate sleepers and ballast being used on the main line to Ressano Garcia. The rolling-stock equipment comprises about 50 locomotives, 16 carriages and 1,200 freight vehicles. The majority of the latter, which were built by the Leeds Forge Co. Ltd., are of 40 tons capacity. The railway repair shops, which are located at Lourenço Marques, are quite up to date, and new machine tools to the value of £50,000 have recently been installed.

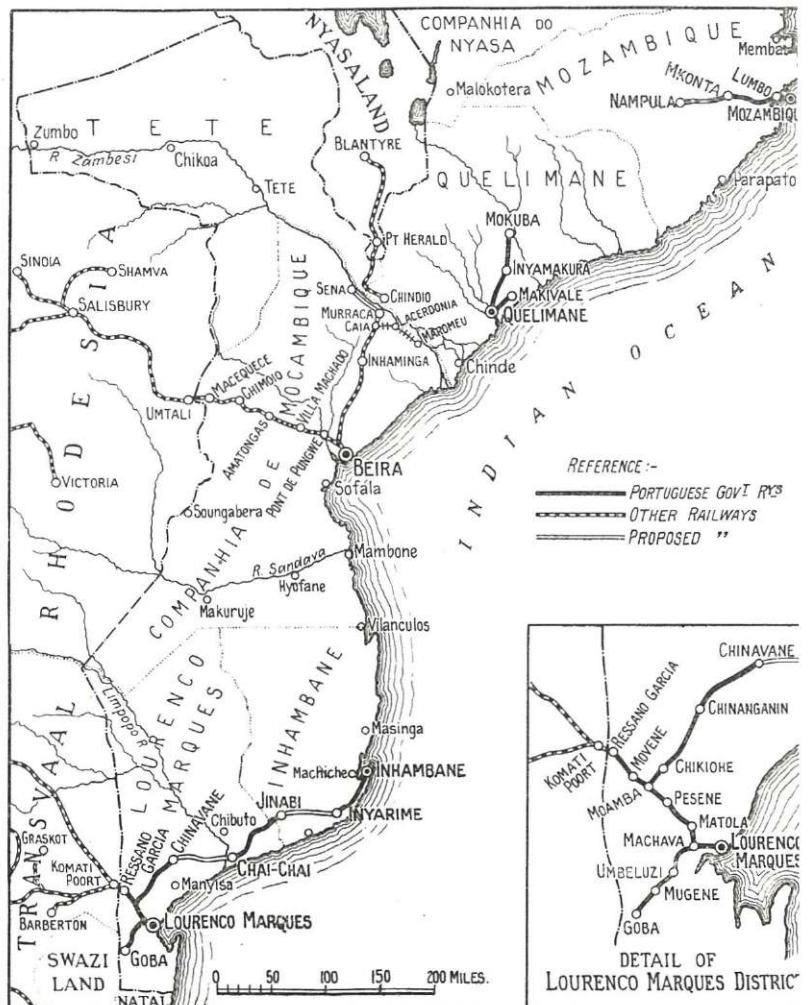
The Port of Lourenço Marques has cost over one million sterling in its construction. The principal wharf is one mile in length, and is built throughout of ferro-concrete. It is equipped with 20 electric cranes of 3, 5, 10 and 60 tons capacity. Two large coaling plants are also provided, these having nominal loading capacities of 400 and 600 tons per hour. Excellent shed accommodation, together with extensive open ground for cargo storage, is available.

### Other Railways.

Other lines in the territory are the Mozambique Railway, running from Lumbo to Mocimboa, with an extension to Nampula, 60 miles; the Quelimane Railway, running between Macuba and Quelimane, 90 miles; and the Inhambane Railway, running to the Port of Inharrime, 55 miles in length. In addition, there are some

Decauville lines, one of which runs from Chai-Chai to Jinabai and is to be extended to the Port of Inharrime, 60 miles.

The Beira and Beira Junction Railways are also located in Portuguese territory, but they are operated by the Beira & Mashonaland & Rhodesia Railways as part of their system, and are mentioned in the article dealing with that railway elsewhere in this issue. Originally the Beira Railway was built to the narrow-gauge



Map showing 500 miles of Railway in Portuguese East Africa.

but this was changed in order to effect physical connection with the Mashonaland Railway. The Beira Junction Railway was originally built to the 3-ft. 6-in. gauge. The Beira Railway comprises some 18 miles of track. It was converted to the 3-ft. 6-in. gauge in 1900, and is now an essential part of the Beira & Mashonaland & Rhodesia system in connection with their traffic to and from the coast.