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RAILWAYS AND DEVELOPMENT IN UGANDA

A. M. O'Connor

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RAILWAYS AND DEVELOPMENT IN UGANDA

A Study in Economic Geography

A. M. O'CONNOR

LECTURER IN GEOGRAPHY AT MAKERERE

UNIVERSITY COLLEGE, KAMPALA

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PREFACE

VISITORS to Uganda often see the country as a green oasis in a predominantly brown continent, even as a land of plenty where man does not have to struggle against a harsh environment as in much of Africa. Yet Uganda is by no means a rich country: its people have an annual cash income of only about £15 per head, and the figure is not rising at all at present. Amongst the problems facing the country that of inadequate transport facilities is often considered especially serious, and it is frequently claimed that developments in this field must inevitably bring increased prosperity to the people of Uganda.

This study aims to examine this claim in respect of rail transport, and to assess the importance of rail facilities as a factor influencing the distribution of economic activities in Uganda. The subject was inspired mainly by the fact that much new railway construction has recently been undertaken and particular attention is given to the recent extensions to the rail system.

Primary sources have been used for the greater part of the work, for little has been written about Uganda, and virtually nothing about its economic geography or its transport facilities. Published material has been used mainly for Chapters 3 and 8, concerned with railways built in the earlier part of the century and with road transport respectively. In the case of the former the material was obtained mainly from Annual Reports of the various Uganda Government Departments and of the Railway Administration. Road transport was the subject of a study by an economist from Britain, sponsored by the Uganda Government, and use has been made of his report. Official publications have been used as the source of much of the statistical information given elsewhere in this study, although much unpublished material has also been used. Unless otherwise noted, statistics for any economic activity have been obtained from the appropriate Government Department.

The primary sources which were tapped most extensively were the records and files of East African Railways and Harbours, of Uganda Government Departments, of public organizations such as the Lint and Coffee Marketing Boards and the Uganda Development Corporation, and of private firms. The remainder of the material is original, being gained from individuals engaged in the various economic activities discussed and from personal observation during travel in every District of Uganda: this is almost entirely of a qualitative rather than a quantitative nature.

The reliability of statistics quoted varies very greatly. Those concerned with rail movements are generally accurate, for detailed records are kept in Nairobi of all traffic handled, and there is no reason to doubt their

reliability. The Hollerith records provide a most valuable statement of all freight traffic, and summarized figures for Uganda have been included as an appendix since they are the result of calculations which had not previously been undertaken even within the Railway Administration. Some of the production figures quoted are equally reliable, but this is not true of crop acreage figures, and among the statistics used in this study these must be regarded as the most suspect. In 1960 a revised method of cotton acreage estimation was tried, and the results for some Districts were figures 50% above or below those obtained using the old method. In some cases, therefore, the picture here presented may be that indicated by the available figures rather than that existing on the ground. It is hoped that this applies in only a few cases, and that the bulk of the information obtained is considerably more reliable, but it has not been thought appropriate to make elaborate calculations on the basis of data such as is available for crop acreages.

The research upon which this book is based was undertaken between 1960 and 1962, and the results were presented as a thesis for the Ph.D. degree of the University of Cambridge. The work has subsequently been revised and shortened, and it is now based on the situation as it was in 1963.

I should like to acknowledge assistance given from many quarters during the course of my research. For financial support I am much indebted to the managers of the Smuts Memorial Fund of Cambridge University and to the British Council, who supplemented a grant from the Ministry of Education.

During the two years spent in Uganda I enjoyed the good fortune to reside in Makerere University College: more pleasant conditions for working could hardly be found, and I am most grateful to the college authorities for accepting me as a research student. Many people in the college, and especially in the Department of Geography, helped me greatly through the friendliness and encouragement they offered. I am most grateful to Mr. A. Serubiri and Mr. C. Odye, draughtsmen in the Department of Geography, for assistance with the maps included in this study. It would be quite impracticable to list all those who gave me assistance during the course of my inquiries in Uganda; but I must single out the officials of East African Railways and Harbours, and especially Mr. L. Brown in Kampala and Mr. J. Boumphrey in Nairobi, without whose willing co-operation the work would have been impossible. I am also most grateful to many officials of Uganda Government Departments and other public bodies, and to numerous individuals engaged in commerce and trade throughout Uganda, who gave of their time to answer my questions and to show me their records.

Finally, I should like to record my appreciation of the encouragement and advice given by my research supervisors, Professor S. J. K. Baker of Makerere College, and Mr. B. H. Farmer of Cambridge University, who followed the work with far closer attention than I had any reason to expect.

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INTRODUCTION

TRANSPORT facilities are generally considered to be one of the most important factors influencing the pattern of economic activities in any area: and improvements in this field are often recommended as one way of tackling the problems of the underdeveloped countries of the world. One such country is Uganda, where the period from 1950 to 1970 is witnessing much new railway construction in addition to substantial expenditure on the road system.

Lord Lugard was expressing a widely held opinion when he stated in 1922 that 'the material development of Africa may be summed up in the one word "transport"[1], that 'the development of the African continent is impossible without railways, and has awaited their advent'[2], and that 'any railway built reasonably cheaply through a populous country is bound to be remunerative'[3]. At that time railway construction was thought by many to be the key to prosperity for tropical Africa. Today views have generally been modified, but in 1956 Lord Hailey could still say of transport: 'There seems to be no other type of development which can effect so speedy a change in the economic and social conditions of a backward country'[4], although he observed that road building may now be of greater value than rail construction. The idea that railway building will automatically bring economic development is continually being expressed in government circles in Uganda, as in many other countries. A committee appointed to consider the proposal to extend the railway westwards from Kampala observed that 'the development that must inevitably follow in the wake of a railway will provide new opportunities of incalculable value'[5]. And when the Minister of Commerce and Industry stated in Legislative Council in 1961 that the northern line now nearing completion 'will open up new areas for agricultural development'[6], all subsequent speakers accepted this, although no evidence had been given to substantiate it.

The role of rail transport in economic development should be a subject of academic interest as well as one of great practical importance. Yet it has been observed that 'transport and communications are prominent

among the areas of study that have not yet received sufficient attention from economists or from geographers'[7]. Such study as has been undertaken by either has generally approached the subject from the aspect furthest removed from the other discipline. Thus 'Transport Geography' has been concerned mainly with such matters as the relation between relief features and transport routes[8], or with a description and also an explanation of traffic movements[9]. One of the two geographical studies of transport in East Africa that have been undertaken so far, that by V. C. R. Ford[10], is a good example of the latter. That by I. S. Van Dongen[11] covers a wider field, but it is concerned far more with the effect of economic activities on the transport pattern than with the reverse, and gives little indication of the role that new railways might play in the area. Regional studies by geographers often include a chapter on transport, but this is generally confined to a survey of the transport facilities of the area, and of the use to which they are put. This applies even to the transport chapter in W. A. Hance's study of African economic development, the rest of which aims at something other than description alone[12].

Economists have given more attention to transport and several large volumes bear the title 'Economics of Transportation'. However, after a brief mention of the importance of transport in an introductory chapter, most are then concerned entirely with matters of organization, competition and charging, rather than with the effect of transport facilities on economic activities. Most of these works are American, but the chief British contributions are similar in content[13]. Even when the subject is discussed with reference to a specific area, such as South Africa[14], transport is normally considered *per se*, and the same ground is covered. When economists have concerned themselves with the factors affecting economic activities, as in many recent studies of underdeveloped countries[15], very little specific reference has been made to transport, either to confirm or to challenge the widespread belief in its importance.

The writer knows of no work in English which attempts to assess the significance of transport facilities for the pattern of economic activities in underdeveloped countries as a whole, or in any individual territory. However, since Uganda is predominantly an agricultural country, the observations made by M. D. I. Chisholm on the effects of roads and railways on rural settlement are of interest[16]. After noting that the close relationship between railways and wheat farming in North America and Australia is now weakening, he says of most of Africa: 'Here are ideal conditions in which zoning about single lines of communication can and does take place'[17]. He quotes from the most useful study on the subject, that by Nicolai and Jacques[18], who found that in southern Congo, where the Port Francqui—Katanga railway was built through almost empty country in the 1920s, 'in 1951 some 23 per cent of the population in the administrative areas traversed lived in but five per cent of the land area in a belt extending only 2.5 kilometres on either side of the railway'[19]. Chisholm then quotes without comment a report from British Guiana purporting to offer 'striking proof of the principle in colonial development that if you drive a road or railway

through a cultivable area you automatically stimulate economic development'[20].

In this study an attempt is made to find whether this 'principle' applies to Uganda. For in view of the recent spate of railway building in the country, which has increased the total length of line from 322 miles to 767 miles in twelve years, at a cost of £10 million (as shown on Maps B and C), it seems important that the role of rail transport in the economic geography and development of the country should be examined. It may then be possible to establish whether railways are today a positive factor stimulating economic activity in the area, whether they are rather a part of the infrastructure necessary for such activities without being in themselves sufficient to promote them, or whether they are now of little significance at all.

The distribution of economic activities in Uganda is the first subject of attention, and the influence of one factor, rail transport facilities, on this distribution is isolated as far as this is possible. For a balanced picture of the various factors operating, attention should be given to all in proportion to their apparent significance; but this cannot be done in a study of this length, and factors other than rail transport can be only briefly considered. Attention is given to the importance of rail services for the existence of each activity in Uganda, and for its distribution within the country.

Although the study is concerned primarily with present conditions, some attention must be devoted to the past, both for purposes of comparison, and because the transport situation in the past may have an important bearing on the present economic geography. Until 1902, Uganda was entirely dependent on head porterage or canoe transport, but the Uganda Railway leading from Mombasa to Lake Victoria was opened in that year, and connecting steamer services gave the country access to this railway and thereby to the coast, 600 miles away. Most historical studies maintain that political and strategic considerations, and the wish to suppress the slave trade, were the chief motives for building the railway[21]; but whatever the object of the line, its construction was followed by rapid economic development in Uganda, which had formerly had an almost entirely subsistence economy. Between 1910 and 1931 several short railways were laid within Uganda (Map A). The relationship of each of these, and of the line from the coast, to the changing patterns of economic activity is examined, although a full study of the effects of railway building would require the approach of the economic historian.

After 1931 no further construction was undertaken for twenty years, but then the decision to tap the copper resources of the Ruwenzori encouraged the building of the 208-mile Western Uganda Extension, opened in 1956. This line has been selected for detailed examination as a case study of the role of the railway as an economic force today. In 1961 work began on another extension of similar length into the north of the country, and the possible effects of this are considered in relation to the experience in the west. Each extension serves a relatively undeveloped area, and the detailed studies may shed some light on the problem of the extent to which lack

of rail facilities has been responsible for their falling behind the more prosperous areas of Buganda and the east.

The study is concerned almost entirely with the movement of goods rather than passengers, for rail passenger traffic is of relatively small significance in the economic geography of Uganda. It is certainly of minor importance for the Railway Administration: no figures are available for Uganda alone, but for the whole of East Africa revenue from passenger rail journeys in 1962 amounted to only £1.46 million, compared with £16.14 million from freight. In general people travel far less than in a country such as Great Britain, whereas a large proportion of them produce goods which have to be moved long distances. Railway services are sometimes used by people travelling from one area to another for work, and also for local journeys into the towns, but there is nothing comparable to the movement of large numbers of passengers carrying huge loads of produce as luggage, reported from West Africa[22]. The main economic effects of rail passenger transport probably involve such indirect, although often important, processes as the spread of ideas. In such fields as this, however, motor vehicles which penetrate so much more deeply into the countryside, now play a greater role.

Throughout this study attention is concentrated on rail transport, together with the water services operated by the Railway Administration. But it is necessary to make some mention of road transport, and especially of the relative importance of road and rail in the present economic geography, since they often represent alternative means of overcoming the same problems and may offer alternative opportunities for investment. One chapter is therefore devoted to this subject.

Geographers often give more attention to air transport than to roads[23], but in the present study this would certainly not be justified. Entebbe is an international airport but in 1962 only 48,900 passengers travelled to or from Entebbe (compared with 239,700 at Nairobi), while freight traffic handled there amounted to only 694 tons, compared with the figure of 6,185 tons for Nairobi[24].

The conclusions reached in this study relate specificially to Uganda, although they might usefully be compared with those of any similar study elsewhere. Nigeria and Sudan are among other African countries where large scale railway extensions are under construction, while Swaziland is shortly to be provided with rail facilities for the first time. A brief comparison is made only with Tanganyika and Kenya, which have been chosen because they share a single railway system with Uganda, the services in all three countries being operated by the East African Railways and Harbours Administration.

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RAIL TRANSPORT AND THE ECONOMIC ACTIVITIES OF UGANDA

Cotton

THE development of a cash economy in Uganda was based very largely on cotton cultivation, and between 1919 and 1938 this crop accounted for over 80% of all export earnings. In 1957 it was surpassed in value by coffee, but in 1961 it was again the most valuable export, earning £16.5 million. Throughout most of eastern and northern Uganda cotton and subsistence crops are the foundations of the local economy, and over the country as a whole cotton occupies a greater acreage than any other crop.

The railway to the coast is one among many factors which have favoured cotton cultivation in Uganda. Rainfall, temperature and soil conditions are suitable over most of the country, while the indigenous agricultural systems can incorporate the crop without difficulty[1]. It is well suited to peasant production, which is the form of economic development to which the British administration soon became committed. The rapid spread of cotton growing between 1905 and 1920 was assisted by some pressure from the government, and by the strong authority of the chiefs[2]. At the same time there has always been much popular enthusiasm for the crop.

Before 1902 no cotton from Uganda could have reached world markets because of the prohibitive cost of porterage to the coast[3], and the establishment of the crop followed the building of the Uganda Railway. The timing of its completion was of particular significance. Around 1902 the Lancashire textile industry was experiencing shortages of its raw material, and the British Cotton Growing Association was formed to encourage production elsewhere; the opening of the railway attracted much of its attention to Uganda. Exports of cotton lint rose rapid y from 45 tons in 1905/6 to 1,400 tons in 1909/10 and 18,000 tons in 1921. In what was for many years the standard reference work on Uganda it was stated that 'the railway to Kisumu and the development of Lake Victoria and Lake Kyoga feeders were the two all-important factors which made the development of a cotton industry in Uganda possible'[4]. The phrase 'all-important'

is perhaps more fully justified from an historical than from a geographical point of view, in an explanation of why the industry developed then, rather than why it developed there; but the railway was certainly a prerequisite for its establishment.

The railway further assisted the development of cotton production by providing the opportunity for export of cotton seed, the by-product of the ginning industry. Although of much lower value than lint, the seed could be sold profitably provided cheap transport was available, and this increased the returns from cotton growing throughout the country.

Today the railway across Kenya is less vital than when porterage was the only alternative; and its role in the cotton industry is smaller now than in 1938, when it handled not only the lint production of 71,820 tons but also the 122,718 tons of cotton seed which were exported in that year, for most of the seed is now used in the Uganda oil-milling industry. Nevertheless it still plays a role of great importance by carrying almost the whole production of lint 600 miles to Mombasa, and in the 1962/3 season 64,000 tons of lint were despatched from numerous stations and ports. Most of this traffic is moved within five months of the year, and at a very low charge. While the price to the grower rose from about 50 cents per lb. of lint to 1/60 cents between 1929 and 1961*, the rail rate to Mombasa rose only from 3½ cents to 5 cents. There is little doubt that even today the inland location of Uganda would place it at more of a disadvantage as a cotton producer if the railway did not exist and the crop had to be taken to Mombasa by road.

The railway services are of value for the transport of cotton lint not only from Uganda to the coast, but also across the country in the case of that produced far from the Kenya border: and just as the existence of a railway assisted the establishment of the crop in Uganda, so the pattern of rail facilities influenced the distribution of production within the country for many years. Before 1939 the price offered to the grower in any locality reflected the cost of transporting his cotton to the nearest ginnery, and of moving the lint and seed produced there to the nearest railhead. Even within Buganda the prices in 1929 ranged from 21 cents per lb. near Kampala to 17 cents eighty miles to the north. The incentive to grow cotton was therefore greater in the areas near to the railways than in those far from them.

Circumstances have now changed, and it might be useful to examine how the transport factor operates at present. Three levels of movement are involved: that of seed cotton from farm to market, and from market to ginnery, and that of lint and seed from the ginnery. The first is the farmers' responsibility, most of the crop being moved either as headloads or by bicycle. In the main cotton-growing areas the markets are sufficiently numerous for most farmers to be within reach of one, but in more marginal areas a long walk or ride to a market is often a factor hindering production. Sometimes a vicious circle exists, for the small production may itself discourage the establishment of a market.

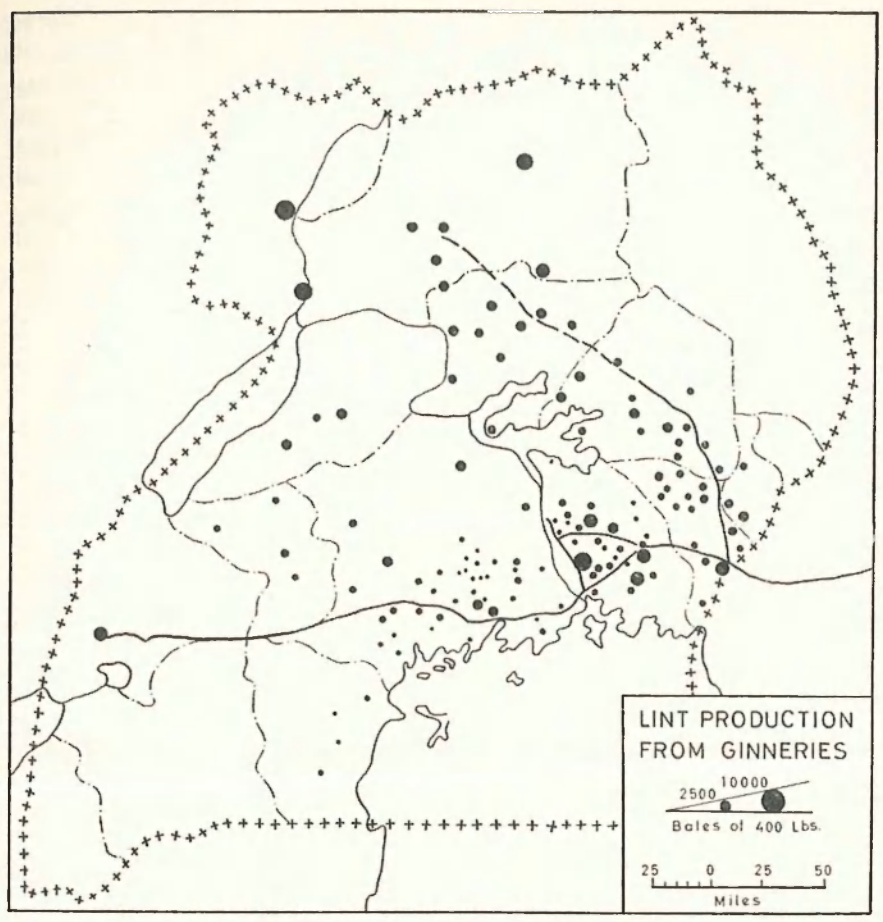
*i.e. 18 cents and 55 cents per lb of raw cotton

Transport from market to ginnery normally takes place by lorry, and is organized by the ginner, who is then fully reimbursed by the Lint Marketing Board. The distance between his local market and the nearest ginnery is thus of no importance to the grower, while the ginner does not normally suffer by operating in an area where cotton cultivation is widely scattered. Sometimes the cotton is moved direct from farm to ginnery by *kyalo* lorries, which travel round the countryside collecting the farmers with their cotton, and bringing both to the ginnery, where the crop is bought. This system, which developed in the 1920s when too many ginneries were competing for too little cotton, has certainly encouraged production wherever the only alternative is headloading by the women, who also have to prepare the land for food crops. Again the marketing board recompenses the ginner for the transport costs involved.

Since most ginneries were erected before the main period of railway building, few are located beside a railway, and the cotton lint usually has to be taken to the nearest station by road. Today the Lint Marketing Board buys the lint from the ginner, and pays for its transport. The cotton seed, which accounts for two-thirds of the weight of the raw cotton, is also bought by the Lint Marketing Board, which meets the cost of transport from the ginnery to the oil-mill. It is at this stage that location in relation to rail facilities could be of importance, and if the costs of moving lint and seed were passed on to the grower, the attractions of growing cotton would be slightly greater near to the railway than far away from it. The price offered for raw cotton around Kitgum would be about 2 cents per lb. lower as long as it was dependent on Lira station, eighty miles away, than it would be if a railway ran to Kitgum itself. Even then the difference would not be of great significance for a crop worth about 50 cents per lb. Under the present system the grower's price is the same everywhere, apart from a difference of 1 cent per lb. between the two varieties produced. The pattern of rail facilities is a factor affecting only the Lint Marketing Board whose costs are spread over the country by the fixing of an appropriate uniform price; and although this price would be somewhat lower if all transport within Uganda had to take place by road, the saving from the provision of rail facilities in one part of the country is of hardly any significance when averaged over the whole of Uganda.

It appears that rail transport facilities cannot now have any direct effect on the distribution of cotton production within Uganda. There are in fact no signs of any such relationship on a local scale (Map 1). On a broader scale there is some tendency towards a concentration of production in the areas best served by rail services, and this results in part from the lead gained by these areas at the time when transport costs were of direct significance to the growers. The greater extent of government assistance, and wider diffusion of goods on which to spend cash, that they enjoyed in the past are also partially responsible. The transport factor is now probably of most direct importance at the local level, when the raw cotton must be carried by the farmer, or his wife, to the nearest market.

Internal rail facilities are of some significance today in that they have



Map 1. Uganda: Cotton Production, 1962/3 season.
(Source of data: Lint Marketing Board, Kampala.)

assisted the marketing board to maintain its present policy of meeting all transport costs, by ensuring that these are not excessive. It would have been less willing to subsidize production in the more remote areas of the country if these were dependent on road transport, since the rates for this are about three times higher than the rail rates on lint and seed. In fact the rail network is now such that a road haul of more than 150 miles is never necessary. One result of the policy is that much cotton seed is moved long distances across the country. If it all had to move at road transport rates, the marketing board would probably sell the seed on an ex-ginnery basis, and this would encourage more milling in the vicinity of the ginneries.

The railway is clearly playing a very important role in the cotton industry of Uganda, and is still a factor assisting production in the country as a whole. In the past it also influenced the distribution of production within the country; but as in some other countries, such as Nigeria, transport costs are now spread over all producers at an equal rate, and they can no

longer directly affect the distribution of the crop. Rail facilities are therefore not a factor directly influencing the pattern of cotton cultivation on either a local or a regional scale, and there is no truth in such statements as 'the Busoga line from Namasagali to Jinja is still an important factor stimulating cotton production south of Lake Kyoga'[5]. Only if the Lint Marketing Board ceased to operate as at present could an extension of rail facilities have any local effects: and no change of this nature is in sight, since the government is committed to a policy of assisting the less developed areas, and the present marketing structure contributes to this.

Coffee

Coffee is now as important as cotton among Uganda's exports, earning over £20 million in 1962, and it has played a major part in the increased prosperity of the country over the past decade. The crop is grown almost entirely on peasant farms, and the greater part is handled by the Coffee Marketing Board[6]. Coffee is as dependent as cotton on the railway to the coast, for virtually the whole production is exported through Mombasa. In 1960, E.A.R. & H. were asked to move 131,000 tons, of which 71,000 tons were railed from Kampala, 43,000 tons railed from other stations, and 17,000 tons shipped from lake ports.

The distribution of coffee cultivation within Uganda is much more limited than that of cotton. Both *arabica* and *robusta* varieties are grown, the latter accounting for 85% of the total production. *Robusta* cultivation is largely concentrated in Buganda, while *arabica*, which needs cooler conditions, is grown mainly on the slopes of Mount Elgon in Bugisu. A little of each type is also grown in the west. Most of the crop is thus produced in the relatively accessible parts of the country, and its distribution suggests the possibility of some relationship to rail facilities. However, the development of coffee growing seems less closely related than that of cotton cultivation to the provision of rail transport facilities. The first recorded export immediately followed the opening of the railway to Kisumu, but the main period of development was from 1927 to 1930, when most of the production still had to be shipped from Port Bell to Kisumu. The extension of the railway to Kampala in 1931 had little immediate effect on production, although it has provided invaluable assistance for subsequent development, for the acreage has increased eightfold since 1944. Throughout much of Buganda the physical conditions are satisfactory for *robusta* coffee, and in the zone bordering Lake Victoria they are excellent. Coffee fits well into an agricultural system based on another perennial crop, the banana; and the Baganda had already acquired some capital and an interest in cash crop production from cotton. Some Ganda farmers also have the resources to use the well-established flow of migrant labour from Rwanda. Relative accessibility has therefore been only one advantage among many, although its importance has been increased by such indirect effects as a greater amount of Department of Agriculture activity than in more remote areas.

There is no evidence of any correlation between rail facilities and the distribution of coffee growing within Buganda. Production is discouraged

by transport problems only when farmers live far from any buying centre, to which they must move their coffee themselves; and in most of Mengo and Masaka buying centres are very numerous. The price paid varies with the distance of the centre from a curing works, where the coffee is prepared for export. But within Buganda the difference is nowhere over 5%, and competition between works is such that over a wide area the full price is offered.

The Coffee Marketing Board has for many years bought the clean coffee ex-works, and paid for the transport to the coast, so that neither distance from railhead nor the length of the rail haul have directly affected the works (or, therefore, the grower). Even in the past a number of processing works were established at some distance from the railway, for the movement of a steady flow of clean coffee was cheaper and more easily organized than that of bulkier unhulled coffee in irregular quantities. Some of the isolated factories face problems today, but transport costs are not responsible. Several Mengo works have long used Kampala station in preference to one nearer to them, at extra expense to themselves, while some works around Masaka have found it economic to bring unhulled coffee 100 miles from Kampala and to return with it there after processing. In April 1963 the Coffee Marketing Board adopted a new policy whereby all *robusta* coffee must be taken to Kampala for grading before export. So works which previously used a local station are now sending their clean coffee to Kampala by road, and as long as this system remains in force rail facilities obviously cannot have any influence on the distribution of production within Buganda.

The *arabica* coffee from Bugisu District is not marketed by the Coffee Marketing Board, but by the local co-operative union. It was sent to Nairobi for final processing until 1959, when a curing works was built at Mbale. The establishment of the crop in the 1920s was assisted by the opening of the railway to Mbale in 1928, as well as by the location of Bugisu in the part of Uganda nearest to the coast: but development could have taken place without it since Tororo is only twenty-eight miles from Mbale, and it is the main line across Kenya which has been really vital. As in Buganda, proximity to the railway does not affect the growers, for the co-operative union meet all transport costs and so subsidize producers in the more isolated areas. This policy has been made possible by the development of lorry transport, for the whole crop must be taken to Mbale by road, and transport problems now discourage production only in those areas which have no road access.

Much land in western Uganda is suitable for coffee, but the acreage so far planted is under 5% of the total for the country. In Ankole and Kigezi disease ruined early efforts to develop the crop and official encouragement ceased until very recently, and in Bunyoro the failure of several European coffee plantations discouraged peasant production. In the past relative isolation also reduced the incentive to grow coffee, for until recently the grower bore the cost of transport to Kampala, while from some places transport was not available at any price. Inaccessibility also weakened

the impact of the cash economy, trade goods arriving in smaller quantities and at higher prices than elsewhere. Nevertheless the Ba-amba, who inhabit the most remote county of Toro, adopted the crop, and production there developed rapidly from 1922[7], even though the coffee had to be taken on foot over the mountains to Fort Portal before moving by lorry to Kampala, until a road reached Bwamba in 1938. The railway played no part in moving coffee from the west until 1961, when curing works were built at Bundibugyo in Bwamba and at Bushenyi in Ankole, both of which rail their clean coffee from Kasese. This does not affect Bwamba producers, for they had received the same price as those in Buganda since 1953: in Ankole and Kigezi the price deduction for transport to curing works has been reduced, but it is the fact that the Coffee Marketing Board pays all transport costs from the new works, rather than the existence of the railway, which benefits the producers. The railway brings a small saving to the marketing board compared with road transport, but the works would have been built even if Kampala had continued to be the nearest railhead. Even though the marketing board pays all transport costs from Bushenyi, much coffee is still taken from Ankole by lorry to Buganda for curing at the works' expense, and this surely indicates that transport costs are not of major significance today.

In the north, only the West Nile uplands offer suitable physical conditions for coffee. As in the west, inaccessibility was one of several factors discouraging production in the past: but this is no longer the case, for efforts to stimulate *arabica* cultivation now include payment by the Coffee Marketing Board of the charge for road haulage to Kampala.

Accessibility, including proximity to rail services, has affected the broad pattern of coffee growing in Uganda over the past forty years. But transport costs are now of much less significance than in the past. They have risen since 1945 far less than the price of coffee; the marketing board now pays these costs from any works to the coast; and the government is sufficiently anxious to encourage *arabica* production to ensure that remote areas do not bear higher than average transport costs. Extended rail services could not affect any local area greatly, while the effect on the marketing board could be only slight, for all payments made in 1962 for road and rail transport amounted to only £597,829, compared with coffee purchases of £8,685,712[8]. The main line to Mombasa, however, plays a large part in keeping transport costs down to this level, and it contributes substantially to the prosperity of the Uganda coffee industry.

Tobacco

The third peasant cash crop in Uganda is tobacco, although the quantity produced is extremely small in comparison with that of cotton or coffee. The distribution of the crop has been largely governed by the efforts of the Department of Agriculture and the East African Tobacco Company to encourage cultivation in Districts where other cash crops are not well established, especially in Bunyoro and West Nile. These Districts each produced about 1,000 tons of cured tobacco in 1962, while Acholi, Mubende

and Kigezi together contributed a further 200 tons. The tobacco must be moved a considerable distance, for all these Districts are relatively remote from the re-drying factory at Kampala, to which the crop is taken before being sent on to cigarette factories in Jinja and Nairobi. The haul is always over 150 miles, and from West Nile it is 440 miles, yet road transport meets almost all the requirements of the industry.

Production in Bunyoro and West Nile was originally assisted by the railway steamer services, but the leaf deteriorated on the long journey under hot, damp conditions, while the frequent trans-shipments caused damage to it. Road transport has therefore been used for the Bunyoro crop since 1953, and for the West Nile crop since 1957. The adoption of Kampala as a re-drying centre, and the establishment of efficient ferries at Pakwach and Atura on the road from West Nile, were two factors encouraging the change. The difference between the E.A.R. & H. charge of 140/- a ton from Rhino Camp and the charge of 200/- to 220/- for the road haul was regarded by the tobacco company as a matter of little consequence.

The main factor limiting tobacco production at present is certainly the limited nature of the East African market. New railway developments cannot be expected to stimulate it, since the crop could be grown in most of the areas already served by the railway. Production could be rapidly expanded only if Uganda tobacco could be sold overseas, but efforts to find export markets have so far met with no success. The railway provides facilities for exports, and the rate from Kampala to Mombasa is only 154/80 per ton, compared with market prices thirty to forty times higher, so that Uganda is at no real disadvantage compared with other producers. Transport problems are therefore not a factor limiting production or exports.

Tea

Tea and sugar are grown as estate crops in Uganda, and although they occupy only a very small area, each makes a valuable contribution to the economy. Tea planting began in Mengo District in the 1920s, and soon afterwards several estates were established in Toro. By 1962 there were 9,500 acres under tea in Mengo and 7,500 acres in Toro. Expansion is now taking place in both areas, while a 1,000-acre estate has recently been established in Ankole. Since processing reduces the weight of the leaf to one-fifth, and since the green leaf is easily damaged, tea factories are located on the estates, and transport requirements are for a relatively small quantity of manufactured tea. Production in 1962 amounted to 6,180 tons, of which 80% was exported and the remainder blended and packed in Kampala for local consumption.

The railway carries all the exports to Mombasa at a charge of only 7 cents per lb., and this represents such a small part of the value of the product (well over 3/- per lb.) that Uganda has no difficulty in competing in world markets. Rail facilities have certainly assisted the development of this industry in Uganda, but the value of tea is such that they cannot greatly affect the distribution of production within the country. All the estates now lie within easy reach of the railway, but this was not so when they

were first established. Accessibility assisted the early development in Buganda, although the exact location of the estates shows no relationship to transport facilities: but planting soon spread to Toro, where more land was available and where the climate is rather more suitable, even though this involved a 200-mile road haul. The concentration of estates there, and near Mityana, is quite unrelated to the western railway, since this was built many years later.

Since 1962 tea cultivation has been extended to Kigezi and Bunyoro, despite the lack of rail facilities in these Districts. Lorries will move the tea from these areas, as they did from Toro until 1956. At present tea is produced mainly in areas served by the railway, but in future the distribution of production will match that of rail facilities less closely.

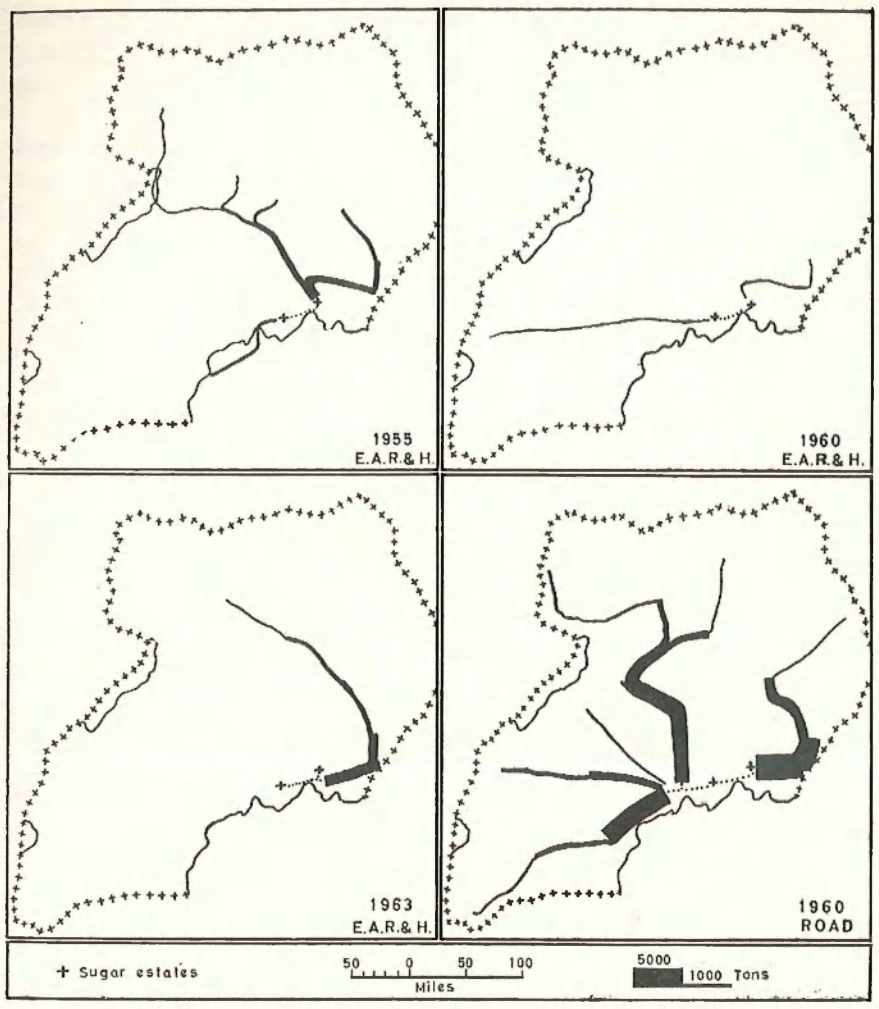
Sugar

Sugar is a bulkier product than tea, and the transport factor is of rather greater significance in its production. Virtually the whole commercial crop is produced on two estates, one at Kakira, near Jinja, and one at Lugazi, between Jinja and Kampala. Their combined output in 1962 was 101,000 tons, of which 65,150 tons were consumed within Uganda and the remainder exported to Kenya.

Both estates lie beside the railway, but it would be wrong to conclude from this that it was a factor influencing their location. The Lugazi estate was developed between 1921 and 1924, while the railway serving it dates from 1931. The line had no great impact on the estate, and the acreage remained constant at about 5,500 from 1928 to 1938. The development at Kakira took place beside the older Busoga Railway, but this provided very limited opportunities for sugar distribution until it was linked to other lines, and as at Lugazi, the availability of land was the main factor guiding location.

The significance of transport costs in sugar production is reflected in its location near to the main internal markets rather than near to the railway. In the north and west, where more land is available for plantation agriculture, a lack of rail facilities no doubt helped to discourage sugar production: but even if they had been provided, Buganda and the east would still have enjoyed the advantages of proximity to the main markets within Uganda and elsewhere in East Africa, in addition to superior physical conditions for sugar cultivation.

Today the construction of railways in western and northern Uganda cannot increase greatly the attractions of production in these areas, since most movements within Uganda now take place by road (Maps 2a-2d) and since the prospects for increased sales elsewhere are poor. From Kakira 11,242 tons were railed to Kampala in 1963, but less than 2,000 tons were railed to other Uganda stations, while about 20,000 tons were despatched by road. From Lugazi 90% of the sugar sold in Uganda moved by road. E.A.R. & H. has obtained the Kakira-Kampala traffic only by quoting a very low rate, while for the hauls to Mbale and Soroti the railway is little used even though rates have been cut from 34 cents to 13 cents per ton-mile. Road



Maps 2a-2d. Uganda: Movements of sugar from Kakira and Lugazi estates (excluding movements within Mengo and Busoga Districts).
Data from sugar companies and E.A.R. & H.

transport would be less readily available for estates in the north or west, but it is unlikely that they would be much more dependent on rail transport, especially if they supplied mainly the surrounding areas which are relatively distant from Kakira and Lugazi. One new estate is in fact being developed in Uganda, and it is notable that it is located in south Masaka, far from any railway.

The railway has been of most value for exports to Kenya, and it handles the whole of this traffic. In this way it has contributed to the development of sugar production beyond the level of internal demands. Sugar could now be taken to Kenya by road, but the cost would certainly be greater than by rail. Production for export overseas has not been stimulated,

however: the cost of the haul to Mombasa reduces Uganda's competitive position in world markets, while political pressures have kept the alienation of land for plantations to a minimum. Even the present exports are now threatened by the increase of production elsewhere in East Africa.

The most severe transport problems now felt in the industry concern the movement of cane. Rail transport plays a part in this, for each estate has a light railway system, while the main E.A.R. & H. line carries over 50,000 tons a year from an outlier of the Lugazi estate to the factory. Lorries are also used, however, and the managements of both estates claim that cane haulage could now be economically undertaken entirely by the 20-ton road vehicles of which some are in operation. Each concern would like to develop land, or to assist peasant outgrowers, further from the central factory, but haulage of cane over twenty miles by either rail or road appears uneconomic, and this has limited the area of production.

Groundnuts

Groundnuts are one of the leading crops of Uganda, but they are not a major cash crop as in Senegal or Nigeria, for almost all are consumed by the farmers themselves. Less than 20,000 tons a year are marketed, out of a production estimated at 150,000 tons.

The importance of rail transport is stressed in most discussions of groundnut production in West Africa. B. E. Thomas notes that in the former French territories 'production is almost entirely restricted to areas near ports or railways'[9]. In Nigeria 'it is hoped that in the next few years commercial output will show a further increase, not only as a result of the adoption of improved methods of cultivation, but also as rail communications are extended to the more isolated areas'[10]. Yet in Uganda the provision of rail facilities has failed to encourage any substantial production for export. About 10,000 tons have been sent overseas in several recent years, but in the Uganda Department of Agriculture a figure ten times higher is considered quite feasible. The long haul to the coast reduces the price that can be offered to the farmer, but groundnuts are carried by rail at a very low rate, and the charge from Tororo to Mombasa is only 68/- per ton, compared with a value at the coast averaging 1,180/- in 1961. Production for sale appears to be discouraged more by the amount of labour required and by the availability of more lucrative cash crops than by excessive transport costs.

The distribution of groundnut sales might suggest that transport facilities are of some significance, for there is a marked concentration in Busoga, which is well served in this respect: but sales are small in Mengo and Teso, which are important producers and which have equally good rail communications. A more important factor seems to be the local marketing situation, which depends on the initiative of the Asian traders. In Busoga the country's largest oil mills provide a local alternative market, and several buyers take a close interest in the crop and sometimes offer attractive prices. Elsewhere the situation is generally unsatisfactory, for traders will often buy only at prices low enough to allow for any market fluctuations. Rail

facilities are adequate to permit commercial production of groundnuts in many parts of Uganda, and other factors are responsible for the small quantity now marketed.

Maize

Among the food crops of Uganda, maize is that of which the largest proportion is marketed. Cultivation is very widely distributed, but production for sale is mainly concentrated in Buganda and Busoga, encouraged by the local markets of Kampala and Jinja and the employed labour in the surrounding country. Districts such as Kigezi and West Nile used to be too isolated to produce maize for sale elsewhere, but reduced costs of road transport have recently permitted some movements from these areas to Kampala. Very little maize is handled by rail in Uganda, even though it is a very bulky commodity and is carried at the lowest rate. All is handled by small traders who show no interest in rail transport.

The railway suddenly assumed vital importance in 1953, when the government offered to buy maize in Buganda and Busoga at twice the normal price. As a result 124,600 tons were marketed, four times the weight of coffee produced in that year, and for two years the railway was kept busy moving maize to Kenya, to Tanganyika and to the coast for export overseas. The experiment brought a substantial loss to the government, and it has not been repeated[11]. Even at the low rate charged, the haul to Mombasa is too costly for maize to become a regular export crop. The railway could help Uganda to export maize to Kenya, where prices are much higher, but the Kenya government refuses permission for this.

Other Food Crops

Some crops which are very extensively grown in Uganda have been given no individual attention, for they do not appear to be directly affected by rail transport. Over most of the country either bananas or millet forms the staple diet, yet neither is separately recorded in even the most detailed railway returns, for very small quantities are handled. These and other crops such as cassava, sorghum, sweet potatoes and beans, are grown almost entirely on a subsistence basis. Even when there is a surplus for sale, it rarely moves further than the nearest town market. If some enterprising trader finds that higher prices are being offered in another District, he may send such produce there by lorry, but he rarely considers rail transport for the price might have dropped by the time the produce arrives by that means. Substantial quantities of bananas are regularly brought into Kampala by lorry from other parts of Mengo District, but the distances involved are too short to make rail haulage attractive. A more common form of transport for such crops is demonstrated each morning when hundreds of people cycle into Kampala with large loads of bananas or sweet potatoes. There is certainly nothing comparable to the situation in southern Congo, where there is a concentration of cassava cultivation near the B.C.K. railway by which it is supplied to the Katanga mineworkers[12].

In many countries improved transport facilities have had important indirect effects on food crop production. Geographers[13] and economists[14] have both pointed out that better communications can encourage regional specialization; and if one area experiences increased cash crop production, it may become dependent on other areas for its food supplies. Thus many farmers in Ghana concentrate most of their attention on cocoa cultivation; but in Uganda, cotton and coffee have been incorporated into the existing agricultural system, and almost all farmers still produce their own staple food requirements. It was observed in a United Nations paper, with reference to the percentage of food crop production that is marketed in tropical Africa, that 'Belgian Congo is probably near the upper limit for all the territories in the area; Uganda represents a lower limit'[15].

Livestock

Cattle are of considerable importance to the people of Uganda, and they number about $3\frac{1}{2}$ million, while about $2\frac{3}{4}$ million goats and one million sheep are also kept. The main value of stock is often social rather than economic, but sales now bring the owners about £7 million a year, and are sufficient to make Uganda virtually self-supporting in meat supplies. The distribution of goats is very similar to that of population, and they are generally marketed on a local basis only. The distribution of cattle is somewhat different for there is a clear concentration in the east, especially in Teso and Karamoja, and the cattle trade involves a substantial amount of movement between Districts, much of which takes place by rail. About 90,000 cattle were moved for slaughter from Teso, Karamoja and Lango to Buganda and Busoga in 1962, and of these 52,417 were railed from Soroti station.

The cattle trade is less dependent on transport facilities than commercial agriculture, since stock can move on the hoof, and droving is often economic provided that movement is slow and that ample grass and water are available. Karamoja cattle all move in this way to Soroti, although these conditions are not fully satisfied, and on a journey of 50 miles in two days they certainly lose weight. Alternative sources of income are so few that the trade takes place despite inadequate transport facilities, but the railway has been vital for the onward movement to Kampala and Jinja, and for the large scale export from Teso to Buganda. Droving across Uganda would pose severe problems of disease control, and could not be contemplated for the frequently infected Karamoja cattle. In addition, movement could not exceed 15 miles a day over this distance, so the cattle trader would have his capital tied up for weeks, and a price differential of about 70/- per beast would be inadequate compensation for this. The real costs of droving, and the charge for road transport, would both approach this figure, whereas the rail charge from Soroti to Kampala is only 22/- per animal. 'Over long distances it is generally agreed that rail transport is the most satisfactory method of moving beef cattle'[16], and the railway has been of great value in this way in Uganda.

However, rail facilities do not seem to be the major factor in the distribution of cattle sales, for most of the railway services are little used for cattle

traffic. Climate and soil conditions, which reduce the returns from agriculture in Teso and almost inhibit it in Karamoja, the distribution of tsetse-fly, the strong pastoral tradition among certain tribes, and variations in the amount of Veterinary Department activity are all probably more important factors.

The railway has encouraged no export of cattle from Uganda, but it has assisted the recent development of a freezing plant in Kampala, from which carcasses are sent by rail to meat canning factories in Tanganyika and Kenya. Proposals for a canning industry within Uganda are under discussion, the most likely site being either Tororo or Soroti, and this could undoubtedly make good use of the railway for exports.

The milk yield from Uganda's cattle is very low, and sales take place only on a local basis, so that the railway is not used. The increasing demand in the towns is now met in part by supplies from Kenya, and the railway has played an important part in this trade, bringing milk daily from Eldoret. 690,956 gallons were received at Kampala and 508,815 gallons at Jinja in 1962. The rail freight raises the wholesale price from 2/56 per gallon at Eldoret to 3/68 at Kampala, but the railway still has enabled the Kenya product to capture the market so effectively that efforts made to sell milk from the surrounding country in Kampala and Jinja meet with limited success, and it has therefore discouraged somewhat one economic activity in Uganda.

Hides and skins form valuable by-products from the livestock of Uganda. Almost all are exported, and they earned £1.2 million in 1962, when the volume railed to Mombasa amounted to 4,550 tons. The distribution of production is tied to that of meat consumption, so although there is some concentration in the more developed areas of Buganda and the east, all Districts make some contribution, and much internal transport must take place.

The exporting firms maintain depots in most District centres, from which the hides and skins are sent to baling centres at Kampala and Mbale, almost always by road. This is quicker than rail transport, it enables the agent to keep a closer check on his hides and closer contact with the main depot, and is reasonably economical since a return load can always be found in the two large towns.

Transport costs cause the price paid for hides to be about 10 cents lower per lb. in Kigezi and West Nile than in Mengo and Bukedi, but this is not of great significance when the prices normally approach 2/- per lb. Rail transport facilities can hardly affect the distribution of production since the hide or skin is now recovered from virtually every animal slaughtered in Uganda: and although transport facilities are vital in making hides a marketable product throughout the country, the railway to the coast and internal road haulage are proving quite adequate for this.

Fishing

The lakes of Uganda support a fishing industry in which the annual catch of about 60,000 tons is worth over £2½ million. One-third is obtained

from Lake Victoria, a quarter from Lake Kyoga, 20% from Lake Albert and 20% from Lakes George and Edward. There are thus supplies within easy reach of most places, and most of the fish has to be transported only a short distance, so that rail facilities are of little importance. Most of the Lake Victoria catch is taken by lorry or bicycle for sale in and around Kampala, Jinja, Masaka and Mbale. The Lake Kyoga fisheries face severe transport problems, but these result from the indented coastline and the inaccessibility of many landings. The main markets lie within 70 miles of the lake shore, and the most beneficial development would be the replacement of cycle by lorry transport, for which better local roads and larger-scale organization are needed. Inaccessibility has also severely limited fishing in the southern part of Lake Albert, although from the north fish is taken by lorry or bus to West Nile and Acholi markets. Until 1960, over half the catch, about 6,000 tons a year, was sold in Congo, but only 20 tons were handled by the railway steamer in 1960, most being brought by canoe to Panyimur and then sent by lorry as far as Stanleyville, 400 miles away.

Until 1960, the greater part of the catch from Lakes George and Edward was also taken to Congo, lorries calling regularly at Lake Katwe, Katunguru and Kasenyi. The trade was hit by the upheavals following independence, however, and alternative markets had to be sought. Fish is not popular among the people of Toro and Ankole, but the railway to Kasese, a few miles from the chief landings, offers excellent opportunities for sales elsewhere. 1,185 tons of dried fish were railed from Kasese in 1961, and rail transport developed a useful role for movements of dried fish for the first time, but in 1962 most of this traffic was captured by road transport. A freezing plant on Lake George despatched 200 tons of fish by rail in 1960 to Kampala and Nairobi, but this seems rather insignificant when the total catch exceeds 11,000 tons. Two other freezing plants in this area supply the same markets by road.

The extent of regional self-sufficiency in fish supplies limits the demand for long-distance transport, and local roads are of greater concern to the industry than railways. There is scope for cross-country movements, but while fishing lies in the hands of small operators who sell to innumerable itinerant fishmongers, rail transport is likely to be little used.

Timber

Only 4% of the land surface of Uganda is officially designated as forest-land, and timber is not a major export. About 2,000 tons were sent overseas in 1963 and 2,700 tons were supplied to Kenya and Tanganyika, but sawmills produced a further 20,000 tons to satisfy local requirements. Railway services handle all the exports, but most internal movements of timber take place by road, and the pattern of rail facilities has influenced the distribution of timber production very little. The largest forest areas lie in the west, and these might have been more fully exploited if the railway had approached them years ago; but the western extension has failed to attract any timber traffic, indicating that rail access is not of major importance

today. The lake services assisted the establishment of sawmills in Bunyoro, and at Sango Bay in Masaka, but the Bunyoro mills no longer use Masindi Port, while no interest is now shown in the tug and lighter service from Sango Bay. Only Kome and Sesse Islands still depend on E.A.R. & H. for the evacuation of timber.

The cost of road transport from Bunyoro or Toro to Kampala (8 to 10 cents per square foot compared with timber prices of 50 to 80 cents) reduces the profitability of sawmilling in the west: but since some timber moves 175 miles by road from Hoima to Jinja for impregnation, and then 270 miles by rail westwards again to Kilembe which is only 155 miles from the mill, transport within Uganda cannot be a vital factor in the industry. As in the case of fishing, it is perhaps most important in relation to local accessibility, as on Mount Elgon where forests lie near to the Mbale market but have no road access.

Transport costs have perhaps limited the scale of production for export, for while the railway provides the necessary physical facilities, it is considered that 'the long haul from Uganda to the coast places Uganda at a serious initial disadvantage in obtaining a bigger share of the overseas markets'[17]. The main species exported is relatively valuable mvule and the railway rate is exceptionally low; yet it still represents 7½% of the value at the coast. In addition the internal pattern of railway services is not very satisfactory, since timber suitable for export is found mainly in Bunyoro, and the cost of the road haul to Kampala represents a further 7% of the value of the timber. However, the steamer service from Masindi Port was available at much lower cost for many years if the sawmillers cared to use it, and it is doubtful whether extended rail facilities would now encourage much increased exports. The small extent of stands of suitable timber and the government policy of restricting felling to ensure future domestic supplies have played a much greater part than inadequate communications in limiting exports.

Copper Mining

Copper production is the economic activity for which rail transport within Uganda, in addition to the link to the coast, has been of greatest significance in recent years, for the development of copper mining in the Ruwenzori was heavily dependent on the construction of the western extension railway. Conversely, without this assured source of traffic, the building of the railway could not have been justified. The industry today plays an important part in the Uganda economy, for copper stands third in value among exports, though very far behind cotton and coffee, and 15,538 tons of blister copper earned £3.6 million in 1962.

The Kilembe copper deposits have been known throughout this century, and the possibilities of exploitation were first examined in 1926. Exploratory work was abandoned when world prices fell in the early 1930s, but it was revived in 1947, and a Canadian concern finally decided to proceed in 1953. Among the negotiations which took place during the six years were those with E.A.R. & H., and the fact that they had been successfully concluded

was an essential factor in the decision. In their own account of the industry, Kilembe Mines Ltd. state that 'the birth of the mine was only made possible by the construction for £5 million of a 208-mile railroad'[18]. The mine came into production in July 1956, while the final section of the railway was opened the following month. The railway could not be taken right to the mine, which lies in a steep and narrow valley, 1,400 feet above the floor of the Western Rift, but it reached the foot of the valley at Kasese, only eight miles away.

The ore, of which 983,000 tons was mined in 1962, is treated at the mine to produce a concentrate averaging 26% copper, compared with 2 to 2½% in the ore. The ore also contains about 0.18% cobalt, which is separated from the copper at this stage. The problem of transport to the railhead was solved by the construction of two pipelines through which the copper and cobalt pass in suspension in water, before being dried at Kasese. The cobalt is now stockpiled there, for world prices do not justify its shipment to Mombasa for export: but the copper concentrates are railed 266 miles to Jinja, where they are smelted to produce blister copper, which is sent on by rail to Mombasa.

The transport factor played a large part in the decision to locate the smelter at Jinja. A concentrating plant had to be installed at Kilembe, for transport of unprocessed ore would have been totally uneconomic; but for the smelter a choice had to be made between a site near the mine and one near the most obvious source of power. The smelting process requires large quantities of electricity, and this was already available at Jinja, from the Owen Falls Dam. Power could have been made available at the mine either by bringing high-tension lines from Jinja, or by developing more fully local hydro-electricity resources, which now supply the power requirements of the mine. Either course would have involved considerable expenditure (power lines from Jinja were estimated to cost £2½ million), but a far smaller weight would then have had to be transported across Uganda. This would have suited the mining company well, but it was not a practical possibility since the Railway Administration was not prepared to construct a line to Kasese unless it was assured of the revenue from haulage of concentrates. The volume of blister copper, if carried at standard rates, would have been inadequate to support the railway, and an artificially high rate could not have been charged, for the only purpose of siting near the mine would have been reduction of transport costs. Thus if smelting took place at Kilembe or Kasese there could be no railway unless heavily subsidized, and without a railway for moving even the smaller volume of blister copper, the entrepreneurs were unwilling to proceed.

The volume of concentrates railed from Kasese to Jinja rose from 34,000 tons in 1957 to 63,000 tons in 1962, when the industry provided E.A.R. & H. with freight to the value of £252,000. This represented 9½% of the total expenses of the company, and transport costs constitute a substantially higher proportion of the value of copper than of that of cotton or coffee (Table 1). The large volume of stores railed to Jinja and Kasese contribute to this figure, and although the movement of much equipment to Kilembe

by road before 1956 showed what could be done without the railway, it is now of great value for the transport of supplies as well as copper.

The prospects for cobalt exports remain poor. In 1959, a Japanese firm showed interest in taking concentrates for both cobalt and sulphur, and a figure of 64,000 tons a year was mentioned. The price suggested was 180/- f.o.b. Mombasa, but even at a special rate of 11½ cents per ton-mile the rail charge would be 120/-, plus 10/- port charge, and therefore the proposal was not considered very attractive. Thus at present price levels, even a direct rail link to the sea does not enable cobalt to become a major export from an area 950 miles inland.

TABLE 1

KILEMBE MINES: COSTS PER TON OF BLISTER COPPER PRODUCED

	1957	1960
	Shillings	
Mine	1,272	1,260
Concentrator	912	478
Smelter	999	484
Transport Kasese to Jinja	198	168
Transport Jinja to Mombasa	78	92
Ocean Freight	166	104
Others	970	608
Total	4,595	3,194

Source of data: Kilembe Mines Ltd.

Other Metallic Minerals

Several minerals are worked on a small scale in the south-west of Uganda. Wolfram has been mined in Kigezi since 1937, exports ranging between 100 and 200 tons for many years, but falling to only five tons in 1962. Tin mining was established ten years earlier, and exports reached 532 tons in 1938 but they amounted to only 94 tons in 1962, when the more easily worked ore bodies had been exhausted. Beryl mining, however, is increasing in importance, and exports have risen from 18 tons in 1944 to 1,064 tons in 1962.

All three ores are crushed at the small scattered mines, and concentrates are taken by lorry about 250 miles to Kampala and then railed to the coast. Until 1950, export took place via a tug and lighter service on the Kagera River; but the river service was maintained by E.A.R. & H. only with great difficulty, and periods of low water frequently caused its suspension, until it finally ceased operation in 1950. By then the exporters preferred road transport to Kampala and transit from there by rail, to a 70-mile road haul to Kyaka Port, with no return loads, and then an irregular river service.

Road transport to Kampala, the rail journey to the coast, and sea freight to Britain each cost about £5 a ton. Local rail facilities could reduce

costs by about £3, but since wolfram and tin concentrates are worth over £500 per ton, and beryl concentrates about £120, it is unlikely that this would make any substantial difference to the production of any of the three metals.

Transport costs have discouraged any exploitation of iron ore, Uganda's most abundant mineral resource. Deposits occur in many areas, some of high grade, notably haematite ores in Kigezi and magnetite in the Sukulu complex near Tororo, but the world price of even the highest grade ore is insufficient to meet the cost of both working and transport to the coast. Offers of 110/- a ton f.o.b. Mombasa have been made for Sukulu ore, but the normal freight rate from Tororo would be 87/- a ton, with port charges in addition. Since this applies to the part of Uganda nearest to the coast, there is no question of ore exports from Kigezi, whatever transport facilities might be provided. Uganda's iron resources are, therefore, likely to be developed only when some practicable method of local smelting is discovered.

Phosphates and Fertilizer Production

Among the most important mineral resources of Uganda are vast phosphate deposits in the Tororo area. A small deposit twenty miles north of the town has been worked for some years, but far greater importance attaches to the Sukulu deposits, nearer to Tororo, which consist of 200 million tons of weathered rock, containing 13% apatite (P_2O_5). This is thought to be the highest grade deposit in the world, yielding a 40% concentrate after processing. The material also contains pyrochlore and magnetite, which could both form valuable by-products. The physical conditions for mining are excellent, and although the separation of the various minerals presented technical problems, these have been overcome. The deposits were discovered in 1950, and subsequently much attention was devoted to the possibilities of exploitation, at a rate of two million tons a year, to produce at least 400,000 tons of concentrates for export. High-grade phosphates are in great demand for fertilizer production, and South Africa, India and Japan all offered potential markets; yet nothing more than a few trial packets have been exported.

The proposals were not implemented because no concern was prepared to provide the capital investment required, and transport problems were one reason for this. A similar deposit if located near Mombasa would enjoy a very competitive position on the world market, but the need for a 675-mile rail haul completely alters the situation. The prices offered average 120/- to 150/- per ton f.o.b. Mombasa. Production costs would be below 70/-, but the charge for the rail haul would be at least 60/-, and therefore the return on investment would be very low. A rail rate of 50/- would just cover variable costs, but this could not be quoted since the movement of 400,000 tons of apatite would require an expenditure of some £3 million on new rolling stock and port equipment. Thus even though the deposits lie beside the main railway line, at the nearest point to the coast, the railway has not reduced the effects of Uganda's inland location sufficiently to permit the export of phosphates, any more than iron ore.

Nevertheless mining has now begun, though on a much smaller scale than originally proposed, for in 1963 a factory was set up at Tororo to use the apatite for local fertilizer production. Several possible sites for the plant were considered. Since much imported sulphur is required, and since the chief markets lie in the Kenya highlands, location in Kenya would have offered advantages. A site within Uganda was preferred mainly because the project was sponsored and partly financed by the Uganda Development Corporation. Rail facilities play an important part in making production at Tororo an economic proposition, for they enable sulphur and other supplies to be brought relatively cheaply from the coast, while the finished product is moved to Kenya markets at extremely low rates.

Manufacturing Industry–Cement

The Uganda cement industry consists of a single plant, built in 1952 at Tororo. The main stimulus for its construction was the demand for cement for the Owen Falls Dam, but it has since satisfied all the government and commercial requirements of the country. Although the railway provides the facilities for imports, the freight charge from Mombasa to Tororo adds 87/- a ton to the price of cement, providing a strong incentive to use local raw material to supply the local market. The opening of the Tororo factory made cement available at 285/- a ton compared with 350/- to 400/- for the imported product.

The choice of location for the factory was somewhat limited by the distribution of suitable limestone deposits, for these are found only near Tororo and in the rift valley in Toro District. Rail facilities played an important part in the decision, for while the Toro deposits are of higher quality, they were very distant from any railway in 1952, and the costs of moving either limestone or cement from Toro by road to the main Uganda markets would have been prohibitive. If the railway to the west had been built earlier, Tororo would not have been the automatic choice for the plant; but it might still have been selected because of its relative proximity to potential markets both in Uganda and elsewhere in East Africa, and because of its advantageous position for the import of fuel, whether oil from overseas or charcoal, of which 10,000 tons a year are now railed from wattle plantations in Kenya.

Rail transport is used for almost all the cement sent to Kampala, and for much of that supplied to other towns. In 1962, 39,173 tons were despatched from the factory by rail, 10,939 tons by road, and 4,901 tons moved by conveyor belt to the adjacent asbestos plant. The railway has faced severe competition from road transport, however, for the 1957 figures were 47,622 tons moved by rail, and 33,474 tons moved by road. It now has such a large share of the traffic only as a result of the introduction of special low rates in 1957, and of government insistence on a price discount on cement moved by rail.

The railway services have not helped the industry to find any regular markets in Kenya or Tanganyika, for factories near Nairobi and Mombasa

have supplied both countries, including even the areas bordering Lake Victoria. The western railway carried a small export to Congo until 1959, when a new factory opened at Bukavu, but road transport had been competing for this traffic also. More recently a few loads have been taken by road to Sudan, at a charge of 130/- a ton for the 430-mile haul to Juba; it remains to be seen whether the rail extension to Gulu can encourage an expansion of this export market.

The railway is certainly performing a very useful function in handling large quantities of Tororo cement, and in bringing certain supplies to the factory; but it is probably not vital to the existence of the industry, for the competition for traffic suggests that even if only road transport were available distribution from Tororo could still take place, with fewer problems than moving imports from Kenya or beyond. Rail facilities have certainly had some indirect influence, however, in so far as they have assisted economic development, which has provided the demand for cement. They may have directly affected the location of production within Uganda, and they certainly have had some indirect effect through the concentration of development in the area between Kampala and Mbale.

Asbestos Cement

A factory producing asbestos cement was built in 1956, adjacent to the cement works, which provides the main weight of raw material used. The railway brings smaller quantities of raw asbestos, imported from overseas, and carries the finished product throughout East Africa. In 1960, the railway services handled 5,600 tons of asbestos cement products, out of a production of 6,500 tons. Although these products are relatively fragile, they are carried safely even by the lake steamers, by using wooden loading boards, and handling these rather than the asbestos products themselves. Rail facilities did not directly influence the location of this industry, but they have contributed to its success in supplying an East African, rather than purely internal, market.

Bricks and Tiles

Brick and tile works must be sited on occurrences of suitable clay, for this material is very difficult to transport, but such clays are sufficiently abundant in Uganda for the distribution of production to match fairly closely that of the market. The largest plants are located within ten miles of Kampala and Jinja, while there are small works near towns such as Mbarara and Kabale. Only a short road haul is thus required for much of the production. The extent of local self sufficiency has recently been reduced somewhat, for the larger works are extending their markets, and bricks are beginning to move from Kampala to many parts of the country. Generally, road transport is used even when rail facilities are available, as for movements from Kampala to Soroti. The charge for this road haul is about 75/- a ton, compared with 45/- by rail—a substantial difference for a commodity worth 45/- a ton at the factory. The main explanation given is the reduction of handling to one closely supervised operation at

each end, one company claiming that the breakage rate was 5% by road but 30% by rail.

Although little used for internal distribution, the railway is helping some works to find markets outside Uganda. About 4,300 tons of bricks were railed to Kenya in 1960, while movements across Lake Victoria to Tanganyika reached substantial proportions in 1961, when one firm had a large contract with Williamson Diamond Mines. The railway services are therefore helping to make brick and tile manufacture an export industry for Uganda.

Textiles

One of the largest factories in Uganda is the textile mill at Jinja, built in 1956 and since enlarged, which now turns out 30 million yards of cotton cloth a year for the East African market. Jinja is a very satisfactory site as far as transport is concerned, for a short road haul brings most of the lint requirements, while the remainder can be railed from places further away, and the railway system enables cloth to be distributed throughout much of East Africa. Transport costs on the finished product are not of great importance, since the rail haul to Dar es Salaam adds little over 1% to the retail price: but the railway is of value for the movement of small lots to many destinations outside Uganda. Road transport is usually preferred to rail for goods moving in small quantities, but it would be difficult to find lorries to take loads of one ton or less to the eleven towns in Tanganyika which regularly receive supplies by rail.

Rail facilities were not a major factor influencing the location of the mill, for all sites in East Africa which might have been considered were rail-served, while the industry could certainly have functioned on the basis of road transport alone if necessary. The railway is playing a useful role in the industry, however, especially in helping it to serve a wide market. It might only be noted that rail transport is equally useful for moving inland imported textiles, of which 7,500 tons were handled in 1960 within Uganda alone, compared with 2,200 tons of Jinja cloth distributed throughout East Africa.

Oil Milling

An oil milling industry, using the cotton seed produced by the ginneries, developed during the Second World War, and by 1948 there were twenty-eight mills widely scattered through the cotton-growing areas of the country. There has since been further expansion, but also a concentration into fewer and larger units. Mills at Jinja, Kakira and Kampala have expanded partly at the expense of those elsewhere. This concentration has been assisted by the Lint Marketing Board's policy of paying transport costs on cotton seed, so that mills no longer benefit from being sited near to the source of their chief raw material. Much transport of seed takes place as a result, and the railway plays an important indirect part in the location of this industry by helping the marketing board to pursue this policy. Rail trans-

port is of more direct importance to the millers for supplies of palm and coconut oil, used in soap manufacture which takes place at the larger mills. In 1960, 2,654 tons of coconut oil were railed to Uganda from Mombasa and Tanga, while 1,171 tons of Congo palm oil were railed from Kasese to Kampala and Kakira.

Transport of finished products takes place largely by road. The largest mill, that at Kakira, produced 9,270 tons of vegetable oil, ghee and soap in 1960, of which only 650 tons were despatched by rail. The railway services assisted the development of markets for oil in Kenya and Tanganyika, but much of this trade is now handled by road. Oil is sent by lorry even to Mwanza, over some very poor roads, the main reason given being speed of delivery. The 1960 customs returns recorded exports of 8,440 tons to Kenya and 1,518 tons to Tanganyika, while the railways handled only about 4,500 tons that year. The railway is of greatest importance for the transport of the by-product, cattle cake, for which there is little local market, but which is in demand in Britain. About 72,500 tons were railed to the coast in 1960. The product is worth about 450/- a ton at Mombasa and could not bear high transport costs, but it is carried by rail at a very low rate, and the charge from Jinja is only 55/- a ton. Oil milling could take place in Uganda even if no market for cotton seed cake existed, but the opportunity for its export provided by the railway greatly benefits the industry.

Cigarettes

Cigarette production was one of the first manufacturing industries to be established in Uganda, for factories were opened at Jinja in 1932 and at Kampala in 1935, using the small Uganda tobacco crop to supply the East African market. In 1955, the tobacco company established a new factory in Nairobi, and ceased production at Kampala: but production continues at Jinja, amounting to 1,285 tons in 1962.

The transport factor has not greatly affected the location of the industry within East Africa. The value-to-weight ratio of the finished product is exceptionally high, while that of the raw material is high enough for the costs of movement from one country to another to be borne without difficulty. To satisfy blending requirements some tobacco is brought to Jinja from the Southern Highlands of Tanganyika and for such hauls the services of E.A.R. & H. are of great value; but these supplies could be brought by private road transport if necessary, as are those from Uganda sources. For movements of tobacco from the Kampala re-drying plant to Jinja a regular contract with a road transporter is preferred to rail haulage; neither plant has a rail siding, and the lower rail rate is more than off-set by the extra handling required.

Cigarette distribution within Uganda is organized through depots at Kampala and Tororo, and movement from Jinja to each takes place by road. The railway and lake services are of value to the tobacco company for exports to Kenya and Tanganyika, but such is the value of cigarettes that they are far from vital to the industry even in this connection.

Brewing

Breweries were established at Port Bell in 1950 and at Jinja in 1955, each plant producing at the rate of about 800,000 gallons (or 8,000 tons) a year. Rail facilities are of very small importance to this industry. The chief raw materials by weight are water and bottles, of which the main source is the return of empties, and the only materials railed to the plants are small quantities of malt and hops. For beer distribution road transport is preferred to rail since door-to-door deliveries to the retailers are possible, the chances of breakage are reduced and empties normally ensure a return load. The cost increases the price of beer from 40/- a case in Kampala and Jinja to 45/- in Toro and Acholi, but there is no evidence that use of the railway would reduce costs, especially since neither brewery has a rail siding. The Lake Victoria steamers perform a useful function in extending the market into Tanganyika, for 500 tons are shipped to Mwanza annually, although movements to Bukoba normally take place by road.

Steel

The most important recent industrial development in Uganda is perhaps the steel mill built in 1961/3 at Jinja. As in the industries already considered, raw material and markets are both available in East Africa, although three-quarters of the 30,000 tons of scrap required annually is expected to come from Kenya, and the bulk of the finished products should find their market there.

Sites in Kenya were considered, and the decision to adopt that at Jinja rested mainly upon the initiative of the local Asian concern which is the leading entrepreneur, upon the support given by the Uganda Development Corporation, and upon the possibility of negotiating for cheap power supplies from Owen Falls. The railway plays an essential part in making location at Jinja possible, for about 18,000 tons of scrap are to be railed annually from Nairobi, with further supplies brought by rail and lake steamer from Nakuru, Eldoret, Kisumu and Mwanza. The distribution of steel plates and bars should be similar in pattern and volume, providing well-balanced new loads for the railway. The importance of cheap transport is such that the steel company demanded special rates, and a rate of 44/- a ton for scrap from Nairobi to Jinja has been fixed, compared with 60/- at the normal rate, and with its value of 250/- to 300/- a ton. The railway services are bound to play an important part in the industry, as the special rate was granted on condition that they would be used for all movements to and from the mill which exceed fifty miles. There is no doubt that even though the railway neither stimulated the establishment of the mill, nor determined its location, it was a necessary condition for this development.

TABLE 2

E.A.R. & H. FREIGHT TRAFFIC 1960
MOMBASA TO UGANDA STATIONS (Tons)

Commodities of which over 3,000 tons were handled

	Bulk Oils	Salt	Iron Sheets	Iron Steel	Tex-tiles	Rice	Motor Cars	Ferti-lizer
Kampala	86,949	12,203	7,398	4,711	4,848	3,056	3,109	255
Jinja	18,473	1,025	914	1,156	542	605	399	122
Mbale	12,039	1,567	802	466	820	345	81	—
Soroti	6,263	1,332	573	466	592	242	—	—
Tororo	2,078	520	345	178	—	60	—	—
Kasese	15,395*	1,457*	116	678	—	—	—	1,450
Kakira	2,893	—	—	404	—	—	—	4,376
Kawolo	95	60	—	182	—	—	—	3,201
Nsinze	—	610	184	—	—	270	—	—
Kamuli	—	284	116	—	86	81	—	—
Rhino Camp	—	866	—	—	61	—	—	—

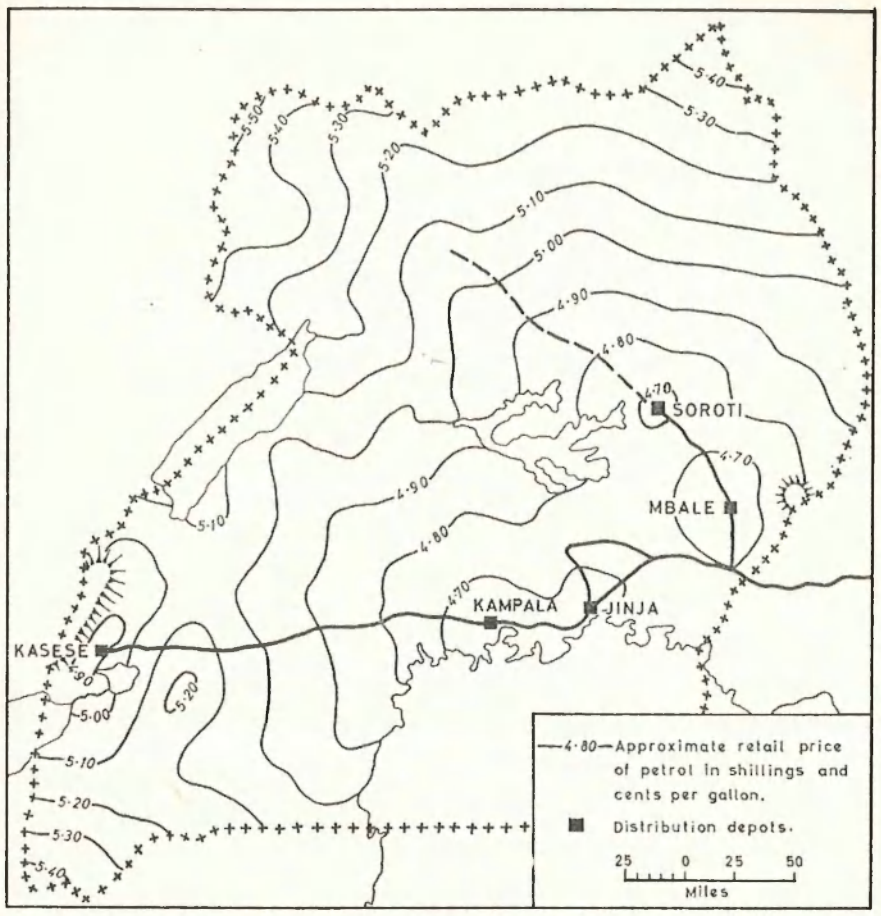
(— = under 50 tons)
(* = chiefly for Congo)

Source of Data: E.A.R. & H. Hollerith files, Nairobi

Import Trade

Virtually all the goods imported into Uganda from overseas are railed from Mombasa, the total volume of such traffic amounting to 325,207 tons in 1962. The country thus depends on the railway as much for its import as for its export trade, although a larger proportion of the former could probably bear the costs of road transport. The largest movement is that of petroleum products in tank waggons, amounting to over 120,000 tons a year. Other goods handled in large quantities are distinguished in Table 2. The facilities for obtaining imports have made a very great contribution to the Uganda economy, providing many of the material requirements for development as well as the trade goods which have offered the incentive for it. The railway may perhaps hinder certain developments by assisting the inflow of some commodity that might otherwise be produced locally. This applies particularly to imports from Kenya, whose goods enter Uganda free of duty since the two countries share a customs union, milk and potatoes being two examples. Even as far as imports from Kenya are concerned, however, the benefits of rail facilities for imports far outweigh these slight disadvantages for Uganda.

When it is claimed that new railway-building will bring economic development to an area, it is often suggested that the stimulation of local trade in imported goods will contribute greatly to this. It is therefore important to examine the present pattern of this trade. Table 2 gives some indication of the destinations of goods brought from the coast by rail. The bulk oil traffic is limited to a few stations by the need for costly installations to handle it[19] (Map 3), but many other commodities show a similar pattern, while some which move in smaller quantities are consigned exclusively to Kampala, Jinja, Mbale and Soroti.



Map 3. Uganda: Petrol Prices, 1963. The prices are those recommended by the oil companies to their retailers, but some variation from them is permitted. It should be emphasized that the isopleths are very approximate in some areas, due to the limited number of petrol stations.

The dominance of Kampala in the import trade stands out clearly. Although the town and its immediate surroundings form a large part of the national market for some goods, its wholesalers also supply the whole of Buganda and Western Region, and in some cases even West Nile. Kampala is much assisted in this function by the railway, although it had already become established as the commercial centre for much of Uganda while it was dependent on the steamer service to Port Bell. Jinja serves a small though relatively rich area of Busoga and Mengo, while Mbale has developed similar functions to Kampala for eastern and northern Uganda, although the trade is on a much smaller scale. Soroti shares this function to some extent, but wholesale trade is less well established there. Many stations which despatch a large volume of exports receive very small amounts of imports, and this trend towards concentration is increasing, encouraged by

improvements in road transport. The small trader in Lugazi or Mukono has little incentive to obtain goods through the local station when supplies can be brought daily in small quantities from wholesalers in Kampala or Jinja. Any new railway can therefore be expected to assist directly trade development only in the larger trading centres through which it passes by the facilities it offers for imports.

The prices of most imported goods are higher in the more remote Districts than in Mengo or Busoga, but this applies as much to West Nile, which is served by E.A.R. & H., as to Kigezi which is not. Map 3 indicates the variation in petrol prices, which show some relationship to rail facilities, but which depend more upon distance from the point of import. There is very little evidence that goods are less readily available in towns not served by the railway than in those of comparable size beside it. It has been stated that 'Uganda is unique among African territories in the extent to which hoarding takes place, and the more commonly accepted explanation is that the native has insufficient opportunity to buy the imports he could afford'[20]. This statement was made in 1955, and it may then have been true; but since the country-wide boom in retail trade development which took place about that time, this is no longer the impression gained in any town in the country. Inadequate transport facilities sometimes contribute to higher prices, but nowhere do they prevent goods being offered by the traders except on a very local scale. New railways could be of value in reducing the costs of transporting the lower value imports, and perhaps in encouraging wholesale trade, although it is notable that this is now as well developed in Masaka, which relies on road transport from Kampala, as in Soroti, which has been a railhead for many years. Any reduction in retail prices is certainly to be welcomed, but it is debatable whether this would encourage increased purchases of imported goods which would in turn require greater production of local goods for sale, or whether it would merely lower the cash requirements of the people of any area.

Summary

Subistence agriculture is still perhaps the most important form of economic activity in Uganda, and this has been little affected by rail transport facilities, although some changes have taken place over the past sixty years which are related to the economic development which followed the building of the Uganda Railway. The commercial economy is based very largely on cash crop production, and in this the railway is playing a most important role. Over 200,000 tons of agricultural produce are moved to Mombasa annually, and recently there has been little delay in clearing the crops, despite their seasonal nature. The railway across Kenya made possible the export of cotton and coffee; export could now take place by road, but as indicated in Chapter 8 the cost would certainly be greater, while it cannot be assumed that the same crops would have been established on this basis. It is important to note, however, that the railway has not entirely eliminated the problems presented by Uganda's inland location. Bananas grow prolifically, and Uganda is said to be the world's largest producer[21], yet

none are exported since the cost of transport to the coast in addition to ocean freight charges, would be more than the product could bear, especially as its perishability would demand specialized equipment.

The railways within Uganda are also of great value for the efficient clearance of the export crops, and have assisted the spread of production over the country. In the past, production was concentrated in the areas best served by rail and steamer services, and this was one factor which helped Buganda and the east to establish an early lead in economic development, which they have maintained ever since. The situation is very different, however, from that in Rhodesia, where a clearly defined belt along the 'line of rail' is an important feature of the economic life of the country, or even that in Senegal, where production of the chief cash crop, groundnuts, is concentrated in the west and in a narrow band extending inland beside the railway[22].

The significance of the railway as a factor influencing the distribution of agricultural activities today is reduced by the fact that the leading cash crops are of relatively high value, and can bear the rather higher costs of road transport from districts not served by rail. It was observed in Congo that while cassava production for sale is concentrated along the B.C.K. railway, as mentioned above, cotton cultivation is widely distributed throughout Kasai Province[23]. The importance of local rail facilities for the cotton or coffee grower has been almost entirely discounted by the intervention of the marketing boards, which distribute most transport costs equally among all producers. The position is similar to that in Nigeria, where this policy is especially significant in relation to the groundnut crop.

Rail transport plays an extremely important part in the Uganda economy by moving large quantities of agricultural produce at low cost. It has also influenced the nature of cash crop production, and the distribution of agricultural activities, but its significance in these respects appears to be no longer as great as is often supposed.

The railway plays a most valuable role in the cattle industry, but it is of little importance to either fisheries or forestry in Uganda. In several African countries, minerals provided the first stimulus for railway-building, but the railway has assisted large-scale mineral exploitation in Uganda only since 1956. The western extension and the Kilembe copper mine demonstrate how rail facilities and certain forms of economic development can be closely related today, but the failure to exploit iron ore and cobalt deposits lying adjacent to the railway indicates that it does not always solve the transport problems which hinder development[24].

The industrial activities of Uganda which serve primarily an internal market, such as brewing or soap manufacture, make very little use of the railway. The main exception is cement manufacture, and the extent of road competition suggests that rail facilities are not vital even to this industry. Railway services are much more important for inter-territorial trade, and they have helped to enlarge the market for asbestos products, bricks and other Uganda manufactures, while they have been of great importance in the decisions to establish the steel and fertilizer industries.

Many goods required in Uganda are not produced locally, and the railway has assisted their import. This may have hindered the development of certain industries, such as paper manufacture, and the full exploitation of resources like the salt deposits of Toro. But any disadvantages resulting from good communications are far outweighed by the advantages for all forms of local enterprise provided by the economic development of the past sixty years. Imports are now available in all parts of the country, but this has been so longer in Buganda and the east than elsewhere, and in this way rail access has contributed to the relative prosperity of these areas. As in the case of exports, dependence on the railway is not so great as in the past, especially for internal movements of imported goods, in so far as alternative means of transport are now available; even though in terms of traffic handled, the role of the railway is greater now than ever before.

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THE RAILWAY SERVICES ESTABLISHED BETWEEN 1902 AND 1931

Mombasa to Kisumu and the Lake Victoria services

THE railway construction of greatest importance for Uganda took place entirely outside the present borders of the country. In 1896 the British Parliament approved the building of a railway from Mombasa to Lake Victoria, and work began that year on what was known from the start as the Uganda Railway. The line reached the lake shore at Kisumu, then called Port Florence, in January 1902, and from there a tug and lighter service provided connection with Uganda. Steamers of 150 tons capacity were brought into operation in 1903 and 1904, followed by one of 250 tons in 1906 and one of 525 tons in 1907. These boats called at Entebbe and Jinja, and served Kampala first by Munyono and then by Port Bell, while several other ports were subsequently established.

Before this time the economy of Uganda had been almost entirely of a subsistence nature, and exports were largely confined to a little ivory. After the opening of the railway a substantial export trade developed very rapidly, its value rising from £29,450 in 1902 to £178,608 in 1907 and £607,253 in 1913. There was a similar increase in the value of imports, the figures for the same years being £75,038, £371,568 and £940,161[1]. Most historical studies suggest that there was a direct causal relationship between the building of the railway and the development of a commercial economy. Thus K. Ingham states in his history of Uganda: 'The main key to Uganda's material advancement was the arrival of the Uganda Railway at Kisumu'[2]. Much the most important of the activities contributing to this material advancement was cotton cultivation. The first recorded export of cotton was of ten tons in 1904; eight years later the figure was 4,695 tons.

Until 1902 any imports or exports had to be carried by porters over 600 miles, and even at the low rates then paid the costs exceeded £300 per ton[3]. As observed by Sir Alan Pim, 'agricultural exports were impossible owing to the prohibitive cost of transport to the coast' and 'no substantial

economic progress was possible until the railway was completed'[4]. On the railway the charge for movements between Kisumu and Mombasa averaged 48/- per ton in 1902, while the time required for the transit from the coast to Kampala had been cut from three months to six days. The railway permited imported goods to reach the country so providing an incentive for cash crop production, and provided passenger facilities so that administrators and traders could reach Uganda without the hazardous journey previously involved. Many other factors also contributed to the rapid economic development of Uganda, for in Kenya progress was slower even though it was better served by the railway. Among these were the favourable physical environment, the vigorous efforts of the government, and the response of the people. But the railway played a vital role, both direct and indirect, in the emergence of Uganda as a country playing a part in world commerce, and the present character of the country would certainly be different if the Uganda Railway had not been in existence in the early years of the century.

Expanding traffic soon demanded further expansion of facilities, and two new 525-ton steamers came into service in 1913 and 1914, while the tug and lighter capacity was increased. Piers had by then been established at Bukakata, Mjanji and Kibanga, serving Masaka, Bukedi and Kyaggwe respectively, so that all areas bordering Lake Victoria had been linked to the route to Mombasa. Chiefly through the establishment of cotton, this part of Uganda was thereby given a lead in economic development which it has maintained ever since. The growth of Kampala as a commercial centre was assisted by the building of a six-mile railway to Port Bell in 1913, which removed a heavy burden of porterage and relieved congestion which was holding up import traffic. Freight passing through Port Bell increased relatively slowly, however, and with the opening of the Busoga Railway in 1912 Jinja became the leading Uganda port.

The volume of freight traffic handled by the Lake Victoria steamers continued to rise until 1925, and they carried the whole of Uganda's overseas trade until the railway was extended into the country. When Tororo, Jinja and Kampala were provided with direct rail connection to the coast, most ports lost almost all their traffic, and only Bukakata and Katebo retained their former importance. The first 440 miles of the Uganda Railway, between Mombasa and Nakuru, formed part of the new all-rail route, and so remained as important as ever to Uganda. Indeed, the traffic using it has greatly increased, and although road transport now offers some alternative, any interruption on the railway would probably now cause more serious dislocation of the economy than it would have done fifty years ago, since Uganda is now more dependent on its connections with the rest of the world.

The Lake Victoria services still make a significant contribution to the Uganda economy, as a result of increasing trade with Tanganyika. Cigarettes and textiles are the most valuable products exported across the lake, and rice and beans are the chief imports. But the trade is smaller than might be expected in view of the customs union and the transport facilities available.

The total volume of E.A.R. & H. traffic on Lake Victoria in 1961 was 237,000 tons, but the largest movements were between Kisumu and Mwanza, while the Bukoba and Musoma areas of Tanganyika are both much more dependent on the lake services than any part of Uganda. The present fleet consists of 4 steamers and 52 lighters, while two train ferry units, costing £1¼ million, are on order. These are to operate initially between Kisumu, Musoma, Mwanza and Jinja, and could greatly assist trade between Uganda and both Tanganyika and the Kisumu area.

Port Bell is still one of the busier lake ports, but its importance for the present economic geography lies mainly in its former role in assisting the development of Kampala. In the 1930s the route to Mombasa via the lake remained sufficiently attractive for one of the first coffee works to be sited at Port Bell. Today, however, the port is rarely used for traffic moving to or from Mombasa, except when a severe shortage of waggons occurs, and its main value is for the shipment of locally-produced beer, aerated water and bricks to Tanganyika, and for local timber movements.

Bukakata is the only port at which traffic increased between 1930 and 1950, for it serves Masaka District which has not been provided with rail facilities. The alternative to the use of Bukakata is road transport to Kampala, and until recently this was too expensive to compete successfully for low-value traffic. The position has now changed, and the volume of freight handled at the port is declining as shown in Table 3. Coffee accounts for almost all the goods despatched, and despite a great expansion of production since 1950, an increasing proportion has been railed from Kampala, as mentioned earlier. There has been an almost complete re-routing of

TABLE 3

FREIGHT TRAFFIC AT BUKAKATA

1950–1962

	Tons Despatched	Tons Received
1950	27,394	9,432
1951	23,776	8,697
1952	21,881	9,605
1953	21,757	10,565
1954	21,388	10,125
1955	26,849	10,873
1956	23,343	8,024
1957	27,791	6,482
1958	19,394	4,658
1959	25,948	3,425
1960	18,987	2,794
1961	16,115	1,986
1962	19,058	1,668

Source of data: E.A.R. & H. files, Kampala

imports, the chief reasons being the inevitable delays on the lake route, reduced costs of road transport and improved services offered by the Kampala wholesalers. Only salt and flour are now regularly imported through Bukakata. It is generally felt that if a lorry has to be sent twenty-four miles from Masaka town to Bukakata, it might as well go the eighty-five miles to Kampala, where goods may be obtained as required without ordering weeks in advance. West Lake Region of Tanganyika, which lies further from any large distribution centre and of which the chief town, Bukoba, is itself a port, is still heavily dependent on the local E.A.R. & H. service: this is no longer true of Masaka, and it is not now possible to refer, as V.C.R. Ford did in 1955, to 'the position of Bukakata as the only outlet for a large and rich hinterland'[5].

Katebo was also not directly affected by the opening of the railway to Kampala, and in 1950 it despatched 7,697 tons and received 129 tons of freight. By 1962, however, these figures had fallen to 1,559 and 71 tons respectively, and for several years the port has remained idle from June to December, since virtually all the traffic handled is cotton lint and seed directed to this route by the Lint Marketing Board. Entebbe Pier continues to handle a little traffic through government policy; that forwarded consists mainly of lint from Setta ginnery and that received of such items as paper for the Government Printer. Its chief value today is for passenger traffic, as even the freight booked to Entebbe is often railed to Kampala and taken on by E.A.R. & H. delivery service.

The country near the lakeshore between the Nile and the Kenya border is almost uninhabited, and ports were established only at each end of this stretch, at Jinja and Mjanji. The latter once served much of Eastern Province, but traffic declined sharply when the railway reached Tororo, and only 29 tons of freight were forwarded in 1929. Later it revived somewhat, and Mjanji temporarily regained importance when it was used to despatch Tororo cement by lighter to Kisumu and Tanganyika. Shipments reached 5,552 tons in 1958, but these markets were then lost, and the cement company indicated that they had little further interest in the port. There were no other traffic prospects, and Mjanji Pier was closed in 1959. Jinja Pier, once the busiest along the Uganda shore, was closed soon after the town was linked by rail to Kenya. Recent expansion of trade with Tanganyika led to demands for its re-opening, for a large proportion of the trade consisted of goods moving to or from the Jinja area. A steamer has therefore called at Jinja since August 1961, and this service has been well patronized.

The Sesse Islands are entirely dependent on communications by water, and almost all the goods moved to or from them are carried by E.A.R. & H. vessels. There are five ports of call, and in 1962 729 tons of cargo were landed and 1,084 tons collected. Among the former, maize meal, sugar and building materials formed the largest items, while the latter consisted chiefly of timber, coffee and fish. The lake services thus play a valuable role in the economy of these islands, enabling them to make a contribution to the commercial production of the country.

The Busoga Railway and the Lake Kyoga Services

The first railway laid within Uganda was that running from Jinja northwards to Namasagali. This 61-mile line, known at first as the Busoga Railway and built at a cost of £180,000 provided by the Uganda Government, gave access to the whole of the Lake Kyoga basin in addition to the area through which it passed. Steamer services had been established on the lake in 1906, and by 1910 nine ports had been opened: but through connection to Lake Victoria by the Nile was prevented by a series of falls and rapids. The railway, which by-passes these, was opened to Kakindu in 1912, and extended a further seven miles to Namasagali in 1914.

For several years little traffic was forthcoming from places along the line, for it was laid through sparsely populated country, much of which was infested with Mbwa fly which prevented even the housing of maintenance gangs along the central section until 1921. Subsequently, the development of road transport enabled produce from a wider area to reach the railway, and in 1926 freight despatched from Mbulamuti amounted to 4,860 tons and that from Luzinga to 2,640 tons. The line was not built primarily to serve Busoga, however; if it had been, it would have passed through the well-settled country further east. It was built mainly as a link between the two lakes, and on this basis it was a great success. In 1913, 9,086 tons were moved to or from Lake Kyoga ports, compared with only 590 tons handled by the lake steamers in 1909. The traffic was such that new steamers were brought into service in both 1912 and 1913, together with three new 100-ton lighters in each of those years. From the start, cotton was much the most important commodity handled, but some hides, simsim and groundnuts were also carried, while 2,932 tons of freight was moved north from Jinja in 1912.

The new transport facilities had a considerable impact on the eastern and central parts of Uganda, despite serious problems in carrying goods to and from the stations and ports. The Busoga Railway was the instrument by which the line from the coast came to serve an area much wider than the margins of Lake Victoria, permitting the early establishment of a tradition of cash production. Soon after the opening of the Uganda Railway the Governor of Uganda reported that 'the development of the cotton industry on a great scale is only checked by the lack of transport facilities from the interior to the lake shore', and that 'the provision of railways or motorable roads would immediately result in an immense increase of the industry'[6]. The Busoga Railway contributed greatly in this respect. Between 1910 and 1915 the estimates of the area under cotton in Buganda remained around 20,000 acres, but that for Busoga rose from 8,000 to 15,000 acres, that for Bukedi from 6,000 to 13,000 acres and that for Teso from 5,000 to 30,000 acres[7]. The ginning industry spread rapidly as the up-country areas became less isolated, and several ginneries were built near Kyoga ports. In 1912 the Busoga Railway handled 4,212 tons of unginned cotton and only 2 tons of lint, while in 1914 the figures were 3,113 tons and 2,101 tons respectively.

Teso was the District best served by the Kyoga steamers, for branches of the lake penetrate deeply into it. Six ginneries were built there in 1913-14, including one at Bugondo Port which was the leading source of traffic for some years, until surpassed by Lalle, also in Teso. Although various other factors also encouraged cotton cultivation in Teso, the acreage estimates given above and seed cotton production figures of 500 tons in 1910/11 and 2,800 tons in 1912/13 suggest the immediate impact of the new transport facilities. The value attached to the steamer service is indicated by the strenuous efforts made to provide a canal link to Lake Salisbury and to develop a port at Agu[8]. The steamers also served Lango District, where the cotton acreage rose from about 1,000 in 1912 to 8,000 in 1915, whereas Acholi, which has similar physical and social conditions, remained isolated at that period, and still had only 500 acres of cotton in 1915 and no ginnery until 1924. Atura Port, which later came to serve the District, lies within Lango, and little use could be made of it until the development of motor transport.

There seems little doubt that the railway contributed to the early growth of Jinja, its importance as a commercial centre originating from a dominant position in the cotton industry, for it lies too near to Kampala to function as a major regional centre. Yet it should be noted that although Namasagali was declared a township in 1914, it has never shown any sign of urban development.

By the time that the Busoga Railway and the Kyoga Marine were linked into a wider system they had contributed greatly to the development of a pattern of economic activity which to a large extent still survives. In 1931 the volume of traffic on the Jinja-Mbulamuti section of the railway became greater than ever, for although most Lake Kyoga traffic had been drawn off by the line to Tororo, this section became part of the main line to Kampala. Local traffic also increased after the development of the Kakira sugar estate. The importance of the lake service for Teso District largely disappeared when the rail extension to Soroti opened in 1929, but around this time its role in serving Bunyoro and West Nile via Masindi Port was increasing. A road service across Bunyoro and a steamer service on Lake Albert had been established earlier by the Uganda Government, and the Railway Administration took over these in 1924, expanding the services considerably. In 1913, Masindi Port despatched 102 tons of freight to Namasagali and received 586 tons from there: in 1928 the figures were 2,130 tons and 8,052 tons respectively. These services provided vital transport facilities for Bunyoro and West Nile, for the Kampala-Masindi and Gulu-Pakwach roads had not then been built, yet the traffic figures indicate a low level of production for export even in 1928. In Bunyoro the main reason is the very sparse population, while West Nile still suffered from its relative isolation even though the facilities for exporting goods had been provided.

After thirty years during which almost all traffic moving by rail in Uganda passed over some section of the Busoga Railway, its function as a through

route has ended. In 1961 all traffic passing between Jinja and Tororo was diverted to a new cut-off, while the northern extension has taken the traffic from the Kyoga services and the Namasagali-Mbulamuti section, both of which have been closed down. It is even uncertain whether local traffic will justify the retention of the longer section between Mbulamuti and Kakira. The decision to re-align the main route from Kenya to Kampala was influenced by the fact that the track of the Busoga Railway is almost worn out. The same applied to most of the Kyoga fleet, which would soon have had to be replaced. They have been worn out by fifty years of service to Uganda, during which they have had a large influence on the economic development of the country.

Tororo—Mbulamuti

By the 1920s the Kisumu route was suffering from severe congestion, and in 1924 it was decided that the railway then being built from Nakuru on the Kisumu-Mombasa line across the Uasin Gishu Plateau of Kenya should be extended into Uganda. Construction therefore advanced across the border to Tororo, and from there continued to Mbulamuti, and the whole section was opened in January 1928. It provided a through route to and from the coast for the whole area served by the Busoga Railway and the Lake Kyoga steamers. It would have served Jinja better if it had joined the Busoga Railway there, but Kyoga traffic would then have had a more circuitous journey. Kampala traffic was expected to continue to move via Port Bell and Kisumu for some years, while an extension to Kampala could later be built from Mbulamuti[9]. In fact the alignment quickly became a major disadvantage; for an extension to Kampala was built from Jinja three years later, by which time a branch to Soroti had drawn off some of the Kyoga traffic.

The most immediate impact of the line was felt by the Lake Victoria ports, as mentioned above. Traffic between Kisumu and Jinja Pier fell between 1926 and 1928 from 58,922 tons to 3,722 tons, and movements to and from Mjanji dropped from 12,528 tons to 282 tons. The chief role of the line was to carry through traffic between Kenya and Namasagali or Jinja. A much quicker transit was provided for Kyoga traffic, although only Bunyoro and the north were affected for long as the Soroti branch soon offered an even quicker route for Teso. There were no startling consequences for these areas, but the railway has certainly been of value for the economic development which has subsequently taken place over a large part of Uganda. The Kisumu route was slow and inconvenient, and because of physical conditions at that port, especially the shallow approaches to it, its capacity could have been expanded to meet later requirements only with great difficulty.

Some local traffic was immediately forthcoming, and in the first year 6,591 tons of freight were despatched from Tororo and 4,718 tons from Nsinze. The line seems to have had a considerable effect on the surrounding area, for local traffic increased rapidly despite the Depression (Table 4).

TABLE 4

FREIGHT TRAFFIC: TORORO—MBULAMUTI LINE

	Tons of Freight Forwarded				Received
	1928	1932	1938	1960	1960
Tororo	6,591	896	4,177	76,858	20,862
Nagongera	1,115	1,414	3,623	3,069	554
Budumba	25	41	27	29	11
Nsinze	4,178	9,747	9,504	19,337	7,018
Kaliro	2,286	3,202	5,914	3,148	1,597
Namwendwa	455	3,900	5,918	2,606	234
Namaganda	1,299	2,824	4,548	1,692	308
Kamuli	929	2,561	7,571	4,813	2,031

Source of data: E.A.R. & H. Annual Reports and files.

The volume of freight handled at Tororo dropped sharply when it ceased to function as the station for Mbale, but it built up again between 1932 and 1938. This area benefited greatly by the avoidance of the road haul from Tororo to Mjanji which cost about 70/- a ton, and of the delays on that route. The cotton acreage in Budama (now part of Bukedi) rose from 22,000 in 1927 to 64,000 in 1932, and in Busoga it rose from 78,000 to 221,000 during this period[10]. As shown earlier, lint transport costs affected the growers' return at that time, while the railway also increased the value of cotton by assisting in the disposal of seed.

Cotton continues to be chief commodity handled, and in 1960 Nsinze* despatched 7,146 tons, Kamuli 2,242 tons and Kaliro 2,232 tons. Little seed is now carried from these stations, however, and this has led to the decrease in traffic shown in Table 4. Apart from cement, Aden salt and Kenya flour, little freight is received at the local stations, for most supplies are distributed by road from the larger towns.

Much the most important station on this section today is Tororo. This is the one case where inter-war railway building undoubtedly had a major local impact, for Tororo alone among the towns of Uganda owes its origin to the railway. In 1926 it hardly formed a minor trading centre, but the following year fifty-four leases for commercial plots were taken out[11]. Its brief period as the railhead for Mbale was probably of greater significance than its subsequent position as a junction. More recently the railway has assisted the development of the cement, asbestos and fertilizer industries in the vicinity, and of a substantial trade in imported goods in the town itself, while it provides employment for a substantial number of the town's population. By contrast, there is no apparent relationship between the railway and the location of the other towns of the area, and it is very clear that the line in general failed to draw trading settlements to it.

*Nsinze has now been replaced by Busembatia station. This change and the future of the line are discussed in Chapter 5.

Tororo—Soroti

The railway from Tororo to Soroti was an extension into an area formerly not served by public transport facilities, rather than a link in the chain which formed the main line, and therefore among the pre-war lines it is the most comparable to the more recent extensions. The line was opened to Mbale, thirty-five miles from Tororo, in December 1928, and a further sixty-five miles to Soroti in November 1929. Mbale was already a town of some importance, while Soroti was the administrative and commercial centre of Teso District. The railway passed close to Mbale, but terminated five miles

TABLE 5

FREIGHT TRAFFIC: TORORO—SOROTI LINE

	Tons Forwarded			
	1930	1938	1954	1963
Magodes	1,499	3,480	7,309	4,472
Mbale	3,981	13,983	22,368	26,901
Kachumbala	77	8,923	3,090	2,674
Kumi	1,240	3,728	2,154	2,110
Okungulo	0	3,979	2,543	2,986
Soroti	2,781	12,273	7,693	6,957

	Tons Received		
	1938	1954	1963
Magodes	484	1,868	144
Mbale	9,931	44,953	44,595
Kachumbala	312	360	58
Kumi	614	1,744	909
Okungulo	318	858	211
Soroti	4,570	23,565	20,365

Source of data: E.A.R. & H. Annual Reports for 1930 and 1938, and E.A.R. & H. files, Kampala

east of Soroti since its alignment was determined by the intention to continue it further northwards. However, from 1930 onwards funds were very scarce, and the potential traffic was not considered adequate to justify construction beyond Soroti.

Table 5 indicates the great expansion of traffic which took place during the first eight years, and this may be contrasted with the rate of expansion over a similar period on the recent western extension. The freight despatched consisted mainly of cotton lint and seed, and the diversion of seed to local oil mills brought a decrease in traffic at some stations after the Second World War. But at Mbale the volume of goods forwarded increased with the expansion of the Bugisu coffee industry; and at Magodes phosphate shipments enlarged the figure. The volume of freight received expanded equally rapidly in the early years, and this growth has continued

in the post-war period as rising prices for cash crops allowed increased imports. Recently, however, the volume of imports has levelled off, and in common with other areas there has been a marked concentration into the larger stations.

Since the reported cotton acreage in Bukedi and Bugisu rose from 129,000 in 1928 to 237,000 in 1932[12], the railway seems to have encouraged cultivation, although considerable expansion could no doubt have taken place on the basis of a road haul to Tororo. In Teso there was no such apparent response, for the cotton acreage in 1931 and in 1934 was less than that in 1928. Prevalence of Blackarm disease and a severe plague of locusts contributed to this situation, while cultivation had already been so much assisted by the Kyoga steamer services that the main effect of the railway was a re-routing of exports rather than any stimulation of production. The clearest immediate effect of the line was the assistance given to cotton seed exports, for little had been moved out of these Districts in the 1920s, but this development was relatively short-lived. The present distribution of cotton ginneries shows no relation to the line, for ginnery capacity had far outrun production by 1929, and no expansion of the industry followed the opening of the railway.

The timing of the development of the Bugisu coffee industry suggests that the railway may have been a factor of some importance, for production rose from 250 tons in 1929/30 to 2,000 tons in 1934/5 and then remained relatively constant until 1950. Mbale forms the obvious centre for the trade, and the whole crop has been railed from there since 1932. When a curing works was built at Mbale in 1959, a site beside the railway was chosen, and the coffee is now loaded direct from the factory. Rail facilities at Tororo, together with the expansion of motor transport, would perhaps have been sufficient to encourage coffee production in Bugisu, but the Soroti line seems to have played some part in the expansion of both coffee and cotton production in eastern Uganda, and it is still of great alue for the movement of both crops.

The importance of the Soroti line in the cattle trade was indicated in Chapter 2. Teso cattle had already been exported through the Kyoga ports of Kelle and Lalle before 1930, but increased sales followed the opening of the branch. Railway revenue from stock forwarded from Soroti rose from £83 in 1932 to £3,211 in 1934, while shipments from lake ports were still rising. Today over half the cattle moved by E.A.R. & H. within Uganda pass through Soroti, while Kumi station is also of importance. The trade is of great significance in the Teso economy and is also vital to Karamoja, and it is unlikely that it would have developed to the same extent if the railway had not provided a link with markets in Buganda and Busoga.

The volume of freight received now exceeds that shipped out, even though it is largely confined to Mbale and Soroti stations. Mbale is the third largest town in Uganda, and is a distribution centre for a large part of the east and north. It was found in 1954 that 23% of the imports of Acholi were supplied from Mbale[13], and the figure is certainly higher today. In

its development as a major centre of wholesale trade, as a distribution point for oil products, and as a town with some light industry, it has been very dependent on the railway, and if this had not been built Mbale would have been less important (Tororo perhaps more important) today.

For some imported goods Soroti acts as the railhead or the distribution centre for the north as well as for Teso. In 1930 it was already larger than such towns as Lira and Gulu, and the railway has helped it to maintain this position. The location of the station five miles from the town has been a disadvantage, and goods ordered direct from Mombasa or from the factory by northern traders are generally collected from the station, thereby having no effect on the town: but the lorries frequently call in the town to make up a full load. The railway was not a sufficiently powerful force to induce the traders to move to the station site, as was hoped, and the only commercial development within sight of the station is one oil depot, but the line has certainly been of much value to Soroti over the past thirty years.

The railway brought no revolutionary changes to the surrounding area, and it is notable that between Kumi and Soroti settlements are related much more closely to the main road than to the railway. J. C. D. Lawrance discusses the effect of the Kyoga steamers in opening up Teso District, but hardly mentions the Soroti branch line[14]. Yet considering that the branch was opened shortly before the Depression, the evidence suggests that it contributed to the economic development of eastern Uganda. The traffic figures show that it is playing an important part in the local economy today, and the northward extension has further increased its importance.

Jinja—Kampala

In 1930 Buganda, the richest part of Uganda, and Kampala, the largest town, still had no direct rail connection to the coast, but in January 1931 a bridge across the Nile at Jinja was opened, so completing the railway built from there to Kampala. It had earlier been proposed that the line from Tororo to Mbulamuti should be continued direct to Kampala[15], but the traders of Jinja protested that this would make their town a backwater, and their views prevailed.

Whereas in Kenya the railway played a major part in the development of Nairobi, in Uganda it was the position of Kampala as the largest urban centre which brought the railway to it. The town was established at the focal point of indigenous Ganda political life, and by 1931 it had a population of about 8,000 while it had already to a large extent taken its present shape. Although it had been said that development was being held up by the inadequacy of Port Bell, there is no evidence of the railway's having any immediate effects. The volume of both goods received and goods despatched at Kampala and Port Bell was lower in 1934 than in 1930, and it was only a little higher in 1938. The General Manager had said in 1927: 'I believe that the line will attract fresh capital to Uganda; will produce additional traffic: ... and will stimulate general development in the whole of Uganda itself'[16]. In fact the period after 1930 was not

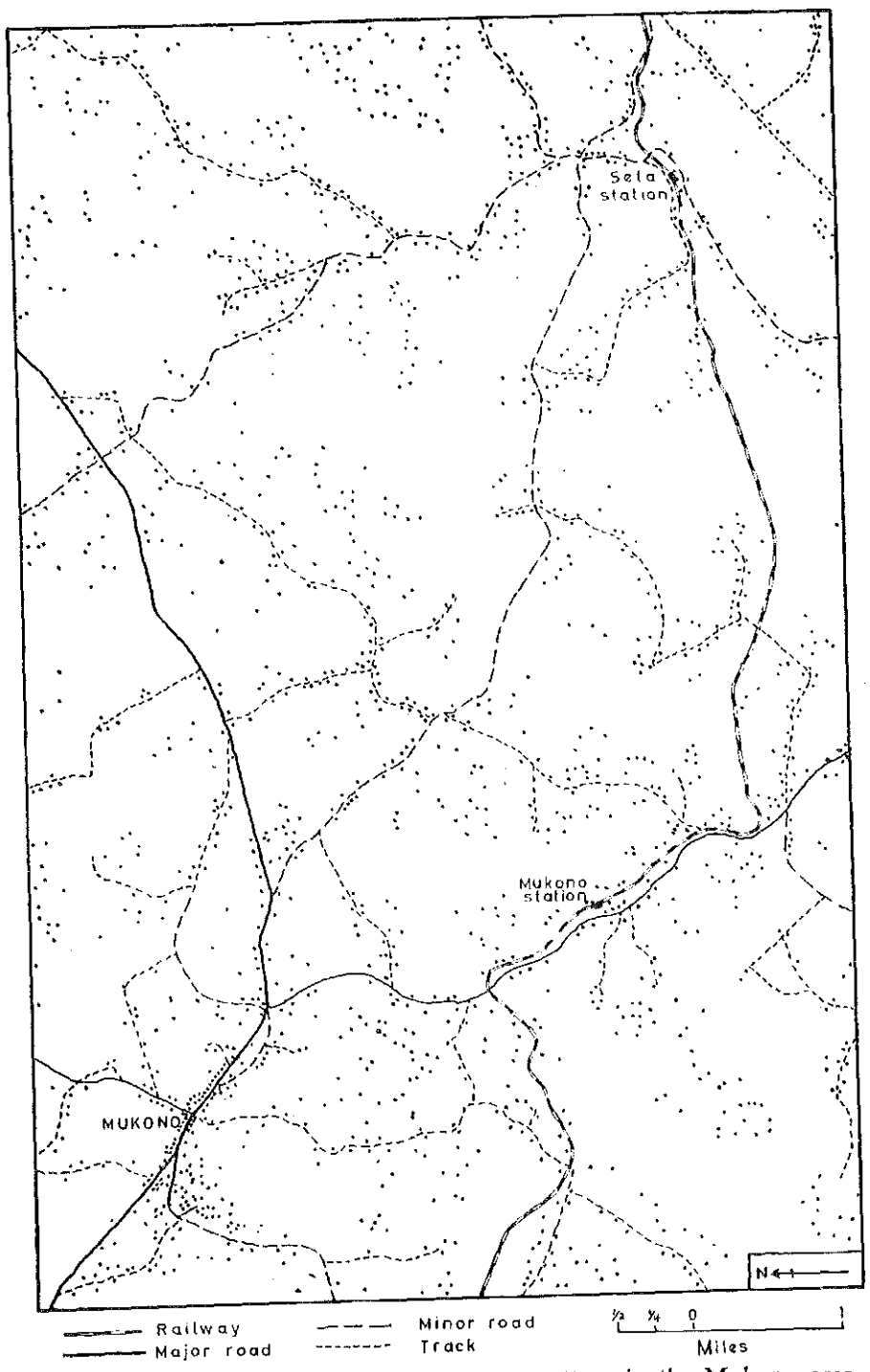
one of rapid economic growth even in Kampala and the surrounding area of Buganda. The Depression was a major factor in this situation, and the railway might have had a greater impact if it had been built five years earlier. The chief value of the line has rested in enabling subsequent economic development to take place without creating serious transport problems. In 1962 Kampala station forwarded 169,755 tons of freight and received 290,647 tons; and the railway undoubtedly assists the town in its functions as the main commercial centre for Buganda and Western Region, and as a light industrial centre.

Only four intermediate stations have ever handled much freight traffic. At Kawolo 7,765 tons were despatched in 1932, and the figure has risen somewhat erratically to 28,822 in 1962. In each year much the most important item was sugar from the neighbouring Lugazi estate; yet the rather limited significance of the railway for the estate has been pointed out in Chapter 2. Cotton, coffee and tea are also forwarded from Kawolo and from other stations on the line, but the distribution of production of these crops shows no sign of concentration near the railway. The railway may have contributed to the expansion of the cotton acreage in Mengo from 141,000 in 1930 to 315,000 in 1932 and 794,000 in 1937, but it is not clear how it could have been directly responsible. While the railway was vitally important for moving the larger crop, it did not reduce the cost of transport from most places since the charge was the same as via Kisumu, and the expansion of cultivation may be more closely related to improvements in road transport during that period.

Map 4 indicates the very small effects of the railway on the pattern of settlement in the surrounding area. It assisted the growth of trading centres near Kawolo and Mukono stations, yet few traders make use of either station today, most preferring to send a lorry to Kampala to obtain goods in small quantities as they are needed rather than to order direct from Mombasa. At Mukono most of the fourteen stores established near the station have now been abandoned in favour of new ones sited on the main road, three miles away. At other stations, such as Seta and Namanve, there is virtually no freight traffic: the effects of the railway are confined to the opportunities for passenger movement, and in this respect buses are now highly competitive.

Summary

The development of the rail network serving Uganda took place in several stages during the period from 1896 to 1931. In general, the various lines appear to have been of progressively decreasing importance in terms of their impact on the country. The railway from Mombasa to Kisumu undoubtedly had a profound impact on the economic life of Uganda, apart from playing a vital part in its establishment as a political unit. Its direct and indirect effects merit detailed study by an economic historian; the results of such study would be extremely relevant to an understanding of the present economic geography of Uganda. The Busoga Railway and the Kyoga steamer services brought no revolutionary change to the



Map 4. The railway and the settlement pattern in the Mukono area, east of Kampala. (Based largely on Uganda Survey Department 1:50,000 map, sheets 71/I & 71/II.)

country, but they contributed greatly to the spread of the cash economy through the east and into the north. The later lines had very much less effect on economic development, for although they immediately handled a large volume of traffic, much of this was merely diverted from the lake services. The arrival of the railway at Tororo and Soroti had some important local consequences, however, and the section which appears to have had the least effect was the final one to Kampala.

One reason for the decreasing impact of railway building was certainly the development of an alternative form of transport. A relatively good road network was established, and with the widespread introduction of motor vehicles in the 1920s economic development could proceed in advance of rail construction. The lines built between 1928 and 1931 served areas that had already been 'opened-up' by the lake services and road transport feeding these. In addition these lines were unfortunately timed in that they came into service just before the Depression. All have been of great value for the economic development which has taken place more recently, although in terms of the present economic geography these railways only confirmed and strengthened the pattern encouraged by the railway building earlier in the century.

It has recently been stated that 'the transport conditions of the past are of great importance in understanding the present location of many major industrial areas'[17], and the same applies to all commercial activities in Uganda. As shown in the previous chapter, the railway network no longer operates directly as a factor greatly influencing the distribution of most activities, and its greatest significance for the economic geography of the country lies in the lead given fifty years ago to Buganda and the east. These areas have taken advantage of this lead, and have forged ever further ahead of the rest of Uganda, despite subsequent improvements in the accessibility of other areas[18]. The concentration of development in Buganda and the Eastern Region is such that not only this chapter, but also the previous one have been concerned mainly with these areas. The following chapters will perhaps redress the balance, for they provide more detailed studies of the more recent railway extensions to the west and north.

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THE WESTERN EXTENSION RAILWAY

Background

IN 1951 work began on the first new railway construction in Uganda for twenty years, and in 1956 the final section of the 208-mile extension from Kampala to Kasese was opened. From the earliest years of the century attention had frequently been given to the possibility of building a railway from Kampala westwards towards the Congo border. Around 1906 the Governor, Sir Hesketh Bell, and the Under-Secretary of State for the Colonies, Winston Churchill, both supported a proposal for a line linking Lake Victoria and Lake Albert, and a preliminary survey was made in 1909. Capital was not then available, but five years later £183,150 was set aside under the Imperial Loans Ordinance for the Kampala–Mityana section of a railway to the west, although the First World War prevented any action being taken to put this into effect. The Uganda Development Commission considered a line to the Congo in 1920, and declared: 'We are emphatically of the opinion that provision should be made at once to complete the whole length and that construction should commence without delay'[1]. Soon afterwards, however, interest was diverted to the task of extending the rail network in Kenya and in eastern Uganda.

Until 1930 it was generally supposed that a railway to the west would depend at first on Congo traffic for most of its revenue, even though it should also stimulate development in the surrounding area; but by then internal communications in the Congo had improved, and the prospects of substantial transit traffic had diminished. An economic survey of the area between Kampala and Mubende was therefore made, and this suggested that local traffic potential would justify a line between these two points[2]. Nevertheless disagreement arose from various quarters, and after disputes over methods of accounting and the source of finance, the project was shelved once more. The possibility of a western extension was considered again in the 1947 Development Plan prepared by E.B. Worthington, but he considered that the investment 'would be difficult to justify unless there is a certainty of traffic on a large scale'[3], and that no immediate action

was called for. A prospect of such assured traffic was on the horizon, however, in the form of copper from Kilembe, and further attention was soon given to the problems of communications in the west.

In view of the high cost of railway construction, some attention was given to an alternative project involving the canalization of the River Katonga for 125 miles from above the western rift valley to Lake Victoria. After a detailed survey in 1948-9 a comprehensive scheme was prepared, the estimated cost being £2½ million[4]. The proposed canal could have handled vessels drawing 6 feet, each carrying over 400 tons of cargo and able to operate on Lake Victoria, thus giving a through transit to Jinja or Kisumu. A 40-mile road across the difficult terrain of the rift valley and escarpment was to link the western terminal with Kilembe, while facilities for handling local freight would have been provided at each lock, for the canal was intended to be a major transport artery of western Uganda in addition to serving Kilembe mine. The survey report opened with a quotation from Cobden: 'The opening up of the communications of a country is undoubtedly the first and most important element in its growth in commerce and civilization—hence our canals were regarded as the primary material agent in the wealth of Great Britain'. Today, however, waterways are generally considered far too slow and inconvenient in Uganda as in Britain. The canal might have provided an adequate outlet for Kilembe, but the Uganda Government recognized its limited value for other traffic, and the project was abandoned in favour of a railway extension.

Official sanction for building the railway to Mityana was given in 1951, and for the continuation to Kasese in 1952. The decision rested upon a guaranteed source of traffic at Kilembe, and was prompted by the fact that mining development was dependent on some positive step to improve communications. There seemed little doubt that the line would attract some Congo traffic, which would provide new revenue for E.A.R. & H., while the Uganda Government was much encouraged by the very favourable report of an Economic Survey Committee. The concluding sentence of the report reflects the tone of the whole: 'The committee desires to record its firm conviction that this project will prove eminently successful, and contribute materially to the welfare and prosperity of the people of Uganda'[5]. The capital cost of the extension was £5¼ million, and the Uganda Government provided the Railway Administration with a loan to cover this. The government also guaranteed to meet any operating losses incurred on the line, although the chances of such losses were reduced by the policy of crediting to the line any profits on traffic also passing over the Kampala–Mombasa section.

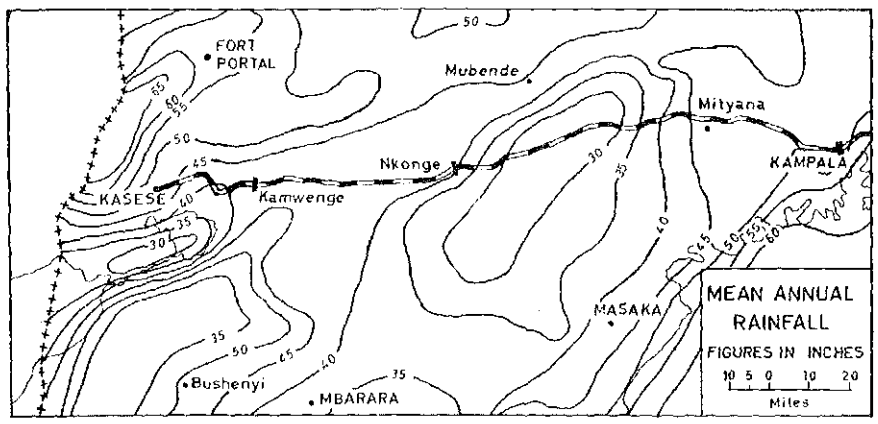
Route

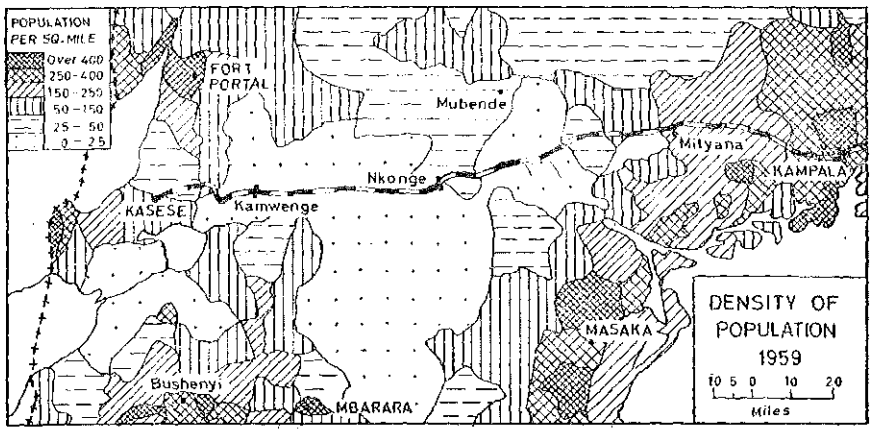
Considerable discussion took place about the choice of route for the line. The Kampala–Mityana section, which had been surveyed many years earlier, presented no problems, but further west the railway could either follow the Katonga valley or pass further north through Mubende. The exact terminus was also a matter of debate, although the line obviously

had to pass as close as possible to Kilembe. The 1930 survey committee had recommended a route via Mubende in order to serve that District most effectively, but in the 1951 report this was rejected as being unduly costly, and approval was given to the Katonga route. This provided the most direct link between Kampala and Kilembe, and was expected to provide a service for Ankole as well as Mubende. After reaching Mityana in 1953, the line was therefore extended to Musozi in 1954 and Nkonge in 1955. Four possible termini were considered, out of which Kasese, that involving least expenditure, was finally chosen. The rejected proposals were for extensions beyond Kasese 8 miles to the western arm of Lake George, 22 miles to the Kazinga Channel or 31 miles to Lake Katwe. The country offers few problems for construction, yet the cost of each proposal (£0.1, 0.4, and 0.55 million respectively) was considered too high in relation to the probable benefits. The Congo authorities agreed that for transit traffic a road haul to Kasese would be as satisfactory as one to Lake Katwe, and preferable to lake transport, which had been considered in relation to the other possible termini.

For the first fifty miles from Kampala the line passes through country with very fertile soils and a rainfall of 40 to 50 inches evenly spread through the year (Map 5). The land was originally under forest, but although patches of this survive, most is now used for the perennial crops, bananas and coffee, or for a rotation of annual crops and short fallow periods. A population of 200 to 250 per square mile is supported almost entirely by agriculture. Conditions become progressively less suitable for cultivation as the Lake Victoria zone is left behind. Around the central section of the line the rainfall is less reliable, only occasionally exceeding 30 inches in a year, while the soils are among the least fertile in Uganda. Over large areas the density of population is below 25 per square mile, and most of the country is occupied by the natural savanna woodland vegetation and by numerous buffalo, antelope and other types of game. Much land is suitable only for extensive grazing, and west of Nkonge even this form of land use is prevented by tsetse-fly infestation. The railway runs beside the swamp-filled channel of the Katonga, although its valley makes only a very slight impression in the level plateau surface. Further west, towards Kamwenge, the country becomes more hilly, the rainfall rises to 50 inches and the soils are of rather greater fertility. The land is of higher potential productivity than that further east, and around Ibanda, twenty miles to the south, there is some relatively dense agricultural settlement: but the land near the railway is as yet almost entirely undeveloped, and very sparsely populated, as shown on Map 6.

The construction costs of the whole line were very greatly affected by the difficult nature of the country in the final forty miles before Kasese. Severe problems were presented by the descent of the escarpment, which involves a spiral at one point, while from the foot there is an 18-mile crossing of papyrus swamp through which a causeway had to be built, entailing a vast amount of labour[6]. The terminus lies on the valley floor, immediately beneath the Ruwenzori foothills in which Kilembe mine is situated, in





Maps 5 and 6. The Western Uganda Railway and the Surrounding Area. (The data are taken from 'Atlas of Uganda', pp.15 & 35, by permission of the Commissioner of Lands and Surveys.)

an area characterized by a wide variety of physical conditions and of human response. Much of the immediate neighbourhood is occupied by a Game Park, but cotton is grown elsewhere on the valley floor, while tea and coffee are grown in other parts of Toro. Lakes George and Edward support a flourishing fishing industry, and salt is obtained from Lake Katwe. The District headquarters is Fort Portal, forty-five miles north of Kasese, and this is similar to most District centres, with ninety-four shops in 1961, almost all Asian-owned general stores, but with virtually no industry. Until 1963 an agent provided a cartage service between Kasese and Fort Portal, and through booking of freight was possible. The Congo border lies forty miles from the railhead, by a good road passing round the southern end of the Ruwenzori[7].

During most of the time that the line has been in operation there has been one train each night in each direction, hauling both passenger coaches and

freight waggons. At first a further passenger service operated between Mityana and Kampala, but this was soon discontinued. Provision is made for a second goods train each day, and this has occasionally been run over the Musozi—Kampala section during the cotton and coffee season.

TABLE 6

WESTERN UGANDA EXTENSION

Traffic handled at each station, 1962

Miles from Kampala		Goods (tons) out	Goods (tons) in	Livestock Units* out	Livestock Units* in	Passengers out
18	Bujuko	3,609	123	—	30	1,140
34	Kawalongojo ..	2,175	78	29	—	1,470
46	Mityana	10,584	1,601	14	274	6,881
57	Myanzi ..	332	95	—	—	3,206
82	Musozi	1,756	563	14	10	4,691
102	Kasambia ..	3	62	—	—	1,153
117	Nkonge	4	14	126	79	4,406
137	Kabagole ..	6	29	—	—	2,139
156	Bihanga	13	22	—	62	2,335
172	Kamwenge ..	103	528	—	72	7,217
190	Dura River ..	237	23	—	—	2,605
208	Kasese	86,292	31,773	—	166	24,840
—	Fort Portal ..	662	1,452	—	—	—

*1 unit=one cow, or six sheep or goats.

Source of data: E.A.R. & H. files, Kampala.

The Level of Traffic, 1953–1963

On the Western Uganda Extension, as on most E.A.R. & H. services, freight traffic contributes a far greater share of the total revenue than passenger traffic. In 1962 the line carried 105,700 tons of freight eastwards and 33,100 tons westwards, almost all of which passed onto or off the main line at Kampala. Table 6 indicates that over 80% of the traffic was moving to or from Kasese, while most of the remainder was handled at the stations nearest to Kampala.

At Bujoko, Kawolongojo and Mityana traffic built up quickly, although the volume has since levelled off or even declined (Table 7). Coffee has been the chief commodity handled. Mpigi curing works has provided most of the freight despatched at Bujuko, while the sharp fall in traffic at Kawolongojo in 1960 resulted from a change in routing by two of the three local works. At Mityana coffee represented 70% of the goods forwarded in 1962. As noted in Chapter 2, however, the Coffee Marketing Board declared in April 1963, that all coffee had to be graded in Kampala, and as a result no coffee has been handled at these stations since then. The coffee crop has expanded in recent years at the expense of cotton cultivation,

and the quantities of lint and seed handled have been much smaller. The only other commodities despatched regularly are tea from the estates near Mityana, very small quantities of trade goods sent westwards from there, and about five tons a year of fruit and of charcoal from Kawolongojo.

As at all except the largest stations in Uganda, the volume of goods received is much smaller than that of goods forwarded, and at Bujuko and Kawolongojo this traffic is confined almost entirely to stores for the cotton and coffee works. Mityana handles a few imported consumer goods, but in 1960 these comprised only 40 tons of salt and smaller amounts of china, hardware and bicycles. The freight received there consisted mainly of cotton seed for planting (404 tons), fertilizers for the tea estates (360 tons), gunny bags (120 tons) and shooks (80 tons) for packing the export crops, and Tororo cement (90 tons).

TABLE 7

WESTERN UGANDA EXTENSION

Kampala-Mityana section: traffic handled
1954–1962

	Goods						Passengers
	Bujuko		Kawolongojo		Mityana		3 stations
	out	in	out	in	out	in	out
1954	343	28	3,647	135	9,875	2,446	24,373
1955	747	13	2,214	61	4,072	2,567	35,864
1956	3,962	391	2,337	303	10,727	1,290	27,716
1957	4,814	30	2,571	89	7,944	1,450	12,609
1958	4,701	300	3,425	238	10,563	2,653	11,788
1959	4,395	297	4,181	124	9,176	1,173	11,334
1960	4,796	381	1,220	55	11,302	1,465	11,999
1961	2,571	450	1,058	45	9,272	1,354	10,409
1962	3,609	123	2,175	78	10,584	1,601	9,491
1961 figures include:—							
	2,061		820		5,581		Coffee
	300		234		1,252		Cotton Lint
	102		0		858		Cotton Seed
	0		0		901		Tea

Source of data: E.A.R. & H. files, Kampala and Nairobi.

Passenger bookings were fairly heavy at first, but when the local service was withdrawn bookings were halved at all three stations, for the Kasese trains pass through at inconvenient hours. Most people travelling to Kampala do so by bus or taxi, and the train passengers are mainly people from further west working temporarily on local farms, or visiting the hospital or shops in Mityana. About four miles west of Kampala a passenger halt at Nalukulongo is used by some people living or working on the western outskirts of the town.

Myanzi station is in an area of sparser population, but it handles all the cotton lint and some of the seed from Kasanda ginnery, to the north. Freight despatched fell from 869 tons in 1957 to 374 tons in 1959, however, and has since increased only slightly. More seed is now moved by road, while many farmers have switched from cotton to coffee, which must go to Mityana for curing before it is railed to Mombasa. Goods received consist of cotton seed for planting, ginnery stores, and tiny quantities of flour from Mityana and fish from Kasese.

Musozi station serves Mubende District, in which there are four cotton ginneries which provide most of the outward traffic of 2,000 to 3,000 tons a year. A small coffee works accounts for the remainder. Goods received consist mainly of cotton seed and ginnery and government stores, for the Mubende traders obtain almost all their supplies by road from Kampala. The area south of the railway provides no freight traffic, although passengers come from both north and south.

Table 6 shows that the stations along the central section of the line handle very little freight. Nkonge lies in empty country, but was expected to handle much goods traffic when it was linked by a new road to the populous areas to the south-west. This road has not been built, and the impressive crane installed there has never been used except for railway materials. The station quickly achieved some importance in the cattle trade, and forwarded 2,101 head from a wide area in 1957, when many Baganda came from around Kampala to the local market; but a spread of tsetse-fly caused the market to be closed in 1959. The opening of a new one in 1961 has now brought a slight revival. Nkonge caters for some passengers going to Kampala or Kilembe, but its chief importance is as a locomotive refuelling point.

At Kasambia, Kabagole and Bihanga freight traffic is confined to a few tons of maize flour, sugar and kerosene sent from Mityana. A similar quantity of supplies probably travels as passenger baggage. About 2,000 passengers travel from each station annually, some seeking work in and around Kampala, and others, especially Bahima who have moved with their herds, going shorter distances to visit relatives. From none of these places did anyone travel to stations beyond Kampala in 1961.

Kamwenge, like Nkonge, might have had substantial freight traffic if better feeder roads had been built. Until 1959 Kitaka lead mine provided a little traffic, but this has now closed down. The main commodity despatched in 1961 was coffee, of which 100 tons from Ibanda were railed due to the breakdown of the lorry which normally takes it to Kampala or Masaka for curing. In recent years about 250 tons of building materials and other supplies for a prison and a dispensary in the neighbourhood have been received, while in 1961 and 1962 large quantities of lime arrived from Dura for road construction around Mbarara. About 7,000 passengers use the station each year, for it lies quite close to the well-populated areas of western Ankole and bus services provide effective feeders. Most are travelling to Buganda for work, but others go to Kasese, and a few of these take bananas, groundnuts and onions to sell there.

Dura River station forwarded 6,064 tons of freight in 1957 and 10,377 tons in 1958; but this consisted almost entirely of limestone for the Tororo cement works, and when Dura stone was no longer required there and the quarry had to close, traffic fell to a mere 50 tons in 1959. Working resumed for a short period in 1961, when almost 1,000 tons were railed to Kamwenge. Little freight has ever been received, for the very sparse population lives mainly on a subsistence basis, and there are virtually no local traders.

Kasese is the only station where there is a continual flow of goods in and out in substantial quantities throughout the year. In 1962 almost five times more freight was despatched than from all other stations together, and ten times more was received. Kilembe mine accounts for the greater part of the tonnage in each direction. The output of copper concentrates has risen steadily, and the volume railed to Jinja has risen from 34,254 tons in 1957 to 68,248 tons in 1962, while Kilembe also provides other outwards traffic such as machinery and scrap metal.

Unlike other stations on the line, Kasese is linked to the areas to the north and south by an excellent tarmac road, which has given it the opportunity to serve the whole of Toro District. The single cotton ginnery in Toro, located at Kasese itself, despatched 1,300 tons of lint and 2,500 tons of seed by rail in 1963. The tea estates further north produce over 1,500 tons of tea annually: the two largest rail about 1,000 tons a year from Kasese, although some smaller concerns prefer a road haul to Kampala. Until 1961 any coffee grown in western Uganda was sent by road to Masaka or Kampala for curing, but curing works have now been opened at Bundibugyo in Toro and Bushenyi in Ankole, and the Coffee Marketing Board requires both to use the Kasese railhead. The other commodities exported from Toro are timber and fish, but none of the former and very little of the latter are railed.

The 33,225 tons of freight received at Kasese in 1962 included about 10,000 tons of bulk oil supplies, much for distribution in Congo, and 5,254 tons of Congo transit traffic. Of the remainder about 70% consists of supplies for Kilembe, including machinery, chemicals, explosives, cement, timber, sugar, salt and maize flour. About 1,500 tons of goods were taken by the cartage agent to Fort Portal, although the traders there order regularly via Kasese only salt, flour and cement, and government stores account for much of the traffic. The chief remaining item is fertilizer for the tea estates.

The Congo transit traffic is discussed later in this chapter, and is recorded in detail in Table 10. Kasese has long been connected by road with the Beni area, but a large volume of traffic in both directions has developed only since 1958, when a new road to Goma was opened. The political upheavals of 1960 cut the trade in certain commodities and increased that in others, so that the effect on the total traffic was surprisingly small. Apart from palm oil, moved mainly to Nairobi, almost all the goods are carried over the whole 1,032 miles to or from Mombasa.

The 1961 figure of 148,705 tons of freight carried on the extension, and the 1962 figure of 138,817 tons, compare with the estimate of 294,970 tons

made by the Economic Survey Committee for 1950 if the mine had then been in existence, and a tentative forecast of 527,000 tons for 1960. The discrepancy between the actual figure and the former estimate should receive some attention, especially since the committee maintained that 'every tonnage figure on which the financial assessments of this report are based, is, with the sole exception of Kilembe mine, an actual and not an estimated figure'[8]. The figures are broken down by stations in Table 8. Much of the discrepancy is due to the degree of concentration of ore now undertaken at Kilembe, and to the stockpiling of the cobalt concentrates. But in addition the traffic anticipated for the central section of the line has

TABLE 8

WESTERN UGANDA EXTENSION
ANTICIPATED AND ACTUAL FREIGHT TRAFFIC

	Freight despatched		Freight Received	
	Anticipated for first year of operation	Average for 1960–62	Anticipated	1960–62
Bujuko Kawolongojo	17,818	5,143	4,120	377
Mityana	6,139	10,386	2,311	1,473
Myanzi	2,663	447	1,160	96
Musozi	9,147	2,117	3,412	504
Kasambia Nkonge Kabagole	9,168	19	9,917	105
Bihanga Kamwenge Dura River	2,145	147*	6,507	319*
Kasese	198,438	91,458	22,015	33,688

*Excluding local haulage of limestone between Dura River and Kamwenge.

Sources of data: Uganda Protectorate, *The Way to the West*, Appendices 6 and 8; and E.A.R. & H., Kampala.

failed to materialize, for reasons discussed later. The traffic estimate was based on actual movements by road, but it also presupposed that all would be diverted to the railway, and this has proved unjustified. The estimates for the stations nearest to Kampala included the whole cotton lint and seed production of the area: in fact, little seed has been handled, while production of both has fallen somewhat. The figures calculated for 1950 have been much exceeded only in the case of coffee shipments from Mityana, and Congo transit traffic. The forecast for 1960, based on an annual rate of growth of about 10% in most sectors of the economy, is so far removed from the actual situation that meaningful comparisons can

hardly be made. They would certainly have to await discussion of the impact of the railway on the surrounding country, and of the role it is playing as a transport artery for western Uganda.

The Impact of the Railway on the Surrounding Area

MENGO DISTRICT

In the fertile, well populated and relatively prosperous area of western Mengo through which the railway passes, there is little evidence to suggest that its construction has had any significant effect on the pattern of economic activities. No visible differences have arisen between the country around the line and that to the north and south. Cotton and coffee are much the most important sources of cash income for most of the population, and as shown in Chapter 2, these crops are so managed by the marketing boards that improved transport facilities for lint and seed or for clean coffee can have little effect on the local growers. Even from a plot a few yards from a station the crop must first go to a ginnery or curing works, and is bought at the year's fixed price, while its transport from there onwards is of no concern to the farmer. The railway has in no way increased the attractions of growing cotton around Bujuko or Mityana compared with the years before 1953, or compared with areas north of Kampala. Cotton production has in fact decreased considerably since 1953, for the farmers' attentions have been diverted to coffee, and all the ginneries in the area handle less cotton today than when the railway was opened. Apart from being directed to send their products to a different station, the ginners have been affected no more than the growers by the extension. The Lint Marketing Board now pays slightly less for the transport of lint from Mityana, Wamala, Kawolongojo and Jeza ginneries, but not from those further north which now use Mityana station, such as Busunju and Katera. At first both lint and seed had to be consigned from the nearest station, but this control was later removed from cotton seed, which then immediately began to move to the oil mills by road. When return loads of goods such as sugar are available, direct road transport to Kampala or Jinja is often cheaper than sending lorries to the local station and then paying the rail charge.

Coffee cultivation has expanded considerably in this area over the past decade, but the official acreage figures suggest an equally great increase north and east of Kampala. The main reason for the expansion was the sharp rise in the price offered for the crop, and this has been exactly the same in the places far from the railway as in those beside it. Several new curing works have been built, two of which used the extension until 1963. At Mpigi this was entirely the result of Coffee Marketing Board policy, for the distance to Kampala is only 23 miles by tarmac road, compared with 13 miles on an earth road to Bujuko followed by an extra 18 miles of rail haulage. A factory was built at Mityana in 1954, and it could rail clean coffee more cheaply from the local station than through Kampala. The works was built at Mityana because coffee growing was increasing in an area with no large local factory, and a 50-mile haul on a tarmac road

would have been less of a deterrent to its establishment than was a comparable haul on earth roads at Kalisizo in Masaka. It cannot be considered a consequence of the railway extension, especially as it was sited on the Kampala road, at the point where the tarmac ended, rather than near the station, three miles away. Three small older works immediately made use of Kawolongojo station, but two were much affected by the boycott of Asian trade in 1960 and had to seek unhulled coffee in Kampala: and since their lorries would otherwise be going there empty, they reverted to Kampala station for the despatch of clean coffee. These three works are now facing severe competition from small factories recently erected by Associations of Growers, almost all of which have always used Kampala station even when they lie much nearer to Kawolongojo or Mityana. The main reasons given are the quicker despatch from there and consequent earlier payment, a better road in most cases, and the greater availability of return loads. The Associations were for some time allowed to arrange their own marketing, and most in western Mengo found road transport to Kampala cheaper than a haul to a station on the extension plus the extra rail haul. The railway has had no perceptible impact on coffee cultivation and certainly can have none under the new marketing policy.

There is a notable concentration of tea estates around Mityana, but these were in existence long before the railway, and expansion since 1953 has been slower here than in the other main tea-producing areas, Kyaggwe and Toro. The tea is now exported through Mityana station rather than Kampala, but the saving represents under 0.1% of its value, and as a short road haul is still involved there has been little gain in convenience. The railway has probably been of more value for the import of fertilizers, on which the rail rate is particularly low. Kampala provides the main market for any surplus foodstuffs from this area, and for the short journey road transport is found much more convenient than rail. The extension therefore has little effect on the cultivation of bananas, maize or groundnuts. The line may have influenced agricultural production by assisting a flow of labour from further west, but this movement is far smaller in scale than the long-established migration from the south-west and Rwanda.

The patches of forest through which the railway runs are exploited for timber, yet the sawmillers show no interest in the possibility of using it, preferring road transport into Kampala. No mineral deposits of any importance are known in the area.

The railway has had virtually no impact through the facilities it offers for imports, for almost all supplies are brought by road from Kampala. This is the respect in which the figures given by the Economic Survey Committee proved least justified, for they estimated that 4,120 tons of imports would have been received east of Mityana in 1950[9], whereas the 1962 figure was 201 tons. Bujuko and Kawolongojo were never likely to handle much import traffic, for neither is near to any large settlement, and even in 1950 far less freight was received than despatched at all the smaller stations in Uganda. Both stations stand alone in the rural landscape: Bujuko itself lies two miles south of the railway and consists of only four or five

small shops around a cross-roads, while there is not even a cluster of this nature at Kawolongojo. The extension has not attracted traders to it since the established pattern of trade takes the form of small-scale distribution of goods obtained from Kampala wholesalers, and for moving a variety of goods in very small quantities twenty or thirty miles there is no thought of using the railway.

The impact of the line, for passengers as well as freight, is severely limited by the very poor communications between these stations and the surrounding areas. There is no access to Bujuko from the north other than by canoe, for the line runs along the edge of a long swamp-filled valley, and the situation is little better at Kawolongojo. Even from the south the stations can be reached only from points on the main Kampala road, where the incentive to use them is small.

At Mityana the situation is very different for the station lies only one mile from a flourishing small town from which roads radiate in all directions. Earnings from coffee have brought increasing trade to the town, which has about fifty shops, and over 3,000 tons of goods are brought to these from Kampala each year. The impact of the railway has nevertheless been very slight, for as in most small towns in Uganda the structure of trade is ill-adapted to the use of rail transport. The fifty Indian merchants all sell a similar range of goods in competition with one another, and each obtains his supplies independently. All have a very small turnover and limited capital resources, and wish to obtain supplies in small quantities at frequent intervals, sometimes in response to specific requests by their customers. Road transport can meet their requirements without difficulty. There is generally some local produce to be taken into Kampala and often other business such as banking to be done there, while goods can be obtained from the wholesalers and brought back to Mityana within four hours, instead of the days involved with postal ordering and rail haulage.

The total level of trade in Mityana would justify the direct ordering of some goods in bulk from the factory or from the Mombasa importers, thereby reducing their cost locally. The railway could assist this, but it would also require a degree of co-operation among the traders which is not apparent, or else the establishment of a wholesale business in Mityana which no one has been willing to undertake. Only two traders use the railway regularly for certain items and they do not consider that it makes much difference to them. One factor discouraging the use of the station is the road haul needed to reach it: a small trader with no lorry may be charged 5/- a ton for this, while with return loads transport from Kampala is sometimes available for 12/- a ton. Petrol and diesel fuel are among the main requirements of the area, and these are brought from Kampala by road tanker, for there are no facilities for bulk handling at Mityana. The railway has helped one or two merchants to send small quantities of maize meal, sugar, salt and kerosene westwards, but the trade amounts to only about 100 tons a year. It also brings people from the west to the town's shops as well as the hospital, although the numbers involved are too small to have much effect on the importance of Mityana as a trading centre.

West of Mityana the density of population decreases sharply, and the opportunities for the railway to 'open up' the country appear greater. Some land which normally has 40 inches of rainfall, evenly distributed over the year, and has soils suitable for cotton, is as yet very lightly settled. Since it fringes the more densely populated part of Buganda, expansion of settlement into the area could easily take place. The railway has apparently provided no stimulus for this, however, for no such expansion has yet occurred. Myanzi station stands on the edge of Lake Wamala, which is usually a vast expanse of swamp, but which effectively cuts off Myanzi from all the country to the south. Along the short access road linking the station to the main Kampala—Fort Portal road several farms have been established, but the plots are worked almost entirely for subsistence crops, and no use is made of the railway by the settlers. The area to the north is well suited to cotton growing, but Kasanda ginnery which serves it produced only 230 tons of lint in 1962/3, compared with over 400 tons in both 1940 and 1950. Coffee production has increased, but this has not been directly affected by the railway since all is sent eastwards by road for curing. It is claimed locally that there is often a surplus of foodstuffs available, but no opportunities for marketing it: it should be possible to use the railway to tap the Kampala market, but no attempt has been made to do so.

In the extreme west of Mengo the rainfall is lower and less reliable, and conditions are not very attractive for agricultural settlement. Cotton can be grown south of Musozi, and a few people from Kenya have established themselves there, having seen the empty land while working on the railway construction. They make no use of Musozi station, however, for their cotton is taken by lorry to Maddu and thence to ginneries further east. In this part of Mengo cattle rearing is far more important than cultivation, but the Bahima pastoralists, who outnumber the Baganda in the division of Gomba County through which the line runs, are very reluctant to sell their cattle. South-west of Musozi the ratio of cattle to people is exceptionally high, yet none have been railed from there to the potential markets in and around Kampala.

Central Section

Musozi station handles some agricultural traffic from Mubende, but the railway has had no perceptible impact on the pattern of agricultural activity in that District. Coffee production has steadily expanded, but most is sent by road to Mityana or Kampala for processing, while cotton and tobacco production have declined since 1954. Furthermore, the railway has brought no differentiation between the country near to it and that further away. The estimated cotton acreage in the southern county of Mubende, Buwekula, fell from an average of 5,800 during 1953–55 to 4,600 in 1958–60 while that in the northern counties rose slightly[10].

Between Musozi and Bihanga the extension follows the Nabakazi and Katonga valleys, where population is extremely sparse and most of the

country is under grassland or light bush inhabited only by game. The 1951 Committee stated that 'the Katonga Valley is suitable in all aspects for agricultural settlement'[11], but this view is certainly open to question. With reference to rainfall it was claimed that 'the conditions here are not inferior to those in the Northern Province of Uganda, where a relatively dense agricultural population obtains'[12]. Yet their report contained a map which showed a rainfall of under 36 inches annually over the whole area between Mityana and Kasese; and for the central section this is confirmed by the latest Uganda Survey Department map (see Map 5). Almost all of northern Uganda receives considerably more than this. With regard to reliability only extreme north-eastern Karamoja shares with the Nkonge area the distinction of receiving under 30 inches more than three years in ten. The precipitation is relatively evenly distributed over the year, but this is a disadvantage, since during the six-month growing season of a crop such as cotton the rainfall will not normally exceed 20 inches. The problems are aggravated by local soil conditions, for the soils of the Musozi—Nkonge area have a very low water-holding capacity, in addition to being well below average fertility[13].

Agricultural development in the area between Musozi and Nkonge cannot be expected while better land lies unused elsewhere in the country. Further west the potential is greater, and the plots tended by railway employees around Kabagole and Bihanga stations yield fair crops of maize and groundnuts. A few people employed on building the railway have settled in the country they saw then, and a little Batoro settlement has taken place north of Bihanga; but the hopes that the line 'will open up for settlement large areas of fertile agricultural country, at present almost uninhabited, which will take the overflow of Uganda's population'[14], have so far been disappointed. The land is not as fertile as was suggested, while there is yet no overflow of population in western Uganda despite the existence of local overcrowding. The experience of official resettlement schemes has shown that there is little popular wish to move to empty land even from very densely populated Kigezi, and a railway does not increase the attractions of such movement for peasant farmers since they are in no position to use it.

The most immediately obvious use for most of the land around the central section of the line is for grazing, and northern Ankole is traditionally cattle country. Soon after Nkonge station opened a fortnightly cattle market was established there, followed in 1958 by a monthly market at Kabagole. But severe problems were presented by the increasing incidence of tsetse-fly, and a worsening of the situation in 1959 caused both markets to be closed. In Nyabushozi County of Ankole all cattle were evacuated from a large area, and many more were moved elsewhere voluntarily, so that the cattle population fell from 28,437 in 1958 to 7,694 in 1960. Numbers also fell in Kyaka County of Toro (while rising in all other counties), and in north-west Masaka, while no cattle are kept anywhere near the Katonga itself. There was some improvement in the situation south of the railway in 1961, when a new market was established six miles from

Nkonge, but a tremendous task of tsetse clearance still lies ahead, and there is no immediate prospect of the re-opening of Kabagore market.

If clearance operations are eventually successful, 1,000 square miles of grazing land will become available in Ankole, and this could support at least 90,000 head of cattle. The annual off-take could be 13,000 head a year, worth about £250,000 at present prices, and the railway could play an important part in assisting exports to Buganda. But experience at Nkonge showed that there are also other factors to be considered. At first many traders came from Buganda to buy cattle, and owners seemed keen to sell, but by 1958 the trade slackened, for once the unwanted beasts had been disposed of the Bahima demanded higher prices than the buyers would pay. The latter therefore turned to alternative sources, and many cattle brought to Nkonge market remained unsold. Even if the tsetse-fly is cleared the railway can only have much direct impact if the Bahima will pay for prosalt treatment to protect cattle re-introduced into the cleared areas, and will sell their surplus stock at more competitive prices. Government might assist with the former but it can do nothing about the latter. Alternatively, ranching on a commercial basis could be established, and a few progressive individuals with large herds would like to do this. But at present the problems of obtaining private tenure of grazing land seem almost insoluble. Several official schemes are being tried, but resistance to change is too strong to allow rapid results. Statements such as 'the new railway to Kasese should open up some of the best cattle land in Uganda'[15] are frequently made; but although this land may carry more cattle in future, the railway cannot solve the main problems involved.

Since the railway has had little impact on either agricultural or pastoral activities around the Katonga valley, it has brought little development of trade. The 1951 committee stated categorically that 'in a very short time new trading centres would undoubtedly spring up around all station sites, and grow rapidly'[16]. In 1962 there was one tiny store at Kabagole, and two each at Kasambia, Nkonge and Bihanga, serving mainly the railway employees and passengers using the stations. Nkonge lies at the only road crossing of the Katonga for many miles, and some twenty houses are clustered there; around the other stations there is not even a settlement of this nature.

Kamwenge—Dura River

Around Kamwenge the prospects for agricultural development are brighter, for rainfall and soil conditions are better and the line passes near to well-settled areas; but as yet the effects of the railway have been no greater than in the central section. Cotton can be grown, and markets were established around Kamwenge to encourage this, yet in Kibale County, in which the station is situated, and which is bisected by the railway, only 327 acres were planted in 1959, compared with 398 acres in 1953. The figure rose to 1,048 acres in 1961, but this still represented under 0.2% of the land in the County. No other cash crop is yet grown in the area, although cassava and sweet potatoes surplus to local requirements are

occasionally taken by passengers from Kamwenge to Kasese. Very little settlement has been drawn to the area around the station itself. One man built a substantial shop to coincide with its opening, but his turnover is still so small that he relies on Mbarara traders for his supplies. A second trader, obtaining his goods from Ibanda, established himself in 1962, while two other stores had then been built but not yet occupied. Some Kamba from Kenya have set up a small-scale but flourishing brewing industry based on sugar cane, a very little of which is brought in by rail. Since Kamwenge is now served by both rail and road, however, the extent of development has been extremely disappointing, and that which has occurred seems to have been related as much to a temporary Geological Survey camp as to the railway.

Considerable effort has been expended on resettlement schemes in the neighbourhood, especially in the Bigyera and Nyansimbo valleys where 800 families were settled between 1956 and 1959. But the new communities live almost entirely on a subistence basis, and the projects bear no relation to the railway. Further south, around Ibanda, coffee cultivation has expanded and groundnuts have been ousted as the chief source of income, but most of the coffee moves by road to Masaka or Kampala for curing. A pulpery was established in 1962 near Ibanda, and this now despatches small quantities of clean coffee from Kamwenge, although the railway was not considered a matter of much importance in the decision whether to build it.

Between Kamwenge and Dura River the only settlement is that of railway maintenance gangs, but maize and other crops grow well on the wives' plots, and there is certainly scope for agricultural development. Around Dura station a dozen dwellings were quickly established amid uncleared woodland, and a few others have followed, although in 1962 all were still temporary huts of flimsy construction. The railway brought this settlement, but life there is based on subsistence cultivation. As long as Dura is accessible only by rail or by a track barely passable in a Land-Rover there is little likelihood of further development.

The only other forms of economic activity which have taken place in this area are lead mining at Kitaka, a few miles south of Kamwenge, and limestone quarrying at Dura. Lead mining began in 1947 and continued for four years despite problems of inaccessibility. After a brief halt, production restarted in 1954 and the railway assisted the export of 118 tons of lead in 1956. But exhaustion of the most easily worked deposits and falling world prices brought mining to an end in 1959, although shipments of accumulated stocks in that year amounted to 201 tons. The railway had made the mine much more accessible, but transport from Kamwenge to the coast still cost £6 a ton, and a price of £40 per ton f.o.b. Mombasa did not cover both this and the costs of mining.

Efforts to exploit the Dura limestone deposits have also met with only limited success. In this case the railway is of vital importance, and no attempt at development was made until it was opened. The Tororo cement industry provided a market, and 10,300 tons were quarried and despatched from Dura station in 1958. However, the rail charge increased the cost

of Dura stone to 75/- a ton at the factory, compared with 15/- for local stone, and when a technique was found whereby the addition of fluorspar made the local stone satisfactory for all requirements, the demand ceased immediately. Quarrying was therefore suspended until 1961, when much smaller quantities were railed to Kamwenge for use in road construction in Ankole. Although the railway is essential to any working, it alone is not enough, for a market is equally essential. When a second cement works in Uganda becomes necessary, the railway could play an important part in encouraging its location at Dura, but such a development is not yet in sight.

Kasese Area

The most important developments related to the new railway have taken place around Kasese, and the outstanding case of Kilembe mine has already been considered at some length. The influence of the mine on the surrounding area has been surprisingly small, especially since the Batoro people show little interest in seeking employment there. The immigrant labour force requires substantial supplies of foodstuffs, and this has encouraged local sales of cassava and sweet potatoes: in addition there is a large movement of bananas from Fort Portal to Kilembe, but this does not reach the scale of the long-established movement to the Lake Katwe fishing settlement, and is of very slight significance in the local economy. Only the eight-mile valley between Kasese and Kilembe has been radically altered, through the introduction of the mine and the concentrator, the houses and workshops, the conspicuous tailing dams across the tributary valleys, and the slowly developing township at Kasese. Kilembe Mines have established a hydro-electric plant in the neighbouring Mobuku valley, and lime and brick works on the open ground below the mountains, but their effects are hardly far-reaching: the hydro-electric plant, for example, has no customers other than the mine and a hotel at Kasese.

The rate of urban development at Kasese has been very disappointing to those who foresaw a flourishing town arising there. 'A township at Kasese that may eventually be third only to Kampala and Jinja in size'[17] now seems a much more remote prospect than it did in 1951. The 1959 Census recorded a township population of 1,564, including 46 Asians and eight Europeans, but the majority lived in Kasese on a very temporary basis, as suggested by the exceptionally high ratio of 928 adult males to 191 adult females. Numbers have since increased, but the plans drawn up ten years ago for a town of 15,000 to 20,000 (including about 1,000 Europeans) have been abandoned. Considerable confusion arose from the alternative possibilities of housing the mine employees either at Kilembe or at Kasese, from uncertainty as to whether two urban areas should be developed independently, and from division of responsibility between the government and the mining company. As there had been no previous mining development on this scale there was no established policy. The mining company was finally left free to develop Kilembe as it wished, whilst Kasese was officially declared a township in 1953.

An outline plan was prepared for Kasese, with distinct commercial, industrial and residential zones, the first including 120 trading plots. During 1954 thirty-one applications for plots were received, mainly for retail trade but including also proposals for maize mills, oil mills and soap factories in the industral area. In almost every case, however, nothing more was heard from the applicant, and in the first ten years of the life of the township development has been limited to about twenty shops and five warehouses.

For several years only two or three shops were in existence, but in 1960 a number of Asians and Arabs arrived, having left Buganda because of a trade boycott directed against them. Until 1961 the only industrial plots taken up were those occupied by the oil companies for their bulk storage depots, and two occupied by warehouses handling Congo transit traffic. Late in 1961 a little new development took place: a third warehouse was built to handle tea from the Toro estates (although it has been used to deal with an upsurge of Congo traffic), while a timber firm from Jinja established a depot to handle its supplies to Kilembe and, it was hoped, timber from the Beni area of Congo also. Productive industry is limited to a cotton ginnery, and in 1963 there were no other industrial developments planned. An important element in the town is the hotel which was built in 1958 and is one of the most frequented in Uganda because of its position beside the Queen Elizabeth National Park. The building of the hotel was perhaps encouraged by the railway, but the connection was largely psychological, for the need for a vehicle within the Park ensures that most guests come by car.

The appearance of Kasese altered considerably between 1953 and 1963, but it has not yet become an urban centre in any real sense. All its shops are small general stores, while there are no banking facilities, no secondary school, no hospital or even dispensary: Kasese has therefore very little to offer to the surrounding area. A substantial proportion of the population consists of men of the Uganda Police, for a unit has been based in the township, but otherwise the government has shown no more interest in Kasese than private enterprise. Perhaps seven years is too short a time for the railway to have had much effect, but it is long enough for many plots marked out in 1956 and the rail sidings laid beside them to have become overgrown.

There is no single explanation of the failure of Kasese to develop as expected, but several contributory factors may be distinguished. One is undoubtedly the existence of Kilembe and Kasese as two separate units. Only the mine could provide a firm basis for urban development since the requirements of local trade are at present adequately met by Fort Portal. But Kilembe Mines adopted a policy of self-sufficiency in such fields as housing, education and health services, while they also run their own store to supply the regular needs of their employees. Without the Kilembe market there is little to attract traders to Kasese since the population of both the township and the surrounding country is small. The oldest and largest shop has very little custom from Kilembe, and efforts to serve as a wholesaler for a wider area have met with no success. One deterrent to

potential traders has been the high minimum building standards demanded, the premium generally being 4,000/-, for they are unwilling to invest such a sum until they have tested the market with a makeshift store[18].

Kasese has suffered from the unfortunate timing of its establishment. In 1953/4 trade was booming in Uganda, and the applications for plots in the township were the result of this situation. By 1956, however, the boom had passed its peak and the rate of new investment by Asian merchants had fallen off sharply; the small amount of new building since then has been a country-wide phenomenon. By 1959 it was clear to the Town Board that 'the development of Kasese by any means available must take first priority', and that the 'development of the Grade I commercial area is already virtually dead'[19]. The consequent reduction of minimum standards on some streets has assisted recent development, but the step was taken too late to have any dramatic effect.

An additional problem has been presented by the physical nature of the site of Kasese. The Nyamwamba River, which flows down the valley from Kilembe, has shown a marked propensity for changing its course, and among the channels adopted have been one or two passing through the township, the ginnery having been flooded more than once. The river now seems to have been brought under control, however.

The most fundamental reason for the lack of rapid urban development is not any factor acting as a deterrent, but rather the lack of any positive stimulus for it. The fact that Kasese is the railway terminus has not itself attracted much enterprise, and the assumption that a railhead function is enough to draw trade and industry to a township has proved to be unjustified. The most effective contribution of the railway has been the encouragement of Congo transit trade, for in addition to the warehouses, the four oil depots exist largely to supply Congo markets. These depots are something of a white elephant since they have a large unused capacity, and the largest could have handled the total turnover of the four in any year so far; but they do form an important element in the economy of the township. The extent of physical development brought by the transit traffic has, however, been limited first by rumours that the railway might sometime be taken nearer the border, and by the wish to wait and see what proportion of the traffic would be captured by the Mombasa route, and more recently by the disturbed political situation in Congo. If transit traffic now expands this may bring further development; and the vast open spaces in the township showed more signs of filling up in 1961 and 1962 than in earlier years. The prospects for a flourishing small town have brightened somewhat, but it is clear that the railway alone cannot make Kasese into a major urban centre, and the experience gained in this respect is of considerable relevance to the policy to be adopted for the northern extension.

In parts of Toro a little further from the railway some agricultural development has occurred since 1956, although no more than in most parts of Uganda. Cotton occupies a much larger acreage than any other cash crop in Toro, and production has expanded in Busongora County which extends from Kasese to the Congo border. There is little evidence to

suggest that this is related to the railway for the main period of expansion was between 1949 and 1951, when the crop had to be taken over 100 miles by road to Kaija ginnery in the extreme east of the District. Transport problems had been one factor hindering the earlier development of cultivation, but it was a realization among the Bakonjo people of the benefits to be gained by coming down from their mountain homes to grow cotton in the rift valley which led to the sharp rise in production in Busongora. This occurred despite continued transport difficulties rather than as a result of any solution to them. In view of this the owners of the Kaija ginnery decided to replace it by one in Busongora, which had replaced eastern Toro as the chief producing area. This decision was taken independently of the project to extend the railway into Toro, and provided official approval were given, the move would have taken place whether the line had been built or not[20]. The railway was the chief factor only in fixing the exact site and the date of opening. The ginnery could have been built in the Katojo area where most of the cotton is grown, but location at the railhead is more convenient for lint and seed shipment and for obtaining supplies such as gunny bags and oil fuel, although the ginnery has no rail siding. The ginnery appears to have had little effect on local cotton production, which is limited by the sparse population and the unwillingness of the Batoro to take up cotton growing. The total acreage of cotton in Toro reached its peak in 1954 at 35,500, the figures for more recent years being 23,250 acres in 1961 and 21,750 acres in 1962: expansion in Busongora has ceased, while the acreage has fallen around Kaija mainly because Kyalo transport ended there when the ginnery closed.

Coffee production has been increasing in Toro, but until 1961 the whole crop was sent by road to Kampala and the railway was therefore of no direct significance. The new co-operative curing works at Bundibugyo in Bwamba County despatches its clean coffee via Kasese: but as noted earlier it would have been built even if the railway had not been extended, for the Coffee Marketing Board was already paying for the road haul to Kampala, and this would have been cheaper for clean coffee. The establishment of the factory was related to the expansion of production in the area, and to the wish to associate the growers with the processing industry, rather than to the railway. The tea industry is also expanding in Toro, and most of the production is railed from Kasese. But the saving over road transport to Kampala is very small, and both the private Uganda Company and the public Uganda Development Corporation, which are together responsible for most of the development now taking place, maintain that the same policy would have been adopted if the railway extension had not been built.

A proposal for irrigated sugar production, amounting to 40,000 tons a year, on the flat land beside the Kazinga Channel, was made in 1953, and consultations took place between a private British firm and the Colonial Development Corporation to investigate the project, which had been prompted by the decision to build the railway. Rail facilities would have been of considerable importance, and the adoption of a terminus at Kasese, thirty-five miles from the proposed site, was said to be one factor discouraging

development: but the chief obstacles seem to have been the need for costly irrigation works, and the firm's reluctance to invest over £3 million in a country considered politically unstable.

More recently the Agriculture and Water Development Departments of the Uganda Government have been considering a large irrigation scheme for the Kasese-Dura-Homa area, using water from the Mobuku and Sebwe Rivers. This could greatly increase cotton yields and would allow food crops to be grown on the same land within the year. The support of the Toro Government and the interest of some of the local population have been secured, and a pilot scheme has been very successful. Some settlement has already taken place on the flats north of the railway, but the direct influence of the line is slight, and is largely confined to its effect on official thinking. To some extent it is the lack of development following upon its construction which has directed attention to the area. The extension could play an important role in assisting the export of crops such as groundnuts, or the movement of food crops to Buganda and Eastern Region, but whether it will do so remains to be seen. The scheme is certainly important as an example of the efforts that must be made if the opportunities offered by the railway are to be realized.

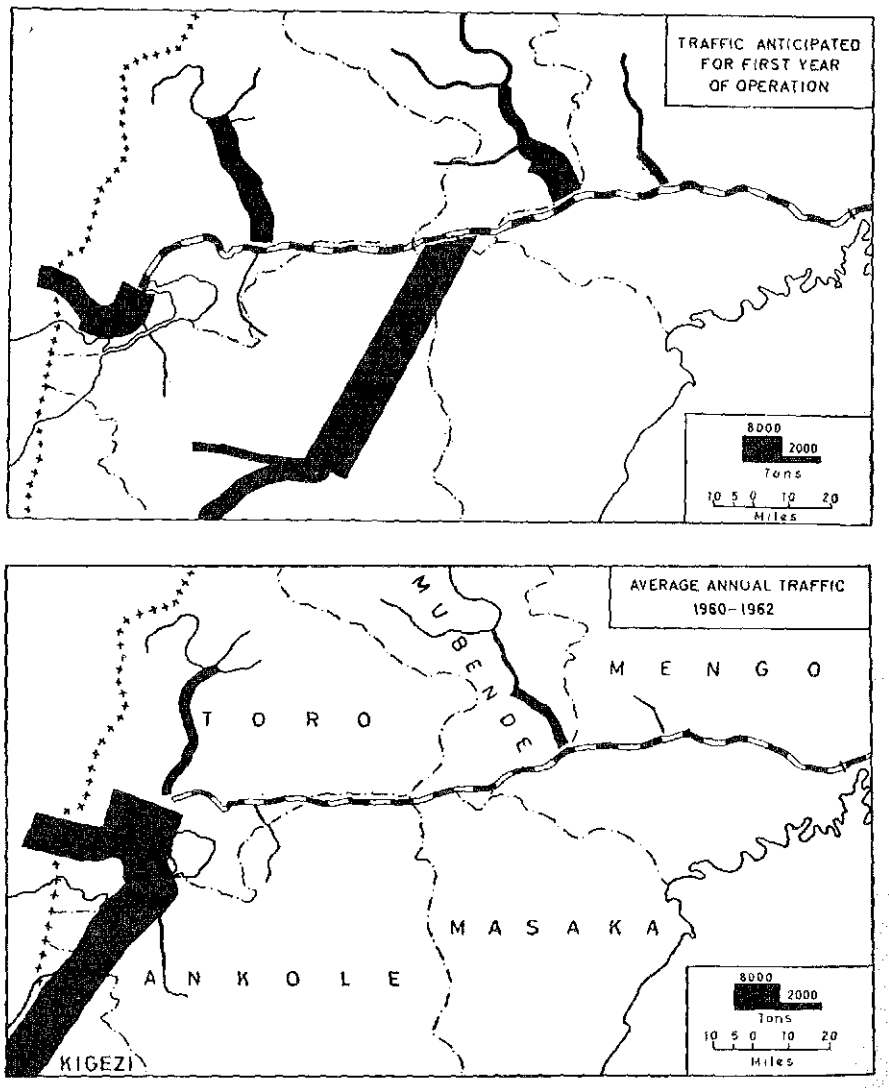
The extension is well placed to serve the fisheries of Lakes George and Edward, which were already the most fully developed in Uganda before it was built. Until 1960 they depended heavily upon sales to Congo, and only when this market collapsed was much attention given to the possibility of using the railway to reach markets within Uganda. A little smoked fish is now railed to Kampala, but more moves there by road, while the opportunity of railing fish to Eastern Region has not been taken as yet. *Ngege* fetch 1/20 each in Mbale during the cotton season, compared with 60 cents beside Lake Edward, while the cost of road haulage to Kasese and rail freight to Mbale would be only 13 cents per lb. The fishermen are anxious to find new markets, but the railway cannot assist in this without the entrepreneurs to undertake the trade. The three filleting and freezing plants in Uganda are all located within twenty-five miles of Kasese, but their establishment has not been related to the railway. The largest now uses the line, but when it was opened it depended on air transport, while the two other factories despatch their production as far as Kenya by road.

The economic activity on which the railway has had least impact in relation to that forecast in 1951 is perhaps forestry. It was stated then that 'exploitation of the natural timber resources of the west has inevitably been hampered by lack of transport facilities' and that in the Kibale-Itwara forests near Fort Portal, 'the advent of a railway would stimulate the establishment of a second sawmill and the exploitation of these forests'[21]. In fact the only timber handled on the western extension has been that moving to Kilembe, for the sawmills in Toro and Ankole still use road transport exclusively. The railway has had some indirect effect, since Kilembe has provided a useful market; but it has also enabled timber from other areas to compete in this market, and in fact timber production in Toro and Ankole has hardly risen since 1950. For a while Kilembe Mines obtained

pitprops from Kigezi, but the railway allows competition from Kenya producers who now meet most requirements.

Transport in Western Uganda and the Role of the Railway

The contrast between the role forecast for the western extension in 1951 and that which it is now playing lies essentially in its failure to serve as the main transport artery for western Uganda as a whole. The Economic



Maps 7 and 8. The Western Uganda Railway: Source and Destination of Freight Traffic at Stations West of Mityana (excluding Kilembe traffic). The upper map is based on the figures given in *The Way to the West*, appendices 6 and 8. The lower map is based on information obtained from E.A.R. & H. and from local enquiries.

Survey Committee considered that 'freight to and from Mubende and south Toro will use the proposed railway whether it runs along the Katonga valley or north of it' and that it 'will also provide real assistance to the districts of Ankole and Kigezi'[22]. In Legislative Council the Acting Financial Secretary stated that 'Mubende, Toro, Ankole and Kigezi will use this route for the alternatives can never be so satisfactory'[23]. These expectations have proved unjustified, for most supplies for western Uganda continue to be taken there by lorry from Kampala, while most local produce which is free of government control also moves by road. One particularly important factor contributing to this is the distance from the railway of all the District headquarters, for each handles a large proportion of the trade of its District. The services of Mbarara or Fort Portal wholesalers are at present indispensable for breaking down bulk supplies as well as for collecting local produce from many scattered settlements. The value of the railway therefore depends to a considerable extent on its use by the traders of the main towns.

Mubende town is much smaller than most District centres, and has only about forty traders who receive some 2,000 tons of supplies annually. The distance by road to Kampala is 103 miles, of which 47 miles has a tarmac surface, and there is no difficulty in sending a lorry loaded with produce in the morning and bringing it back with trade goods in the afternoon. Local produce finds a market in Kampala, but it is irregular in supply, and it is normally necessary to arrange its sale personally. The goods for the Mubende shops are obtained as required from the larger Kampala firms, rather than ordered from the factory or the coast and collected from the station. These factors would discourage the use of the extension even if it passed through Mubende, as they do at Mityana: when a 24-mile road haul is required to reach Musozi station the attractions of rail transport are even less, and many traders have never even considered the possibility of using it. Few passengers travel to or from Mubende via Musozi, for the trains pass through at night, and the bus connection is inadequate, whereas relatively good bus services link Mubende to Kampala and Fort Portal. The role of the railway in serving Mubende is thus largely confined to moving the government-controlled cotton crop, and it enters only very slightly into the life of the District.

The traders of Fort Portal show little more interest in the railway than those of Mubende, despite the much longer road journey to Kampala. A tarmac road links the town to Kasese, and a cartage service was available for some years, yet Fort Portal receives about 5,000 tons of goods a year by road from Kampala, compared with imports through Kasese fluctuating between 1,000 and 3,000 tons. Most of the road transport is undertaken by Kampala firms who are looking for business anywhere they can find it, and their rates are so low that one of the largest Fort Portal traders has sold the lorries with which he used to bring goods from Kampala. The charge is commonly 50/- a ton for the haul from Kampala and about 40/- for the reverse journey for which full loads are more difficult to obtain. Since the rail rate from Kampala to Kasese ranges from 29/- to 80/- and the charge for the Kasese-Fort Portal haul is 31/- a ton, the rail route is quite

uncompetitive. The cartage agency also proved unsatisfactory: the first firm engaged proved most unreliable and the contract was quickly terminated; a more responsible firm was then appointed but by 1962 the business had been sub-contracted to a small concern which was giving very poor service. Goods booked to Fort Portal were sometimes delayed so long at Kasese that the traders finally had to go to collect them themselves. The agency was finally abandoned in January 1963.

Even when cheaper transport from Kasese is available it is often not used. There is now a regular movement of coffee from the Bundibugyo works to this station, but apart from occasional loads of flour or cement the lorries return empty through Fort Portal to Bwamba. This situation is not officially recognized in matters such as fixed sugar prices, for these stand at 61 cents per lb. at Kasese and 63 cents at Fort Portal to allow for extra transport, while supplies for Kasese in fact move by road via Fort Portal. Another example of the failure of the railway to serve Toro is provided by the beer and soft drinks trade, for these commodities are normally carried by road to both Kilembe and Kasese. Six hundred shillings is charged for the return trip from Kampala (empties forming the return load), by a seven-ton lorry: even for transport to Kasese, therefore, the cost is little more than the railrate of 76/- a ton, while it is claimed that road haulage provides speedier delivery and fewer breakages.

The Fort Portal traders show interest in the idea of a branch line to the town, but this could hardly be justified when there is no certainty that they would use it for even the majority of their supplies. While the nearest stations are Kasese and Kamwenge the railway cannot be of very great importance to the town. It does, however, bring certain supplies obtained direct from Mombasa or other places beyond Kampala, including for example petroleum products, and it carries some of the exports of Toro District, although the saving compared with road transport is rarely great. The railway is therefore of some value to Toro apart from its function in serving Kilembe. This is not true of Ankole and Kigezi.

The 1951 committee estimated that the extension would handle about 11,000 tons of Ankole traffic annually at first, most moving to or from Mbarara town. But virtually no Mbarara traffic has ever passed along the line, for direct road transport to and from Kampala is found much more satisfactory than a circuitious route via Kamwenge. The road to Kamwenge is poor, whereas that to Kampala is first-class, half of it tarmac-surfaced for some years and half recently realigned and tarred. It was originally intended that a road should be built to Nkonge, but even this route would have been cheaper than road haulage to and from Kampala for only a very few commodities. Road transport charges are generally about 40 cents per ton-mile where return loads are available, and on this basis routing via Nkonge would be cheaper only for such low-value goods as grains and fertilizers: for corrugated iron it would be more expensive, while for many trade goods the rail route would cost far more. The costs involved in using Kamwenge would be even higher, and since this route would be much

slower, and would offer far fewer opportunities for return loading, than direct road transport to and from Kampala, the Mbarara traders never consider it.

The extension is not normally used even for goods moving to and from Ibanda, which lies only twenty-five miles from Kamwenge, even though Ibanda is an unusual trading centre in that it consists of six relatively large stores which have combined into a syndicate for ordering their supplies. Since this does not use the railway, the individual small traders in other centres cannot be expected to do so.

Within Ankole only the Bushenyi coffee works and the tea factory in the north-west use the railway regularly. The materials for the construction of each were supplied via Kasese, and the production from each is exported by this route. It would in fact seem cheaper to send the coffee by road to Kampala, but since the Coffee Marketing Board allow the curing works 49/- a ton for the 62-mile road haul to Kasese, whereas the transporter's charge is about 28/-, no complaint is made. The role of the railway under free trading conditions is indicated by the fact that the lorries normally return empty from Kasese, although the transporter is prepared to carry goods for only 15 cents per ton-mile since even this would make some contribution to his costs. Almost all supplies for Bushenyi town are still brought by road from Mbarara or Kampala: the charge for moving cement from Kampala is sometimes under 40/- per ton, which is the rail charge for the Kampala-Kasese section alone even for this low-value commodity. There are twenty lorries engaged in this business in Bushenyi, eight owned by one firm which remains solvent from year to year while taking millet, maize, bananas and coffee to Kampala and bringing back goods for the local traders at extremely low rates.

The anticipated role of the extension is indicated by the statement made in 1952 by the District Commissioner that the unpopular compulsory growing of millet as famine reserve 'must continue until the railway has come within easy reach, and can if necessary bring food quickly and cheaply in time of need'[24]. Today it is generally accepted that supplies could be brought much more easily by road than by rail.

The same considerations apply to Kigezi District as to Ankole. From Kabale the choice lies between a road journey of 145 miles to Kasese and then a 208-mile rail haul to Kampala, or a direct road journey of 270 miles: the latter is always preferred. The road haul can be completed in a day, and the rates charged have fallen steadily in recent years, that for moving petrol from Kampala for example having dropped from 65 to 35 cents per gallon. Even the export of minerals direct to Mombasa takes place via Kampala station rather than Kasese, while most other exports from Kigezi are sold in Kampala and could therefore profit even less from using the extension. The commodity moved in the largest quantities is maize, of which over 1,200 tons were taken to Kampala in 1960. Since the rail rate for grain is very low, the Kasese route would be slightly cheaper, but a direct road haul ensures that the maize reaches the right trader at the right

time to obtain the maximum price for it. Improvements in road transport have assisted the shipment to Kampala of 400 tons of fresh vegetables each year: in this case a strong deterrent to the use of the railway is the longer transit time. The cost of road transport is still too high to allow Kigezi potatoes to compete successfully with those imported from Kenya, but officials of the co-operative which handles the trade do not consider that use of the Kasese route would reduce their overall costs.

Several factors operating throughout western Uganda limit the value of the extension. One which could easily be altered is the railway rating policy. For low-value goods the charge per mile normally falls as the length of the journey rises, but for goods moving between Mombasa and Kasese this applies only on the Mombasa-Kampala section, as a separate charge is made for the haul over the extension. If through charges were calculated so that the full effects of the taper structure were felt, traders would have a greater incentive to use the railway, and for certain imports there would be a clear advantage in ordering goods direct from the coast through a station on the extension, rather than depending on purchases from Kampala. At present a break in the rail rate at Kampala encourages a break of journey there, and onward transit by road. The large Kampala firms have a strong hold on the trade of western Uganda, and while goods are obtained from them the railway will not be used. It is more likely to be used for goods brought from further away, but the break of taper reduces the incentive for such a change. The effect for certain commodities is shown below:

	Rate per 100 lb.			Taper broken at Kampala	Through taper
Salt	Mombasa	—	Kasese	7/73	6/47
Flour	Eldoret	—	Kasese	2/83	2/25
Petrol	Mombasa	—	Kasese	15/84	14/24
Diesel Fuel	Mombasa	—	Kasese	8/74	7/32
Groundnuts	Kamwenge	—	Mombasa	4/46	3/91
Wolfram	Kasese	—	Mombasa	9/82	8/17

The oil companies established depots at Kasese in the expectation that through charges would quickly be instituted, and although the present high rates benefit railway finances, a reduction might lead to the supplying of a larger area from Kasese. The present situation, in which the country's largest road haulage firms can transport the oil companies' supplies to Mbarara, Bushenyi and the whole of Kigezi more economically from Kampala than from Kasese, belies any suggestion that road competition is only a matter of small operators working on an uneconomic basis.

Exports would also move at lower rates, although it is doubtful whether this would affect the producer in many cases. Any savings on cotton and coffee would be absorbed within Marketing Board funds, while that on tea would be too small to affect production. The rates for moving Kilembe copper to Jinja and agricultural produce to Kampala would not be

altered, but if more imports moved through Kasese the return load situation might change sufficiently for some produce to be railed to Kampala, while lower rates for exports should slightly increase the incentive for sales of crops such as groundnuts.

One reason why the traffic forecasts of the Economic Survey Committee have not been achieved is that the building of feeder roads which they recommended has not taken place. These included a tarred road from Mbarara to Nkonge ("The committee considers that the construction of such a road must be given the highest priority'[25]) and a much improved road from Fort Portal to Kamwenge. Most station sites were selected because some road or track crossed the line at that point, but these were rarely adequate as feeders. In 1954 it was decided that potential traffic would not justify spending £½ million on the road to Nkonge, and that the existing road from Mbarara to Kamwenge, which passes through more productive country, should be improved instead[26]. Even this was then shelved when it became clear that most Mbarara traffic would continue to use the road to Kampala, especially since a tarmac road leading thirty miles southwards from Kasese and a bridge over the Kazinga Channel were expected to draw the western Ankole and Kigezi traffic to the terminus. This approach was encouraged by the prospect of higher railway revenue from the longer rail haul, but in fact the costs of movement by this route have rendered it uncompetitive with direct road transport. The Mbarara-Kamwenge road was much improved in 1958, but two years later it was described by the local Supervisor of Works as being 'in a disgraceful state of repair and neglect'. In mid-1962 it was again in relatively good condition, but this could not be said of the continuation from Kamwenge to Fort Portal, which has never been given much attention since the first-class highway from Kasese to Fort Portal is considered to have rendered this unnecessary.

Nevertheless Kamwenge is relatively well placed for feeder roads: Kasambia still has no road access, while the road serving Kabagole is so poor that the bus route to it has had to be abandoned. However, the experience of Kasese, where an excellent road has not attracted the bulk of the Fort Portal traffic, suggests that more feeder roads alone would not necessarily ensure a much more important role for the extension. The road from Mubende to Musozi is of a reasonable standard, yet it is little used other than for cotton traffic. The construction of a major highway to Nkonge was perhaps a sound proposition in 1951, but today it would be a most extravagant use of funds. The recent bitumenization of the Mbarara-Masaka road reflects the fact that this, and not the railway, is the major line of communication for Ankole: moreover it has reduced traffic on the railway still further, by shifting fish traffic from rail to road and by encouraging more Congo traffic to move via Mbarara, for example. Now it is proposed to tar the road from Mbarara to Kasese if sufficient funds can be found. The Fort Portal-Kampala road now presents a problem, for there is pressure for the bitumenization of a further section of it. Provided every effort is made to make the railway a satisfactory transport route for

Toro and Mubende, there would seem to be a case for giving this a lower priority than the improvement of roads which will be complementary to, rather than competitive with, the railway.

A further problem of communications is presented by the lack of any telephone link between most stations and the potential users of the railway. A trader in Mubende must send a lorry to Musozi to see if his goods have arrived, and if they have not it must return empty. Alternatively he must wait several days with his capital tied up until they are sure to have arrived, by which time demurrage charges may have been raised. Both this problem and that of arranging return loads to and from the stations would have been eased if any trade had developed around the stations. At present most traders are quite unfamiliar with the facilities available at a station many miles away, and would be prepared to use it only with the assistance of an agent on the spot. They would be more prepared to take produce to these stations for movement to Kampala and beyond if a return load of goods could be obtained there, but even at Kasese there are stocks only of cement and salt.

Many traders have their own vehicles and are reluctant to withdraw business from their own transporting interest. If the railway is to be more fully used the facilities offered must be considerably more attractive, and when the railway can offer a satisfactory service efforts must be made to make people aware of this. Since the failure of the extension to serve large parts of western Uganda is due to a large extent to road competition, the transport situation in the area has clearly improved in the past ten years. But the west is still at a disadvantage compared with Buganda and the east in terms of transport costs, and as yet the railway has not contributed greatly to the solution of this problem.

The Western Extension and Congo

As soon as the railway was open to Kasese some freight moving to and from Congo was handled, and the volume soon became substantial. No figures are available for 1956 and 1957, but those for subsequent years are given in Table 9a. Table 9b indicates the importance of the transit traffic in relation to the total volume of freight on the extension.

TABLE 9a

WESTERN UGANDA EXTENSION CONGO TRANSIT TRAFFIC

(Tons)

	Congo Exports	Congo Imports	Total
1958	4,924	13,670	18,594
1959	8,567	15,856	24,423
1960	13,146	15,186	28,332
1961	23,548	10,430	33,978
1962	9,989	10,714	20,703

TABLE 9b

CONGO TRAFFIC IN RELATION TO TOTAL FREIGHT
1960

(Tons)	Eastwards	Westwards
Congo traffic ..	13,146	15,186
Kilembe traffic ..	68,000 apx.	6,500 apx.
Other	9,200 apx.	11,000 apx.
Total at Kasese	90,346	32,692
Total on Extension	114,365	36,247

Source of data: E.A.R. & H., files, Kampala.

From the part of Congo near the Uganda border the distance to the Atlantic at Matadi is double that to Mombasa, and the journey involves numerous transhipments, although the Atlantic route offers the advantage of a shorter sea voyage to Europe with no dues for passing through the Suez Canal. The Belgian Government allowed the 'Route Nationale' to be heavily subsidized, to make it competitive with those to the East Coast, but in some cases the problems of transport to and from Matadi were so great that movements took place through Uganda even before 1956. The Lake Albert steamers called at the Congo ports of Mahagi and Kasenyi, landing about 2,500 tons of goods and collecting about 10,000 tons each year. Further south some traffic moved to and from Congo and Rwanda through the Kampala railhead, most crossing the border at Kisoro; this amounted to about 11,000 tons inwards and 2,000 tons outwards around 1952–3[27]. When a direct rail link was provided between Mombasa and a point under fifty miles from the border the volume of transit traffic seemed certain to increase. The Central Line of Tanganyika had much earlier linked Dar es Salaam with Kigoma on Lake Tanganyika, from where a steamer service ran to Albertville and Usumbura, and on this route the traffic amounted to 89,000 tons in 1954 and 147,000 tons in 1962.

Kasese quickly established itself as the chief outlet for the exports of the Beni and Goma areas, the main items being distinguished in Table 10. Most of the coffee comes from around Goma, while Paulis is the main source of the palm oil, which is sent regularly to soap factories in Nairobi. This is not a new trade, but until 1958 the oil was sent first to Matadi, then shipped to Mombasa and railed from there, a journey of over 5,000 miles. Much less direct transit traffic has been carried westwards, but the railway has played an important part in the re-export trade in petroleum products, for the Mombasa route offers great advantages for imports from the Middle East. In 1956 petrol was already moving in large quantities by road tanker from Kampala, despite sections of very difficult mountain road. This route continued to be used until bulk depots were built at Kasese, and in 1957 about 17,700 tons of oil products were supplied from Kampala. Some of the traffic has now been diverted to Kasese, but the resulting benefit

TABLE 10

CONGO TRAFFIC HANDLED AT KASESE STATION

Tons of Freight

	1959	1960	1961	1962
From Congo				
Coffee	5,251	5,607	17,500	6,266
Palm Oil	2,039	5,500	3,597	2,336
Tea	721	1,085	1,053	361
Wolfram	233	474	190	—
Rubber	—	—	822	787
Total (incl. others) ..	8,367	13,146	23,548	9,989
To Congo				
Petroleum Products ..	10,671	10,916	3,172	5,440
Salt	376	953	2,032	3,330
Cement	2,760	230	264	109
Meat	572	357	132	131
Butter	354	329	202	165
Fertilizer	—	1,214	346	—
Malt	—	—	1,322	—
Empty Drums	—	340	506	277
Caustic Soda	—	11	230	306
Total (incl. others) ..	15,856	15,186	10,430	10,714

(—indicates not separately recorded.)

Source of data: E.A.R. & H. files, Kampala.

has been very small, transport costs now including 33 cents per gallon for the Kampala-Kasese section and 29 cents for the 163 miles from Kasese to Goma, compared with 70 cents for the 390-mile road haul from Kampala to Goma. The introduction of through tapered rates from Mombasa to Kasese would reduce the cost by a further 17 cents: in this case the extension should encourage the supply of a larger area of Congo from Uganda.

The breakdown of internal communications following independence in 1960 increased the importance of the western extension for Congo. Exports through Kasese rose sharply as coffee from the Stanleyville area was added to that from Goma and rubber from the same area was shipped via Mombasa for the first time. The expansion of the area served to include Orientale Province was encouraged by the strained relations between authorities in Stanleyville and Leopoldville, and it remains to be seen whether this traffic will continue when conditions are more settled. The pattern of imports has been most unstable since 1960. Restrictions were imposed on the supply of petroleum products in 1961, while currency problems have affected trade in other commodities. In 1962 both imports and exports were cut by the washing away of two bridges on the Kasese—Goma road.

Although the western extension captured most of the Congo traffic formerly carried by road through western Uganda, some continued to move to and from Kampala, together with some Rwanda traffic. Table 11 gives figures for exports: none are available for imports since these are obtained almost entirely from Kampala merchants, rather than ordered direct by rail. Since some return load is found for the lorries whenever possible, imports are probably similar in scale, with the addition of a substantial

TABLE 11

CONGO AND RWANDA EXPORTS RAILED FROM KAMPALA

(Tons)	Coffee	Tea	Pyrethrum	Wolfram	Total
1958	686	343	184	—	1,213
1959	74	17	—	—	91
1960	46	89	—	32	167
1961	2,245	605	400	150	3,390
1962	—	—	—	—	7,200

Source of data: E.A.R. & H. files, Kampala.

but irregular supply of petrol. The traffic rose higher in 1963, amounting to 14,996 tons in the first nine months of the year. The sharp increase in traffic reflects in part the increasing use of the Mombasa route by Rwanda, which no longer has much interest in the long route across Congo to Matadi, and which is reluctant to use the Kigoma—Dar es Salaam route since this involves crossing Burundi. For Rwanda traffic movement via Kasese is no cheaper than road transport to and from Kampala and has the disadvantage of involving crossing Congo territory. Congo traffic at Kampala has also increased, partly through the break in communications with Kasese mentioned above and partly through the need for a barter system of trade, as Congo currency is not acceptable abroad. Payment for exports is made in East African shillings which are then used for the purchase of imports, and there are far greater opportunities for such business in Kampala than in Kasese. Kampala also offers facilities for the servicing of vehicles, and is a more attractive night stop than Kasese for the lorry drivers, many of whom are Europeans. The bitumenization of the Mbarara-Masaka road has also further increased the attractions of using Kampala.

It is clearly not in the interests of the Railway Administration that much of the transit traffic should move across western Uganda by road, and this must also involve increased road maintenance costs for the Ministry of Works: but it may be of some advantage to the Uganda economy. It is certainly to the advantage of the Kampala merchants who supply the goods taken to Congo and Rwanda, and it is unlikely that the same volume of trade would take place at Kasese if that were the railhead for all the export traffic, even though there might then be some improvement in the facilities offered there.

The construction of feeder roads and the rates policy adopted have been factors of some significance for the volume of Congo traffic on the extension.

The area served by Kasese was limited at first by inadequate road connections, but early in 1958 a new road was opened passing through Ishasha, south of Lake Edward, and this gave access to the Goma district. Another road, built across Busongora County partly for tourists visiting the National Park and partly for Congo traffic, shortened the distance between Kasese and Beni. Road communications with Congo are now normally relatively good. Those with Rwanda are less satisfactory since the proposed road to Nkonge, which was expected to take this traffic, was never built. It is uncertain, however, whether this last road would have attracted the traffic which now moves to and from Kampala.

In order to make the Mombasa route more competitive with that via Matadi, special rates for Congo traffic between Kasese and Mombasa were introduced in 1957, and today all goods except bulk oil products are carried at rates lower than those charged for Uganda produce or supplies. For most items the reduction is between 10% and 20%, but in certain cases it is substantially greater. Congo coffee, for example, moves to Mombasa at 143/52 per 1,000 kilogrammes, whereas the equivalent rate for coffee from Bwamba is about 220/-. These rates do not encourage the use of Kasese rather than Kampala for exports, however, for special rates are also offered from the latter station. The reduced rates for imports apply only to Kasese, and while this has not brought a large volume of import traffic there, it is notable that all goods passing through Mombasa consigned direct to Congo are now booked via Kasese. The introduction of special rates to Kampala might have a doubly adverse effect for Uganda, by diverting some traffic from the western extension and by encouraging the ordering of goods direct from Mombasa rather than purchases from Kampala merchants.

Trade with Congo and Rwanda is now providing some useful business for certain Kampala firms, but the western extension has not yet brought about any significant development of such trade at Kasese, and the direct contribution of the transit traffic to the local economy is very small. The importance of the Congo transit traffic in the economic geography of Uganda lies mainly in its contribution to the maintenance of the new railway. This contribution could increase substantially if Congo enjoys a new period of economic development, and especially if its trading pattern alters, with an expansion of trade with Asia for example, but no forecasts can be made until political conditions become more stable.

A Railway Extension into Ankole and Kigezi

Some discussion has taken place about the possibility of constructing a branch from the western extension into the relatively densely populated country of western Ankole and Kigezi. An unpublished memorandum by the General Manager in 1959 recorded that 'the line as it now stands does not conveniently meet the needs of the people of these districts', and considered the feasibility of a branch from Bihanga, following the Oluyubu, Kabobo and Koga valleys to Kabwohe, Sixteen miles west of Mbarara. Neither this section nor a continuation to the Mbarara-Kabale road near Kinoni

would present great engineering difficulties; but a further extension into mountainous Kigezi would be very costly. The 1959 statement observed that there was not yet sufficient justification for a branch, although it would bring economic development and might be an economic proposition in the future; yet twice in 1961 it was asked in Legislative Council when construction was to begin.

Although the country around the projected railway is well settled, cash crop production has until recently been small. Coffee cultivation is now expanding, and a railhead at Kabwohe would be only twenty-one miles from the Bushenyi curing works, but any resulting economy on transport costs would be absorbed within Coffee Marketing Board funds and would not affect the local growers. The railway could assist the export of groundnuts, but only if local marketing arrangements were greatly improved. Other produce exported from western Ankole and Kigezi consists largely of foodstuffs sold in Buganda, and experience elsewhere suggests that road transport would continue to handle this traffic unless positive measures were taken to divert it to rail. The Ankole trade is centred on Mbarara, from where a journey back to railhead would be necessary, while Kigezi traders who have brought produce seventy-six miles from Kabale to Kinoni would often continue to Kampala, where they can make a quick sale and always find some return load. Some cattle traffic might develop, for about 7,000 head are exported annually from western Ankole; but there is little scope for rapid expansion of this trade since south-west Uganda has no large surplus of cattle over local requirements, and the limited grazing area would not permit any great increase.

No large volume of import traffic could be anticipated. Oil products would still be supplied by road to Ankole and Kigezi since their consumption is insufficient to justify the erection of bulk handling installations at the terminus. At prevailing rates many consumer goods could be moved from Kampala more cheaply by road than by rail, and the branch would be left with only the lowest rated goods which would yield little revenue. The absence of existing trading facilities at either Kabwohe or Kinoni, each of which has only a dozen small African shops, would greatly discourage the use of the railway, and its value would be far greater if it ran to Mbarara or even Bushenyi. In Mbarara trade is sufficiently well developed for imports to be obtained by rail direct from the coast, provided through rates were quoted, and if traders from areas further to the south-west obtained supplies from there, produce would probably be brought to the railhead. The benefits would generally be very small, however, and the volume of traffic that could certainly be expected would be insufficient to support a branch. There is a possibility of greatly increased Rwanda transit traffic, which could profitably use a branch into Ankole, but it would be unwise to make any forecasts about such traffic until the new political situation becomes clearer.

The case for a branch from the western extension does not appear strong from either the viewpoint of railway finances or that of possible benefits for the area it should serve. Since £$\frac{3}{4}$ million has recently been spent on

the Mbarara-Masaka road the area suffers very little from inadequate communications. It suffers from its distance from the economic heart of the country, but a branch railway could make little difference to this. There seems no doubt that there are other areas in East Africa where railway building would be of more benefit, some of which are considered briefly in Chapter 9.

Conclusions

The Western Uganda Extension has been a great success as far as its immediate object is concerned, for it has provided satisfactory transport facilities for Kilembe mine, which is at present making a valuable contribution to the Uganda economy. The line also showed a small profit each year from 1958 to 1961 in terms of current receipts and expenditure. The long term prospects are less bright, however, for the known reserves of copper at Kilembe are sufficient to permit mining only until 1971 at the present rate of working. The removal of the major *raison d'être* of the extension would create severe problems comparable with those now presented by the Mpanda branch in Tanganyika, considered in Chapter 9. Since the railway to Kasese represents an investment of over £5 million, its success as an agent encouraging economic development cannot be accepted on the basis of an industry with a life of only fifteen years, but only if a substantial expansion of other activities has also been assisted. As yet there is little evidence of this.

The extension cannot at present be considered a profitable venture in itself. In 1962 earnings amounted to £295,007 compared with expenditure of £354,637, reversing the pattern of small profits in the four previous years. A further £54,435 was set aside for renewals, while £351,704 had to be paid as interest on the capital borrowed for the line. These extra charges were off-set by credits in respect of earnings from traffic passing over the main line, in accordance with the traditional branch line formula adopted by E.A.R. & H.; and since the Kilembe traffic and much moving to and from Congo was new to the main line, this procedure seems justified. The extension has therefore been economically viable, making an overall profit of about £200,000 in 1959 and in 1960, although these were changed to losses of £19,259 in 1961 and £95,932 in 1962, mainly because of much increased loan charges. The line is an asset rather than a liability to the Railway Administration, but there seems no prospect of the original investment being recovered in the form of operating profits, especially if Kilembe traffic should cease, and therefore its success must be judged in terms of its effects on economic development.

It is as yet too early to make more than an interim assessment of the effects of a railway opened between 1953 and 1956, but it should be noted that the highly optimistic forecasts made by the Economic Survey Committee were based on the years 1955 and 1960, and that if developments consequent on the construction of the line do not take place for some decades, the prospect of substantial losses in seven years' time lies ahead. The 1951 committee considered that 'the impact of the new line upon south-west

Uganda will be immeasurable'[28], and that 'perhaps the greatest contribution of this line to Uganda will be the opening up of spacious tracts of new country'[29]. These hopes have not so far been fulfilled. Even though little new development has taken place, the railway could have been of great value if the traffic already moving to and from western Uganda was carried more cheaply. It has been shown, however, that the level of traffic, other than that moving to or from Kilembe or Congo, has been far below even the estimates for 1950. It has not provided the main transport artery for the west, and little traffic has been transferred to it from the roads.

The results of the first few years of operation show a very different picture from that portrayed in the report of the Economic Survey Committee, and it is inevitable that this discussion will appear highly critical of that document. There were some serious errors and omissions in the argument presented in the report; these include the failure to note the effect of fixed country-wide prices for cotton and the very small volume of imports handled at minor stations elsewhere in Uganda even in 1950, and also the misleading comparison between rainfall conditions in the Katonga valley and those in northern Uganda. In other respects changed circumstances have led to the disappointing results, and the report erred only in its failure to anticipate these. Criticism on this score is perhaps unfair, although it would seem that many of the statements made were unduly dogmatic. The main change in circumstances is exemplified by the statement that 'the ultimate dependence of Ankole and Kigezi on this line cannot be overstressed, for there is likely to be little help from elsewhere in any future that can be foreseen'[30]. Help has been provided by the improvements in road transport, which now effectively competes with the railway for the traffic of the area. Reduced commodity prices on world markets have created further problems such as the impracticability of exporting Kilembe cobalt, and have contributed to the huge difference between the forecast of traffic development and that which has occurred. It must also be pointed out that certain recommendations of the committee have not been implemented, much the most important being the proposal for a major highway from Mbarara to Nkonge.

The improvement of road transport, and especially a reduction in its cost to the customer, has probably been the most important reason for the small impact of the railway. Another has been the structure of production and trade, for the extension is of little direct use to the peasant farmer or to the small trader. Cotton marketing is so organized that transport facilities for lint and seed do not affect the farmer, while groundnut marketing is so disorganized that the opportunities offered by the railway cannot be used. Where there are no established traders to provide marketing facilities there is nothing to attract prospective settlers, while traders show no interest in going to an almost uninhabited area; this is the situation which prevails along the greater part of the extension.

It is important to note that the forces limiting the role of the railway show no signs of weakening in most cases. A development such as the bitumenization of the Mbarara-Masaka road can only further weaken the

effects of the line, yet it is likely to be followed by improvement of the Fort Portal-Kampala road. It is most important, therefore, that official attention be given to these forces, and efforts made to overcome some of them, if the extension is to remain an asset rather than a liability in the event of production ceasing at Kilembe. The railway has been left to carve out its own role with little government intervention apart from the official direction of the routing of cotton and coffee traffic. At least as far as the central section is concerned, it is clear that although the railway eases one of the problems in the economic development of the surrounding country, it is not in itself a sufficient condition for such development, which can occur only if positive action in other directions is also taken. Experience to date suggests various steps which might be taken to increase its value to Uganda, while it is of considerable relevance to several issues involved in the extension to the north, which forms the subject of Chapter 6.

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THE JINJA-BUKONTE RAILWAY

THE second new railway to be built in Uganda since the 1930s was a short line from Jinja to Bukonte in Busoga District. Both points were on the old railway between Tororo and Kampala, but as a result of the piecemeal development of this rail route the existing line covered a distance of ninety-two miles, whereas the new line is only forty-two miles in length. It is therefore quite different in purpose from the western and northern extensions. Construction work began late in 1959 and the line was opened to traffic in mid-1961.

The Uganda Government had appointed a committee in 1957 to consider the question of shortening the main line through Uganda, and after examining the alternatives of a link between Jinja and Bukonte and one between Mbulamuti and Kampala, the committee approved the project now completed[1]. The most important factor influencing the decision to build a new line was the condition of the track between Tororo and Kampala, for in 1958 this was virtually worn out and could carry main line traffic for only a further five years. If a realignment of the route were to be undertaken this was the time to do it, for the capital cost of either new line would be partly off-set by a reduction of the figure of £1.12 million for replacing the old track. It was estimated that a new line from Bukonte to Jinja would cost £1.1 million* and one from Mbulamuti to Kampala £1.7 million, the cost of relaying the retained section of the old line being £0.45 million in either case. The extra cost of building the former line would therefore be about £430,000 and the latter about £1,030,000. The committee considered that the line through north-east Buganda would bring an annual saving in railway operating costs of only £70,000 at present traffic levels, and that no case could be made for it unless it were to encourage substantial local development. A much smaller outlay for a link through Busoga would bring an annual saving of £102,000, and this investment seemed amply justified. The decision was also influenced by the local feeling against relegating Jinja to a position on a branch line, and by the

*The cost was in fact about £1.5 million.

possibility that copper traffic on the Kampala-Jinja section might still have required expenditure on the track.

The effects of each line on the area through which it would pass were considered, in addition to those on through traffic. The Chief Agricultural Officer of Buganda was recorded as saying that a railway from Kampala to Mbulamuti would open up much new land for cultivation in north Kyaggwe and Bugerere, and that the line would carry much of the 40,000 tons of bananas now moved annually by road from these areas to Kampala[2]. The committee did not consider that the area was suffering from inadequate transport facilities, however, and noted the road improvements taking place there. As they stated, it is most unlikely that bananas would be moved by rail in view of the need for sales within forty-eight hours of picking, the transhipments required at each end of the rail journey, and the ready availability of return loads for lorries taking the crop to Kampala. No such produce is carried on the existing railway through east Mengo, and the experience of the western extension suggests that road transport is found more satisfactory for the collection of a surplus of food crops and their transport over about fifty miles to urban markets.

Neither railway could directly affect the cultivation of cotton or coffee, through the marketing systems in force, and this would have given added weight to the view expressed that 'the committee does not believe that the construction of either cut-off would be likely to have any substantial effect on the economic development of the area through which it would pass'[3]. Construction was undertaken largely in order to improve the rail service between Kampala and Tororo; but it is nevertheless worth while to consider whether the building of a new railway across Busoga has had any immediate consequences for the area.

The new line diverges from the old just outside Jinja station, and passes along the edge of Kakira sugar estate, and then through a relatively thickly settled and prosperous area of peasant farms for most of the distance to Bukonte. It passes the township of Iganga at about the half-way point, while the smaller township of Busembatia lies near the line five miles from Bukonte. Stations have been established at these two places, with a third at Magamaga, between Iganga and Jinja, although the last handles passengers and parcels only. At Busembatia 12,340 tons of freight were despatched and 3,743 tons received in 1963, while at Iganga 8,806 tons were despatched and 2,991 tons were received. The inwards traffic was notably higher than at most of the stations outside the largest towns (the bulk of that received at Busembatia being cotton seed for local oil mills), and the volume forwarded was also relatively high, for each station now serves a considerable area.

Cotton is much the most important source of income for most of the people of the area. In 1961 farmers in Busoga earned about £3,430,000 from cotton, £450,000 from groundnuts and £140,000 from coffee[4]. Some cotton lint has been diverted to Iganga and Busembatia from other stations, bringing a small saving to the Lint Marketing Board, but the grower has not been affected. Certain ginners have gained from a quicker shipment of

lint, and consequent earlier payment, but they have lost slightly through the reduction of their transport allowance from which most make a substantial profit. Groundnuts surplus to domestic requirements are sold to the Asian traders in the townships, and those in Iganga now use the local station for exports. They can pay the grower about 1 cent per lb. more than if a 20-mile road haul to a station were still necessary, but this is of small importance when other factors cause fluctuations between 30 cents and 50 cents per lb. at frequent intervals. Recently the railway has been used for local movements of maize and millet, and although flooded roads were the main reason for this the traffic may continue. The coffee must be sent to curing works in Mengo before it is exported, and while a factory within Busoga is planned, it is unlikely to be sited near the new railway. There is a valuable export of hides and skins from Busoga, and Iganga is the chief centre for this trade. Agents of the exporting firms buy the hides locally and send them to the collecting and bailing centre at Mbale. Almost all are sent by lorry or van although it is acknowledged that it would be cheaper to use the railway. The agents seem to be influenced more by habit and by convenience then by economy. The railway has been of no assistance to the sugar estate, for Magamaga is no nearer to the factory than Kakira station on the old line, while a private light railway runs to the latter. The best prospect for a new agricultural development might be sales of oranges to other districts or to Kenya, for large quantities now go to waste through inadequate marketing facilities. Entrepreneurs are needed to develop the trade, and although this could have been done in the past the railway could give a little extra encouragement.

The townships have been affected rather more than the rural areas. The traders of Busembatia have benefited from the replacement of Nsinze, four miles away, by a local station. The town was already sufficiently developed, and far enough from larger centres, for some goods to be obtained direct by rail from the producers or from Mombasa, and these are now obtained more conveniently than before. But the effects are too small to have been felt other than by the traders themselves. The provision of rail facilities has been of greater significance to Iganga, which is one of the oldest townships in Uganda and has long been the largest in Busoga (excluding Jinja Municipality) despite its distance from a railway until 1961. It had then 160 shops, many of them holding large stocks, and the volume of trade exceeds that in District headquarters such as Fort Portal or Gulu. Most bulky goods were formerly supplied through Nsinze station, from which they were brought nineteen miles by lorry for about 6/- a ton, while goods of higher value were generally obtained from Jinja. Today more commodities are ordered direct from the producer and importer, and costs have been reduced on any goods railed to Iganga station. Goods are liable to relatively little delay as the station is on the main line, and the traders can easily find out whether they have arrived. Iganga is, for example, one of the five stations in Uganda which receive supplies of milk from Kenya. Lower transport costs and reduced dependence on Jinja wholesalers have brought clear advantages to the Iganga traders, and in some cases prices to

the consumer have been lowered. As expected, however, the effects of the new railway have not brought any radical change in any aspect of the economic life of Busoga.

The construction of the cut-off was recommended by the 1957 committee on condition that the existing sections of the main line be kept open for local traffic. It is now considered, however, that they may have to be closed, for they are being operated at a substantial loss. It appears that insufficient development has occurred around the railway in this relatively prosperous part of Uganda in the past thirty years to support branch lines.

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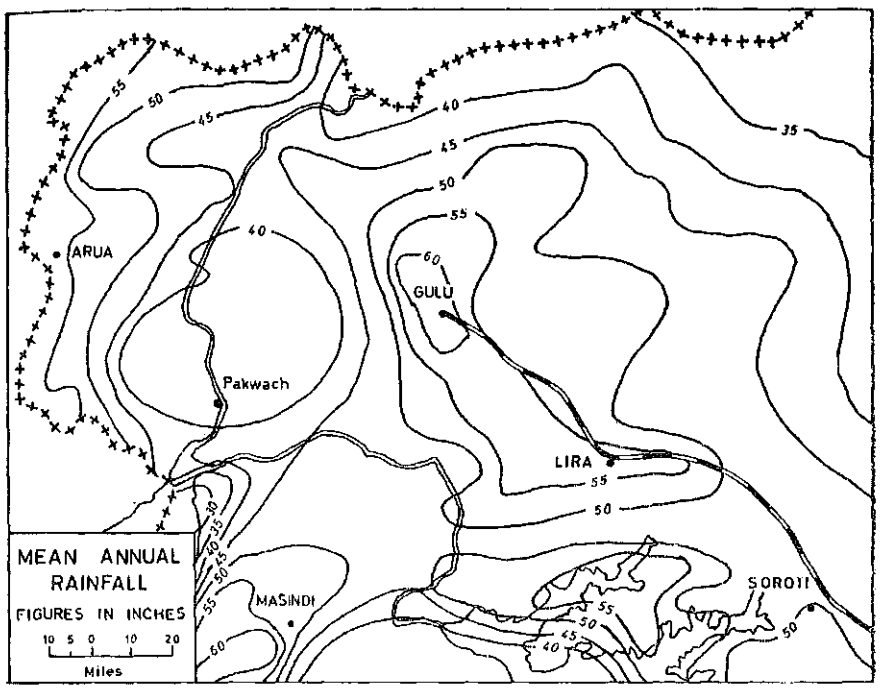
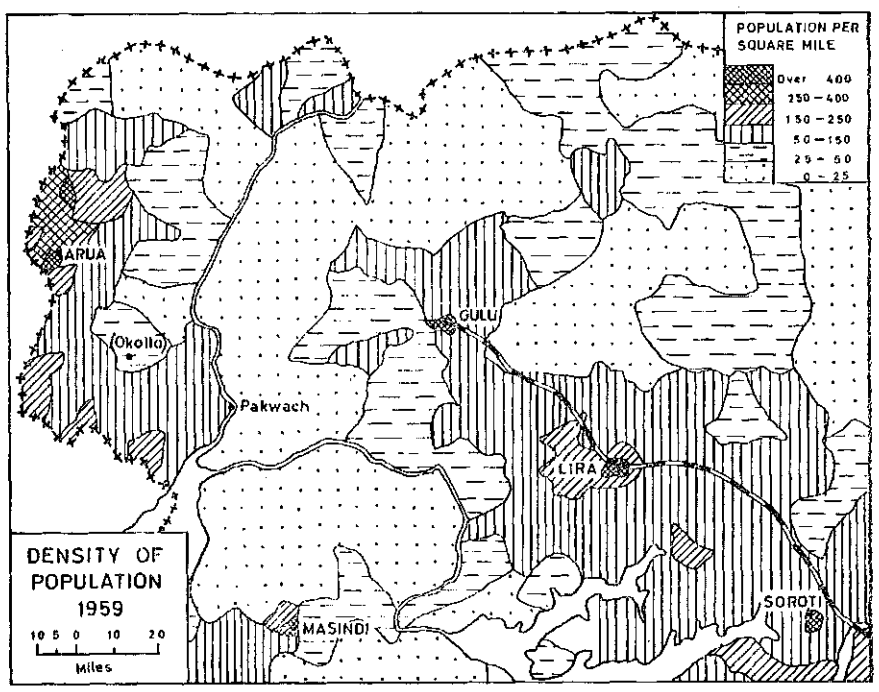
THE NORTHERN UGANDA EXTENSION

Background

UNTIL 1962 transport facilities in northern Uganda were confined to a network of roads and to the steamer services of E.A.R. & H. as shown on Map B, but in that year the first section of a northern extension of the railway was opened. The line, which forms a continuation of that from Tororo to Soroti, reached Aloi in January and Lira in July 1962, and was opened to Gulu early the following year. As indicated on Map C, the Lake Kyoga and Lake Albert services have now been withdrawn as the railway is intended to replace them. The line is being further extended from Gulu to Pakwach, on the Albert Nile, which should be reached early in 1964; and if sufficient finance can be found it is to be carried across the river into West Nile District.

The area served by the new railway comprises the three Districts of Lango, Acholi and West Nile. The first two are occupied almost entirely by the plateau surface standing 3,000 to 4,000 feet above sea level, and marked by few striking relief features. The climate differs from that in much of Uganda in that the rainfall is concentrated into a single wet season, rather than into two rainy periods as it is nearer the Equator. The annual total varies considerably over the area, as shown on Map 9, but it is everywhere adequate to support some form of agriculture. Throughout Lango and Acholi the soils are less productive than those of Buganda and most of Eastern and Western Regions, although they are rarely too poor to permit cultivation[1]. Most of the land in Lango supports a population of 50 to 100 per square mile, almost all dependent for their livelihood upon agriculture, but most of Acholi has a sparser population. The density is greatest around the chief town of each District. Lira and Gulu are similar in size and function to most District headquarters in Uganda; each has a population of about 4,000 and has about a hundred shops through which most of the trade of the District passes, but virtually no industrial activity. Urban development is almost entirely confined to these two towns, although a small centre at Kitgum serves eastern Acholi.





Maps 9 and 10. The northern railway and the surrounding area. Data taken from 'Atlas of Uganda', pp.15 and 35, by permission of the Commissioner of Lands and Surveys.

Among the Districts of Uganda, West Nile is the most remote from the dominant areas of economic activity. The eastern part is occupied by flat, dry country, little above 2,000 feet, through which the Nile flows. The remainder consists of higher country, with a cooler and wetter climate, extending to the Congo and Sudan borders. The lowland has a population density averaging 30 to 70 per square mile, but the highlands are much more heavily settled and densities rise to 268 in Maracha County and 324 in Ayivu County[2]. The District is generally considered to have fallen far behind most of the country in economic development, and the decision to continue the railway across the Nile results largely from a wish to incorporate West Nile more fully into Uganda both economically and politically[3]. Considerable changes have been taking place in recent years, however, and the local economy now includes a substantial cash sector. The lack of a tradition of cash crop production in the upland areas, together with the high population density, has encouraged many men to move elsewhere temporarily to seek employment; but income per head from cash crops grown within the District rose from 20/- in 1953–55 to 43/- in 1961, although it still stood well below the figure of 70/- for Uganda as a whole.

The possibility of building a railway following the route now adopted was first given official attention in 1926, but it was then considered that a line into Lango and Acholi was not justified in view of the facilities available on Lake Kyoga[4]. The branch leading north from Tororo was therefore terminated at Soroti. The project received little further attention until 1955, when the Uganda Government appointed a committee to enquire into the possibility of improving communications in the north. Their report[5] contained a thorough survey of the traffic prospects for a railway from Soroti to Gulu, which they considered was not then an economic proposition, but which might become one within a few years. The estimates of the cost of an extension were subsequently much reduced, and the Railway Administration therefore submitted the project to the government. Approval was given in April 1960, in the Legislatures of both Uganda and the East African High Commission for the 72-mile extension to Lira, and at the end of the year for the 62-mile continuation to Gulu. The final estimate of the cost of construction to Gulu was £1,360,000, whereas the 1955 committee based their recommendations on an original figure of £3,250,000. The difference resulted from a greater appreciation of the ease of the country to be traversed, and from the opportunity of using second-hand track from the Tanga line, which was due to be relaid with heavier track.

Various proposals had been made for a further extension beyond Gulu, although all were rejected for the foreseeable future by the 1955 committee. A railway leading northwards to the Sudan border is now unlikely to be built, but early in 1962 the Railway Administration and the Uganda Government set up a joint working party to study the economics of a line extending westwards to Pakwach, and possibly continuing into West Nile. It was not considered feasible to build a line to the District headquarters, at Arua, which lies in the uplands, but the working party was asked to examine the case for a line to Okollo, at the foot of the hills. They recommended

the construction of an 80-mile extension to the Nile at Pakwach, but doubted the wisdom of carrying it further[6]. However, the Uganda Government are anxious that the railway be taken into West Nile[7], and this was unanimously approved in the National Assembly in September 1962. More recently the extension of the line not merely to Okollo, but rather to Arua itself, has received serious consideration. Construction has continued without interruption beyond Gulu, and efforts are being made to seek funds for a bridge across the Nile. The cost of the railway from Gulu

TABLE 12

SOROTI—GULU EXTENSION

1960 Estimate of Freight Traffic

Exports (Tons)

	Achuna	Aloi	Lira	Alito	Opit	Gulu
Cotton Lint .	470	480	6,160	830	820	2,090
Cotton Seed ..	920	680	11,340	1,160	1,620	4,300
Hides			800			320
Tobacco						500
Empties ..		10	100			250
Other		20	500	20	20	400
	1,390	1,190	18,900	2,010	2,460	7,860
					Total apx.	34,000

Imports (Tons)

	Achuna and Aloi	Lira	Alito and Opit	Gulu
Maize flour ..		5,000		5,500
Cement		1,000		2,530
Sugar		2,080		1,350
Provisions ..		990		1,570
Govt. Stores ..		850		660
Beans		1,100		550
Hardware ..		530		630
Salt		510		450
Textiles		660		300
Timber		630		220
Ginnery Stores ..		490		320
Corrugated Iron		330		380
Other		900		730
	250	15,070	250	15,190
			Total excluding petroleum products apx.	31,000

Source of data: E.A.R. & H. files, Kampala and Nairobi.

to Pakwach is estimated at £510,000, and that of a bridge 300 yards long, carrying both the railway and a road, at £550,000. If the railway is taken on to Okollo or Arua, the steamer service on the Albert Nile will be withdrawn.*

The Northern Communications report included estimates of freight traffic amounting to 29,400 tons southwards and 22,250 tons northwards if the railway had been operating to Gulu in 1954, on the basis of the volume of goods moving by steamer or by road in that year. The decision to proceed with the line was based on revised figures of 34,000 tons southwards and 31,000 tons northwards, the increase being largely due to development since 1954 (Table 12). In neither case was any figure for West Nile traffic included. The annual revenue from freight, based on these latter figures, was estimated at £80,000, compared with operating costs of £91,000 and interest charges and renewals fund contributions amounting to £105,000[8]. Revenue from passenger and livestock traffic normally just covers the costs of movement. The results would not have appeared as a loss for the extension, however, as it would receive a credit of about £170,000 for traffic passing along the main line, even if none of this were new traffic produced by the branch.

Since the decision to proceed was taken the financial basis has altered. The traffic estimates for the whole length from Soroti to Pakwach are higher since the West Nile traffic is included (Table 13), but the operating costs are also higher, and current revenue and expenditure seem likely to balance roughly at first. The main change is that the railway is to be financed from the renewals fund accumulated in respect of the steamer services,

TABLE 13

SOROTI—PAKWACH EXTENSION

1962 Estimate of Freight Traffic

Exports	Tons	*Imports*	Tons
Achuna—Gulu	34,000	Achuna—Gulu	31,000
Pakwach:—		Pakwach:—	
Cotton Lint	2,900	Cement	1,200
Cotton Seed	6,000	Salt	900
Oilseeds	200	Sugar	700
Hides	200	Fertilizer	300
Other Produce ..	100	Gunny Bags	200
Congo Traffic ..	1,600	Others	400
	11,000	Congo Traffic ..	1,700
			5,400
Total	45,000	Total	36,400

Source of data: E.A.R. & H. files, Nairobi.

*Although no decision on a further extension has yet been taken, the river service has been withdrawn and replaced by a road service, as shown on Maps B and C.

since these are being withdrawn. If the £1,600,000 available from this fund is used, almost no interest charges need to be debited to the new extension. In this case the pretence that full main line credits are justified can be dropped, as it must be when it is so clearly acknowledged that the railway is primarily a replacement of an existing service, which received no such credits.

The revenue estimates noted above were based on separate charges being made for movement over the old line and over the new extension, as has been the policy in the west. Goods moving to or from the coast would thus be charged much more for a 100-mile haul on the new line than for the 100-miles between Soroti and Tororo. There seems little justification for this policy in the west; in the north there would have been even less, for tapered rates were applied throughout the former services in the area, and an anomalous situation would have arisen where part of what now constitutes a single branch leading north from Tororo was treated in one way and part in another. In fact through rates are being charged, with no break of taper at Soroti, so the line must be expected to make a small loss at first; but since an annual loss of £107,000 was incurred on the existing services between Namasagali and Pakwach[9], the gain to E.A.R. & H., and to the public at large, from their replacement by the railway is clear. The financial implications of the proposal to extend the line across the Nile will be examined later.

The Northern Railway in the Economic Geography of Lango and Acholi

Agriculture

The cultivation of food crops to meet local requirements accounts for a greater proportion of all economic activity in Lango and Acholi than in most parts of Uganda, and the provision of improved transport facilities is unlikely to have much effect on the pattern of subsistence cultivation. Since supplementary supplies of millet, maize or maize flour could now be imported more conveniently than by steamer and more cheaply than by road, the acreage planted with food crops could decrease, but no startling changes are expected since they have not occurred anywhere else in Uganda. There are no differences between the pattern of subsistence cultivation in Lango and that in Teso which could be attributed to the railway passing through the latter. The direct effects of the railway must be felt mainly within the commercial rather than the subsistence sector of the local economy.

Cotton provides almost the only source of cash income for most people in Lango and Acholi, and it accounts for over 90% of the value of agricultural exports from these Districts. In Lango the area planted has fluctuated around 200,000 acres in recent years; in Acholi the figure has risen from 90,000 acres in 1955 to 160,000 in 1962. Shipments of lint from the fifteen ginneries in these Districts via the Lake Kyoga and Nile ports amounted in 1961 to 12,500 tons, while 22,000 tons of cotton seed were despatched to oil mills through these ports or through the Soroti railhead. All this traffic has now been diverted, for in 1963 every ginnery used a station on

the new railway. A shorter road haul is now required for most ginneries, and from all except two the transport costs on lint are lower by the new route: but the long haul via Tororo involves a substantially higher charge on cotton seed from some ginneries, as most is still sent to the Busoga oil mills. The overall effect of the railway is to reduce very slightly the costs borne by the Lint Marketing Board, but as pointed out in Chapter 2 the producers in the north benefit from this no more than those anywhere else. The railway provides a quicker transit for lint and seed, for the steamer service was infrequent, and was subject to delays at times of low water, which generally coincided with the cotton season. This may assist the ginners financially, for most work on an overdraft until their lint has been sold; but even this cannot affect cotton production as long as the farmers receive the uniform fixed price for the country. If the industry were decontrolled the railway might have significant local effects, apart from any influence on production in the north as a whole, but with the existing marketing structure farmers near the line enjoy no advantage over those many miles away.

The only other crop grown mainly for cash in this area is tobacco. Cultivation is confined almost entirely to the part of Acholi within twenty-five miles of Gulu, from where 150 to 200 tons of cured leaf are sent annually to the Kampala re-drying plant. The railway is now being used for this traffic, but it is no cheaper than road haulage, and the tobacco company has found that it brings no significant advantage. The extension would provide a convenient route for the direct movement of tobacco to the Nairobi cigarette factory, but the whole crop is to pass through Kampala for the foreseeable future, and the growers cannot therefore be affected by the new line. The Minister of Commerce and Industry seems to have been over-optimistic when he declared 'I am certain that tobacco production will receive a stimulus'[10] from the northern railway. Large areas of Lango and Acholi are suitable for the crop, and the desire to grow more already exists, but the acreage has had to be limited because the East African market can at present absorb no increase in production. The railway could only assist a spread of tobacco cultivation if export markets could be found, and for the present quality of product this has proved impossible.

It was stated in the last District Plan for Lango that 'efforts should be made to develop the marketing of crops other than cotton' and that 'the biggest single factor in this development will be the opening of a railway in Lango'[11]. The crops concerned are those which are already grown for local food supplies, and the best market prospects are for groundnuts. The railway would assist shipments to Mombasa, and may encourage the improvement of local marketing arrangements, so that a higher price might be offered to the grower. No immediate expansion of the acreage planted should be expected, however, for there seems to be little popular enthusiasm for the crop, most people preferring to put any land not required for food under cotton, which brings a higher return and demands much less effort. The same applies to most other food crops also. There has certainly been no surplus agricultural production in Lango, waiting only for rail transport to enable it to reach a market, for Aloi and Lira stations handled no agricul-

tural products other than cotton lint and seed in the first year of operation. As suggested in the Northern Communications report, 'past increases in the production of food crops have closely followed the growth of the population, and it is unlikely that any large surpluses will become available for export in the early future'[12]. It is very doubtful whether the railway will encourage the cultivation of food crops specifically for sale in either Lango or Acholi, when both cotton and tobacco yield a substantially higher return.

There are several factors apart from transport facilities which limit the scope for cash crop production in these Districts, compared with those further south. Although most of the area through which the railway passes has a rainfall of about 50 inches a year, this is concentrated in an eight-month period, and the four-month dry season prevents both the cultivation of such perennial crops as coffee, and the taking of two annual crops within one year from the same land. And as mentioned earlier, the soils of northern Uganda are of considerably lower fertility than those of the zone around Lake Victoria. Specific mention should perhaps be made of the part ofAcholi around the last forty miles of the extension from Gulu to Pakwach, where there is no agricultural production whatever at present. There is in fact no prospect of this area being brought under cultivation, for it is dry, tsetse-infested, and almost uninhabited, and has been devoted to a game sanctuary and National Park. Social problems also create difficulties in the north, one example being the strong objection of the bulk of the people to the advancement of the more enterprising individual: this is a much more common characteristic among the Acholi people, for example, than among the Baganda.

The railway may affect agriculture indirectly by helping to reduce social barriers to development. Early in 1962 the people living around Aloi seemed very interested in the prospect of a passenger service, and if they travel more they may bring new ideas to their home area. Any effects of the line in increasing the tempo of economic life in any other field would have repercussions upon agriculture. But there is ample evidence to support the view that 'a northern extension of the railway would of itself be unlikely to have any early or direct effect on agricultural production within Northern Province'[13].

Livestock

Large parts of Lango and eastern Acholi are among the most suitable areas in Uganda for cattle rearing, although as yet much of the potential remains undeveloped. Holding grounds and loading facilities have been provided at Aloi, Lira and Opit stations, for it is hoped that the railway will assist a substantial export trade in cattle.

In Acholi the cattle population is very low and exports almost non-existent, mainly due to the high incidence of disease. Trypanosomiasis and rinderpest reduced the numbers from over 100,000 in 1940 to under 50,000 in 1944, and although they have since risen to 140,000 this is still a

smaller figure in relation to the population of the District than the average for Uganda. There is therefore no surplus available for sale to other areas. Most of the land is now free of tsetse-fly, and there is scope for a considerable expansion of herds, while if the fly frontier is driven further back in future far more grazing land will become available. But the veterinary officers in Acholi describe the prevailing attitudes to improved methods of animal husbandry as 'ranging only from apathy to active non-co-operation', and the chances of any rapid development of stock-rearing for profit are very slight. The railway will provide Acholi with a far better opportunity for exports of cattle, but until the numbers are substantially increased it is unlikely that the facilities will be much used.

Lango District had 374,000 head of cattle in 1962, and this should permit exports of at least 20,000 head a year after local meat requirements have been satisfied. Until 1962 about 14,000 head a year were exported to Buganda, Busoga and Bunyoro, all passing through Kelle, Namasale and Atura. For the south-western parts of Lango the rail route via Tororo is considerably more costly than that across Lake Kyoga, and although Kelle Port has been abandoned by E.A.R. & H., a private concern now moves cattle from there to Busoga and Buganda. Maruzi County, which borders on the Nile, has in fact few cattle, for part of it suffers from tsetse infestation, and the greatest numbers in Lango are found in Moroto and Eruti Counties in the north-east. Routes across the Nile and Lake Kyoga are therefore not very convenient for the District as a whole. The railway reduces the distance that most animals have to be walked, and should reduce the overall costs of transport to the consuming areas, even though the rail charge is higher than that from Kelle; and it may also bring more buyers to the local markets. In both ways the railway may help to bring higher prices to the cattle owners, and this may lead to increased sales from the District.

Teso, the leading exporting District in Uganda, is also slightly affected by the new railway, for the north-west of the District has benefited from the provision of rail facilities at Achuna. Both in Amuria County of Teso, and in much of Lango the new railway eases one of the problems facing the cattle industry, and although many others remain, Veterinary Department officials anticipate a marked increase of exports within a short period.

Hides are the third export from Lango and Acholi in terms of value, but the volume moved amounted to only 180 tons in 1962. All are despatched by road to the exporters' depots at Mbale, from where they are railed to the coast. It is as yet uncertain whether the railway will be used for this traffic in the near future, for the hides will continue to be inspected and baled at Mbale, and any savings resulting from the use of rail transport would be off-set by the extra handling required and the loss of personal contact between the depots and the agents in the north. Even if the railway enabled a slightly higher price to be paid to the producer, this could not have any significant effect on production, especially since hides are a by-product of slaughter for meat.

INDUSTRY

Industry in Lango and Acholi is largely confined to the processing of the cotton and tobacco crops. Neither District has much to offer the potential entrepreneur, for there is no abundance of raw materials, and the local market for manufactured goods is very small. The railway could bring in raw materials or move manufactures to markets elsewhere; but it seems equally likely to be a factor discouraging local industry by helping factories already established in other areas to supply markets in the north. This might apply to brick-making, or to maize milling which takes place in many Uganda towns but not in Lira or Gulu.

One raw material which is locally abundant is cotton seed, and the establishment of oil milling in the north has been the subject of much discussion. Around 1950 a small mill functioned in Gulu, but competition from the large Busoga concerns forced it to close. The transport factor should encourage the industry in the north, for cotton seed is now taken to Jinja and Kakira and vegetable oil is brought in the reverse direction; but as long as the Lint Marketing Board pays all cotton seed transport costs, there is little incentive to establish the industry in the north, irrespective of whether rail facilities are available. If the present policy were abandoned the incentive would increase, but to a lesser extent now that the railway has been built, for it serves to strengthen the position of the Busoga mills. The main value of the railway would be for the export of cattle cake, but this could have taken place via Lake Kyoga, and the somewhat greater convenience of the rail route can only very slightly increase the attractions of oil milling in the north.

At some future time industries which use the railway for supplying their products to distant markets may be established in Lira or Gulu, but no prospect of this is in sight.

IMPORT TRADE

By 1960 little use was being made of the lake services for imports into Lango and Acholi, for almost all goods were brought by road from Soroti railhead, from wholesalers in the larger towns or direct from the point of production. Some of this traffic has transferred to the new railway, but the competition from road transport is much stronger than in the case of exports. Almost all imported goods pass through the shops of Lira and Gulu, apart from those sold by travelling wholesalers, but goods received at Lira and Gulu stations in mid-1963 amounted to only 400 to 600 tons a month. It seems quite possible that the figures will rise to those forecasted, but the traders of these towns show no great interest in the new facilities available to them. No goods are received at the small stations such as Aloi, Opit and Otwal, apart from stores for local cotton ginneries, and it is most unlikely that local trade will be sufficiently developed for goods to be ordered from distant places in full waggon loads for many years to come.

TABLE 14

NORTHERN REGION: PETROL PRICES

Means of transport used	Retail price per gallon at: Lira	Gulu	Arua
Road transport from Soroti or Mbale	4/85	4/98	5/28
Rail to depots at Gulu	4/85	4/79	5/09
Rail to depots at Lira, Gulu and Pakwach	4/75	4/79	4/99

Based on road transport at the 1963 prevailing rate of 45 cents per ton-mile.

Petroleum products are the supplies of which the largest volume is brought into the area, and they are of particular significance since their cost has a bearing on many other economic activities. In 1961 about 1,770 tons were supplied to Lango and 2,510 tons sent to Acholi by road from the bulk storage depots at Mbale and Soroti[14]. The lake services carried virtually no oil products for several years because of the disadvantages of handling them in drums compared with bulk distribution in tankers, and the new railway will only be used if bulk handling depots are established somewhere along the line. As shown in Table 14, the most efficient and economical pattern of distribution would be achieved by the construction of one depot at Lira, one at Gulu and perhaps one in West Nile, the company operating each permitting its use, at a charge, by the other companies. The railway rates are lower than those charged for road haulage in this area, and it would be advantageous for all petrol and oil to move by rail as near as possible to its destination. However, the structure of the industry hinders the development of such a pattern. Competition has produced a situation in which if one company establishes a depot at Gulu others feel obliged to do likewise, even though the construction of two or more depots at any place in Northern Region would clearly be uneconomic, as it is at Kasese. As a result of this situation, no company had made firm plans to establish a depot by the end of 1963.

It was suggested in the Northern Communications report that a railway 'would facilitate the establishment of wholesale facilities and the movement of trade goods into and within the area, creating a consumer demand which is at present largely lacking, and which would in turn lead to a more intensive cultivation of economic crops'[15]. Since the report was written, however, a substantial development of trade has taken place in the northern towns on the basis of road transport, and it is doubtful whether there has recently been any serious shortage of consumer goods in the area. The railway has brought in no new goods, and there has been no immediate reduction in the retail prices of the goods now supplied by rail. It is being used mainly for low-value imports from Kenya or overseas, such as salt and flour, which until 1962 were railed to Soroti station and brought from there by road. The direct rail haul to Lira or Gulu is cheaper and more convenient, but it may be some time before any benefit is passed on to the consumers. Higher value imports, such as cloth, have most often been obtained from wholesalers in Kampala, Mbale or Soroti, or from the lorries

sent to Lango and Acholi by these wholesalers: with a direct rail connection from Mombasa, traders have a stronger incentive to order goods in bulk from there, but this change is likely to take place only slowly. For these goods the saving from the use of rail transport is insignificant, but that resulting from avoiding middlemen in the larger towns could be considerable.

The railway has at first been used very little to supply goods produced within Uganda, and its likely role in this respect is most uncertain. Almost all the sugar sent to Lango and Acholi in 1957 was moved via Lake Kyoga, but by 1960 none was passing by this route despite the quotation of reduced rates. By offering to carry sugar from the estates to both Lira and Gulu at only 2/- per 100 lb. road transporters had captured the whole of the traffic. The normal rate on the new railway from Kakira to Lira would be 3/61, but a special rate of 1/84 has been quoted, and over half the sugar supplied to Lango now moves by rail. It is clear, however, that even if the price of sugar were not controlled, rail transport could not bring any reduction in it. A rate of 2/27 has not encouraged the use of the railway for shipments to Gulu, especially as road transport is also quicker, and regular loads on the railway cannot be expected. Road hauliers also offer very low rates for movements of cement from Tororo, but in this case rail rates are even lower to both Lira and Gulu. Bulk loads are now being obtained by rail, therefore, but the saving is not sufficient to make any difference to the retail price of cement in the north. Many other commodities continue to be supplied exclusively by road, and this is likely to continue in such cases as vegetable oil or beer and soft drinks.

The railway may prove useful for the import of foodstuffs, for the volume of maize meal brought into Lango and Acholi in recent years has ranged from 3,000 to 10,000 tons, and the rail rate on this commodity, and on others such as beans, is very low. Some maize meal has in fact been handled on the line during the first year of operation. The differences between the pattern of the seasons in the north and that elsewhere in Uganda could encourage such trade. There is often a substantial difference between prices in Gulu and those in Mbale or Jinja, and since direct rail hauls at low rates can be offered between these places trade should expand. Theoretically it would be possible for farmers in Lango and Acholi to concentrate more attention on cash crops and to make up any deficiency in food supplies by imports, but this would demand great social changes in view of such considerations as the customary division of labour between men growing cash crops and women attending to food crops, and there would have to be a change in the official policy of encouraging local self-sufficiency in food as well as a radical improvement in marketing arrangements. These changes may take place in due course, but no such revolution in the local economy is likely as a consequence of the opening of the railway.

Sudan Traffic

Some traffic moving to and from southern Sudan may behandled at Gulu, for the border lies only sixty-eight miles away by an all-weather road. For many years the Albert Nile steamers have operated as far as Nimule, just

over the border, but the freight traffic on this route has been very small. In 1960, 122 tons were shipped to Nimule, chiefly tea and coffee, while only 3 tons were collected from there. Most of the trade between Uganda and Sudan takes place via Mombasa and Port Sudan, since this route is both cheaper and more reliable than that through Nimule for movements from Kampala to the Khartoum area; such movements accounted for virtually all the 6,000 tons of goods passing between the two countries in 1962. Several industrial concerns in Uganda and Kenya have shown some interest in the overland route for exports to Sudan, and both for these exports and for the existing coffee and tea trade the railway to Gulu could provide a route that is cheaper than a road haul from Soroti and quicker and safer than the river journey to Nimule. But no Sudan traffic was handled during the first few months at Gulu, and it is doubtful whether large tonnages will cross Uganda and Sudan by this route in the near future.

It is for trade with the Equatoria Province of Sudan that the railway to Gulu offers real advantage, for it could be used for most of the exports and imports of that area. But the Province is extremely underdeveloped, exports being confined to small quantities of cotton and hides, and plans for the area are aimed at integrating it more closely into the Sudan economy, with an increase of food production for sale to areas further north rather than of exports. The volume of imports is at present very small, and these are supplied entirely from the north. The re-exports of oil from Uganda to Congo suggest the possibility of a similar movement to southern Sudan, but the cost of transport from Mombasa to Juba is expected to be very similar to that from Port Sudan, and other factors favour the latter route. Sudan Railways have provided special barges for carrying oil up the Nile, and the government wish these to be used; and an oil refinery at Port Sudan, which will probably be guaranteed the whole Sudan market, is under construction.

In contrast to the situation in Congo, internal communications in Sudan are being greatly improved, and a new railway is being built towards the south. The effect of this could only be to discourage further the routing of southern Sudan exports and imports through Uganda. The concentration of economic activity in both Uganda and Sudan in areas far from their common border is perhaps the main reason why any rapid development of trade across this border is unlikely. There is thus little reason to expect that Gulu will develop an important function as a centre for trade with Sudan, or even for the transhipment of transit traffic, in the near future as a result of the extension of the railway.

The Northern Railway in the Economic Geography of West Nile

Agriculture

Cotton is much the most important cash crop in West Nile, most being grown in the low, hot country in the east. Production of seed cotton has risen rapidly in recent years—from 4,500 tons in 1953 to 12,990 tons in 1961.

The whole crop was then handled by a single ginnery at Rhino Camp, but a second was built in 1962 at Pakwach, and a third is planned for Laropi to the north. The railway from Pakwach will certainly carry a substantial volume of cotton traffic from West Nile, but it is unlikely to have any more direct effect upon production than in Lango and Acholi. The charge for moving lint from Pakwach to Mombasa will fall only from 6/66 to 6/56 per 100 lb., while the costs of movement from Rhino Camp must rise if the railway is extended to Okollo and the river service is closed. The charge for moving the larger volume of cotton seed to the Busoga oil mills will be greater than by the old route. The 1962 working party assumed that the seed would be diverted to mills in Soroti and Mbale[16], but under the present auction system this cannot be expected. Much seed from Teso is sent to Kakira rather than local mills, and the same will apply to the seed brought from West Nile unless efforts are made to alter the system. As all transport charges are met by the Lint Marketing Board they are of no more concern to the ginner and grower than elsewhere in Uganda. The ginneries should profit slightly from the quicker despatch of lint and seed which the railway should make possible, and this should benefit the growers since the whole crop is ginned by the West Nile Co-operative Union. But until the severe floods of 1962 the disposal of lint and seed had not been much hampered by the limitations of the river service. The railway should prove considerably more satisfactory for moving the much increased crop which is expected in the future, and this alone may justify the extension to the Nile; but the expansion has been taking place for several years, and if this continues the railway cannot be considered to be the stimulus for it.

Tobacco is the second cash crop, and is the main source of income in the area above 4,000 feet. In contrast to cotton, production has not increased significantly in recent years, and the railway is unlikely to bring any immediate change in this respect. The crop is now normally sent to Kampala by road, and although it was railed from Soroti during the 1962 floods, the tobacco company shows little interest in using rail transport now that road communications with Kampala have been restored and improved. Even when the railway reaches the Nile, the rail charge would be as high as that for the shorter road haul unless special rates were quoted, while movement by road would be quicker and would involve less handling of the leaf. The present charge for movements from Arua to Kampala is 200/- per ton, and the cost using rail transport from Pakwach would be about the same at standard rates. The position is very similar to that in Acholi in that the railway could be of real value only for direct shipments to Nairobi or for direct overseas exports, neither of which is anticipated in the immediate future. The tobacco company is much more concerned to make full use of its Kampala re-drying plant, than to save four or five cents per lb. on the transport of tobacco worth over 2/50 per lb.

Coffee cultivation has begun recently in the uplands, and 171 tons of *arabica* were produced in 1961, all of which was sent by road to Kampala for processing. The railway might handle this traffic, but it could perform a more useful function by moving the coffee to Mbale for curing if terms

could be agreed with the Bugisu Co-operative Union. It could not directly affect production, however, since the Coffee Marketing Board has recently started to pay the transport costs for West Nile *arabica*. If production increases at the present rate a local curing works may be established, and the railway may lead to more official encouragement for such a project, even though it would not increase the advantages of curing locally rather than in Mbale. If the works were a co-operative concern the planting of more coffee might then result.

Attention is being given to the possibility of establishing tea production in the District, although only the extreme south-west offers suitable physical conditions. The railway would be useful for the export of tea, but it has not been a factor affecting the proposals for an estate, which could be developed on the basis of road transport here as elsewhere in Uganda.

The limited importance of the extension for each of these relatively high-value crops is sometimes acknowledged, but it is often suggested that it will stimulate the production of 'other' crops. Much less often are these crops specified. Groundnuts grow extremely well in the uplands, but cultivation takes place only on a subsistence basis. The railway could provide a more satisfactory outlet for any future surplus production, but the cost of transport to distant markets would be no lower than via the steamer service, and it is doubtful whether the local price could be high enough to induce the effort required to produce groundnuts as a major cash crop. The position is similar in the case of several other crops: sunflower has been produced as a cash crop in West Nile, but as noted in the Northern Communications report, 'this crop is not a particularly remunerative one and we see little prospect of any large increase of its popularity with growers'[17].

The river service has been of little value for the sale of food crops to other Districts, since prices fluctuate from day to day and traders will not accept the risks involved in a delay of weeks between their despatch of produce and its arrival at the destination. The railway could be of more value in this respect, for it should be able to move produce with reasonable speed, while for low-value foodstuffs the rates charged will be well below those for road transport, particularly to Eastern Region and even to Buganda. The rate for most food crops between Pakwach and Mbale will be about 1/70 per 100 lb., compared with about 6/- by road. Development of such trade would require a change in official policy, which has been to discourage the export of food crops, and a radical improvement in local marketing facilities. The rail extension will provide new opportunities for such trade, as well as for the import of foodstuffs considered earlier for Lango and Acholi, but many other factors will determine whether or not these are used: it seems unlikely that any substantial trade in either direction will develop unless positive steps are taken to encourage it.

A memorandum to the Agency for International Development requesting aid for the projected bridge at Pakwach[18] argued that as the two successful cash crops in West Nile were those for which transport costs are of little significance, it can be inferred that transport costs are a major factor hinder-

ing other agricultural activities. Yet even in a District as well provided with transport facilities as Bukedi cotton is virtually the only cash crop, and it cannot be assumed that the railway will necessarily widen the range of cash crops produced in West Nile.

Other Activities

The number of cattle in West Nile is just about adequate to satisfy the effective demand for meat within the District, and no substantial movement of stock on the railway can be expected in either direction. The line is thus unlikely to have any direct effect on cattle rearing. The Forest Department estimate that 1,500 tons of millable thinnings could be produced from Forest Reserves in West Nile by 1972, and this figure was included in the traffic forecast for the Pakwach extension[19]. Some will be required for local use, however, and although the railway should improve the chances of establishing exports to places between Gulu and Mbale, it should be noted that road transport is now used in preference to rail for the movement of timber over a similar distance from Busoga to Soroti.

The extension to Pakwach could be of some significance for the fishing industry on Lake Albert. Most of the catch is taken in the northern part of the lake, and Pakwach could easily become an important landing point. The local demand is rather limited and until recently the main market was in Congo. This trade was severely hit by the political upheavals of 1960 and an alternative market for some fish was found in Gulu, to which 2,500 tons were sent the following year. Most was taken by bus at a cost of 10 cents per lb., whereas the rail charge even for small loads would be little over 1 cent. By the time the railway is open, however, the dealers may have organized lorry transport, by which costs could be reduced almost as much. The particular value of the railway might be for sales in Lango, Teso and the Mbale area, where the demand for fish is not adequately met from Lakes Kyoga and Victoria. The fish resources of Lake Albert could support greatly expanded production, and this is one case in which the railway could be of direct assistance in economic development, since restricted markets seem to have been one factor limiting production. But the line can only provide the opportunity for increased sales; the initiative for seizing the opportunity rests with the fishmongers and the fishermen, perhaps with government assistance. The extension may encourage consideration of the possibility of a filleting and freezing plant near Pakwach, even though such a development could have taken place without a railway.

The prospects for any industrial development in West Nile are even more remote than in Lango and Acholi, and as in those Districts no mineral deposits of any importance are known.

Imports

In recent years the total volume of imports into West Nile has been similar to that of exports, roughly half arriving by road and half by steamer. A large proportion passes through the shops of the chief town, Arua, and is re-distributed from there. Oil products are brought by road tankers

from Mbale, Soroti and Kampala, but if bulk depots are built at Gulu they would then supply West Nile, and a reduction in the local price of petrol and oil should result. The effect would be even greater if any bulk depots were established within West Nile, but this will probably not occur in the immediate future unless there is a rapid expansion of re-exports to Congo. The annual consumption of about 1,500 tons of petrol and diesel fuel within West Nile would not justify one depot, even if there were no fear that competition would bring others.

Most other supplies are obtained from Kampala, and the rail extension from Soroti could be of great value for imports only if there were a substantial re-orientation of trade. The road from Gulu to Pakwach was completed only in 1950, and the traditional supply route for West Nile has been by steamer from the south. Although this has been partly replaced by road transport, the old trading links remain, and while few goods are sent from Kampala to Gulu, many move from Kampala via Gulu to West Nile. This pattern of trade may remain for many years, at least for some commodities, but it is also possible that some change will follow the extension of the railway. If wholesale trade expands in Gulu more goods might be obtained from there, but traders in West Nile show little interest in this idea since the facilities in Gulu are now no better than those in Arua, and Kampala must remain a more attractive centre in the foreseeable future. The new railway will be of the greatest value if it encourages West Nile traders to order goods in bulk direct from the coast, for they should then be available to the consumers at lower prices. This process would require considerable initiative on the part of the traders, however, and will probably be slower than in Lango and Acholi unless the railway were to reach the town where the largest stores are established. Cement and sugar are the most bulky items imported from other parts of Uganda. The former was the commodity received in largest quantities at Rhino Camp in 1960, and the railway should be used for this traffic in future; but the costs of transport from Tororo will not be substantially reduced unless special rates are quoted. The line may also bring supplies of sugar, but its local price cannot be affected since this is fixed on the basis of the rail charge from Jinja, and this will be no lower than for the haul to Rhino Camp.

Congo Traffic

During the 1950s the Lake Albert steamers carried about 12,000 tons a year of transit traffic to and from the Congo ports of Mahagi and Kasenyi, the former serving primarily the Kilo Moto gold mines, and the latter providing one outlet for the Bunia area. These ports were very badly hit by the disturbances following Congo independence in 1960, when trade came to a standstill. Any revival was prevented after the 1962 floods by exceptionally high lake levels, and the service will not be resumed before the railway to Pakwach takes over its function. During 1962 transit traffic through the Soroti railhead developed for the first time. Coffee was brought from Bunia and Stanleyville, and tins of kerosene were taken back in return, while tanker lorries supplied oil products from the local depot. By 1963,

however, the trade had slackened considerably, and little Congo traffic was handled in that year at either Lira or Gulu.

If the demand for transport across northern Uganda revives, Congo traffic could contribute substantially to the revenues of the extension, while the railway can be expected to increase the attractiveness of the route since the rates charged would be considerably lower than those paid when a road haul to and from Soroti is involved. Special rates for transit traffic, similar to those applied on the western extension, will probably be quoted. On account of political discord within Congo, the route through West Nile has at times been better able to attract the traffic of Orientale Province than that through Kasese, since the latter involves passing through part of Kivu Province. Apart from this consideration Pakwach offers no advantage over Kasese as a possible railhead for Stanleyville, but Pakwach is better placed to serve the extreme north-east of Congo.

Congo traffic on the northern extension must inevitably include some captured from the western line, but will probably also include some that would otherwise have moved via Matadi, and possibly some that would not have moved at all. This traffic could be of great value to E.A.R. & H.: and it might benefit the economy of West Nile, especially if purchases are made locally to make up return loads for lorries bringing Congo exports, although experience at Kasese does not give rise to optimism in this respect. Congo traffic may be of great importance in the future, but wisely no assumptions about this have been made, and it has therefore not contributed to the economy of Northern Uganda by making the rail extension possible.

The Terminus of the Line

The Uganda Government has proposed that the line should be taken at least as far as Okollo, forty-five miles from Pakwach and thirty-eight miles from Arua on the main road between the two, despite the conclusion of the 1962 working party that an extension beyond the Nile was not economically justified. Rhino Camp and Mutir had earlier been considered as possible termini, but each had been rejected. The former would have been the most convenient for the existing West Nile traffic, but the physical problems of a steep descent to the valley floor and a wide river and swamp crossing were too great. The latter was related to a proposed dam across the Nile at Mutir, and this project has now been shelved. (The possibility of its being revived sometime has serious implications for the proposed Pakwach bridge, for this would be submerged if a dam were built). At Pakwach the descent to the river is relatively gentle, and there is a suitable site for an east bank terminus with only a 300-yard river crossing; this is also a satisfactory point for bridging the river, whether in the near or the distant future. In addition, Pakwach is well placed to serve as a railhead for Congo.

The choice of terminus now lies between the east bank of the Nile, the west bank, Okollo and Arua. There is no doubt that West Nile would benefit from the building of a bridge, and from a further extension of the railway: uncertainty arises only about whether the benefit would be sufficient

to justify the cost of such undertakings. The working party considered the question mainly from the angles of estimated traffic and advantage to the Railway Administration, but an examination from the viewpoint of the effects on economic activities in West Nile leads to the same conclusions as theirs.

Cotton must be the chief source of income in the District in the foreseeable future, and an extension to Okollo would seem to offer no advantage for cotton production. At least one-third of the crop is now being ginned at Pakwach, and a rail extension to Okollo could not affect shipments from this ginnery. The working party assumed that 2,000 tons of seed cotton might be moved annually from Okollo to Pakwach ginnery, but since no more than ten tons a year of seed cotton have moved by rail to any other ginnery in Uganda, this seems very doubtful. It is proposed that the lint and seed from Rhino Camp ginnery be sent by road thirty-one miles to Okollo and railed from there. The alternatives would be either continued use of river transport or a direct 50-mile road haul to Pakwach. The latter would be impracticable unless the road were much improved, but this is urgently needed in any case, especially if the river service is to be discontinued. If there was an adequate road, this could be used at a lower cost than the longer road and rail route via Okollo.*

However, there seems no good reason why the river service should cease to function, for it provides the obvious means of handling the bulky cotton traffic between Laropi, Rhino Camp and Pakwach. It is estimated that there has recently been an annual loss of about £23,000 on the Nile service[20], but with some re-organization it might be possible to operate river transport profitably, at least between Laropi and Pakwach. The government, however, propose the abandonment of the whole system from Mbulamuti to Nimule, following the common tendency to view any situation in terms of all or nothing. Problems would arise in the continuation of part of the existing water services, but these are not insuperable. If the Railway Administration were not to operate on the Nile, some other body such as the Co-operative Union or the West Nile Local Government could be encouraged to take over the service, or tenders might be offered for private enterprise.

Coffee is confined to the south of the District, and could be exported more cheaply and conveniently through Pakwach than through Okollo, which would involve a more circuitous journey. The same applies to tea production, while the fishing industry could also not be affected by a further rail extension. Among present and potential exports only tobacco, hides, food crops and timber would originate mainly in the area around Arua, and could with advantage join the railway after a 38-mile road haul rather than forty-five miles further on. But the advantage would be off-set by the undeveloped nature of Okollo, of which further mention will be made. And any advantage for these exports cannot go far to justify the line without great faith in future expansion, for they totalled only about 1,200 tons in 1960.

*A third possibility is a 125-mile road haul via Arua, and during 1964 this route was being used.

A much larger proportion of imports are destined for Arua, but for this traffic the lack of any development at the proposed railhead would be a severe handicap. Pakwach is a very small trading centre, with only about twelve stores, but it offers a more promising basis for development than Okollo, which consists of a parish headquarters and one cotton store. There is no reason to suppose that traders would establish themselves at Okollo any more readily than at Kasese, and the Arua merchants would face the problems which have discouraged Fort Portal and Mubende traders from using the western extension. The existing shops at Pakwach include branches of Arua firms, and these could serve as railhead agencies. An Arua merchant has more trust in his brother at Pakwach than in some railway official at Okollo, his goods can be stored in the Pakwach shop, and he can more easily arrange return loads for his lorries. If a lorry has to be used at all, it is no great hardship to send it twice as far, when some rail freight is thereby saved; and most traders would prefer to send one fully loaded, at their own convenience, to Pakwach, than to send one empty to Okollo when word reaches them that their goods have arrived.

For Congo transit traffic, Okollo offers no advantage over Pakwach. The same considerations apply as for West Nile imports, while most of the trade is likely to pass through the Goli customs post, which is equally accessible from either railhead. Even if the railway is extended to Okollo, therefore, it would be cheaper and more convenient to use Pakwach as the transhipment point for most of the traffic. Any device adopted to direct the traffic through Okollo would tend to make the route across northern Uganda slightly less attractive.

The working party concluded that 'on an optimistic assessment' of traffic, an extension from Pakwach to Okollo would have an annual revenue of £15,750, compared with expenditure of £58,350[21]. The latter includes interest on capital since the lake services renewal fund will not cover the cost of construction beyond the Nile. In fact, the traffic estimates seem over-optimistic; for example, the import figure of 20,000 tons involved an assumed doubling of present traffic, and it includes petroleum products which are unlikely to move by rail.

If the railway were taken on as far as Arua, some of the problems mentioned above would not arise, and this arrangement would undoubtedly be the most satisfactory for the import traffic of West Nile. A railhead at Arua could also effectively serve Rhino Camp ginnery, and it might draw some Congo traffic through the Vurra customs post. But between Okollo and Arua the line would have to climb a 1,500 foot escarpment, and the costs involved would be so great that little attention has been given to this possibility. Unless traffic prospects change rapidly, the losses which could be expected on an extension to Arua are too great to be contemplated.

It is not suggested here that a bridge should not be built across the Nile, for this is to a large extent a political issue. But even if the bridge is built, an extension of the railway to Okollo or Arua seems quite unjustified. It would only carry enough traffic to cover its operating costs if Lint Marketing Board policy, road-building priorities and railway rate structures are

all designed to bring this about; but all this would not benefit West Nile. And there is no prospect whatever of the revenue covering the interest on the capital employed. West Nile would be served almost equally well by a railway ending at Pakwach, provided that either the river service continues in some form or the local roads are given the attention which is already overdue. At a time when capital for new development is scarce there are other channels of investment which will bring a greater return than a further rail extension.

Roads as a Factor Affecting the Impact of the Northern Railway

Main roads lead into northern Uganda from Soroti and Kampala, the former running roughly parallel with the new railway and the latter passing through Bunyoro. The two roads meet at Gulu, and from there one extends north-west via the Laropi ferry to West Nile, while another, more recent but now more important, leads westwards to Pakwach. These roads have been complementary to the steamer services in the process of 'opening-up' the north, and in so far as they have increasingly assisted economic development one effect of them is to reduce the likely impact of the railway, even though another is to increase the volume of traffic that can be anticipated.

One factor which will affect the role of the railway is the decision on the proposed bitumenization of the Soroti-Lira-Gulu road. If this takes place soon after the railway construction, each will reduce the benefits to be gained from the other. On recent traffic counts this road has a high priority for improvement, but now that the railway is open the traffic has fallen, while it is likely to decline further when oil depots are built in the north; expenditure on the road would then bring less benefit than that on roads elsewhere. Conversely, if a new tarred road encouraged transporters to cream off all the high-rated traffic from the railway, the line would incur financial losses which would have to be met by the community. Problems of unbalanced traffic would aggravate the situation, for if the railway handled the export traffic, most of which is guaranteed by the Lint Marketing Board, while road transport captured much import traffic, much empty running for both road and rail would result.

The situation is very different in the case of the Kampala-Gulu road, since this may be regarded as complementary to the new railway, which does not provide a satisfactory link between these towns. Some competition between the two routes will probably arise, as for tobacco traffic, but improvement of this road would not significantly reduce the impact of the extension. Better communications with the capital are likely to assist development in the north, and while the road would be used for managerial contacts, the railway might be used for the resulting freight traffic. The southern half of the road is particularly deserving of improvement since it serves Bunyoro District and now takes the traffic from there which was formerly handled by the Lake Kyoga steamers. Further north, improvements have already been made, as shown on Maps B and C. A bridge at Karuma Falls, replacing the Atura ferry, was opened in January 1963, and new roads north and south of the bridge have much reduced the distance between West Nile and Kampala.

New roads can greatly increase the impact of the railway if they act as feeders to it. The most important feeders to the northern extension will be the roads from Kitgum to Lira, from Nimule to Gulu, and from Arua to the terminus, and any improvements to these can only help the line to assist economic activity in the north. The building of new minor roads should encourage greater use of the opportunities provided by the railway: the line can have little impact on the area about forty miles north of Gulu as long as no road of any sort reaches to within ten miles. The strong case for an improved road from Rhino Camp to Pakwach, especially if the river service is abandoned, has been mentioned earlier; and as in the west, improved road access to the railhead could affect the attractiveness of the route for Congo traffic.

Implications of the Changed Transport Pattern for Bunyoro

The construction of the northern extension presupposed the withdrawal of the Lake Kyoga services, for there was no prospect of sufficient traffic to justify both. Most of the vessels have had a life of forty to fifty years and would soon have required replacement: the fact that considerable expenditure was inevitable whatever action were taken strongly influenced the decision to proceed with the railway. The extension must provide a more satisfactory transport service for Lango, Acholi and West Nile, although the withdrawal of the Kyoga steamers has caused slight inconvenience in a few cases; but the steamers also served Bunyoro, and this cannot benefit in any way from the new railway. Masindi Port was to have been closed in 1964, but floods made its use impossible throughout 1962 and 1963. The decision to withdraw the service brought forth many protests[22], but these were not supported by any evidence of the dependence of Bunyoro on the steamers. Table 15 suggests that their importance had declined greatly in recent years, despite a general increase in economic activity in the District. In 1956 it could still be stated that 'the maintenance of the Lake Kyoga services, primarily for export purposes, is of very considerable importance to Bunyoro'[23] for they then handled about 45% of all imports and 70% of all exports.

TABLE 15

E.A.R. & H. BUNYORO FREIGHT TRAFFIC

	Tons Despatched		Tons Received	
	Masindi Port	Masindi Town	Masindi Port	Masindi Town
1950	1,877	8,899	1,831	2,960
1955	1,197	5,674	1,145	2,116
1960	721	2,910	209	722

Source of data: E.A.R. & H. files, Kampala.

It is clear from discussions with local traders that the proportions are now much smaller, and, as observed by the 1962 working party, 'if E.A.R. & H. were prepared to maintain a goods service at economic rates between Masindi, Hoima and Kampala, there would be no strong objection to the withdrawal of the existing service between Butiaba, Masindi and Nama-

sagali'[24]. The Railway Administration has operated a road service on a small scale between Masindi and Kampala for some years, and this has now been expanded. If it is extended to Hoima, the District may be better served by E.A.R. & H. than before. Only cotton, timber and sisal traffic have been affected by the closure of Masindi Port, and only the last, which is produced on one small estate that has always had an insecure economic basis, has been seriously hit. With the choice of a railway road service or private lorry transport, Bunyoro did not appear to be suffering greatly from the cessation of the lake service in 1962, and provided attention is given to the roads from Masindi and Hoima to Kampala, there will be little to support the contention that the north has gained at the expense of Bunyoro.

The Western and Northern Extensions Compared

The experience of the western extension can be of value in many ways in ensuring that the line to the north is of the maximum possible value to the area through which it passes. The two lines are of similar length, each forms a continuation of an existing line, and each serves one of the less developed parts of the country. Many contrasts between the two lines are immediately apparent, including the nature of the country they traverse. For the first fifty miles the western line passes through land of irregular relief, broken by numerous swamps, with areas of thick forest and other areas planted with perennial crops for which compensation had to be paid. Further west it crosses the hilly country of eastern Toro, descends into the rift valley, and there has to cross the Lake George swamp. The northern extension traverses the flat plateau surface for most of its length, and has been aligned along a low watershed, thereby avoiding all swamps and reducing the chances of washaways, which have plagued the western line. The savanna vegetation presents few problems for construction work, perennial crops are rarely found, and the land is never under private ownership. The cost of the northern line was therefore much lower than that of the western extension, and its construction was considered justified despite a much smaller traffic potential.

There is no Kilembe in the north, and the line must depend for its traffic on the whole of the country through which it passes. It is therefore doubly important that the line should serve this country as effectively as possible. In contrast to the western extension, the northern railway passes through the more densely populated parts of the region, and this could prove a very great advantage. Efforts must be made to build feeder roads, to give positive encouragement to trade development around the stations, and to provide telephone services; but the tasks should be much easier where there is already some basis for development than along the almost uninhabited central section of the western line. The services offered by the railway must be publicized among the traders of the area, and again this should be easier where they are scattered through the neighbouring country than where they are to be found only many miles away.

The most important advantage enjoyed by the northern railway is that it passes through the chief trading centres of both Lango and Acholi, while

it will also reach some point on the road linking the chief town in West Nile with the rest of the country. In this respect it is comparable to a line passing through Masaka and Mbarara towns, which would effectively serve Masaka, Ankole and Kigezi Districts. Even if the extension does not stimulate new development in Lira and Gulu, any efforts to make the merchants of those towns aware of the new opportunities for trade which it provides could have repercussions throughout the north. The traders of Kitgum can take advantage of the railway while still retaining their links with Lira and Gulu, whereas those of Bushenyi have had to choose between use of Kasese and Kamwenge or continued dealings with Mbarara. The location of each area in relation to Kampala is also important, for this town has much greater control on the trade of western Uganda than it or any other town has on that of the north. Neither Mbale nor Soroti has developed to a comparable extent as a focus of trade for the areas beyond, and the traders of Gulu therefore already have a stronger tradition of direct import of goods from the producers or from Mombasa than have those of Mbarara or Fort Portal. For example about ten times as much cement is sent from Tororo to the northern towns as to those in the west, most supplies for the latter being obtained through Kampala dealers. As far as outwards traffic on each extension is concerned an important factor is that the bulk of the exports of Lango, Acholi and West Nile is controlled by the Lint Marketing Board, which always directs its traffic to the nearest railway, whereas more of the exports from western Uganda are uncontrolled and are moved by road in preference to rail.

While the northern extension enjoys several advantages which should assist it to form the major transport artery of the Northern Region, it must not be assumed that it will automatically fulfil this function to the maximum possible extent, and certainly not that it will of itself bring a new burst of economic development to the area. It provides new opportunities, but in addition to initiative on the part of the people of the area, encouragement from the Railway Administration and from the Uganda Government and its agencies are needed if these are to be seized. There must certainly be no discouragement, such as the charging of separate rates over the extension and the existing line from Soroti. Such a policy, either in the west or in the north, must amount to discrimination against one area of the country. It is particularly important that the lessons of the western extension (and of the Tanganyika Southern Province line considered in Chapter 9) should be noted in relation to the section of the extension on which a decision has still to be taken, and that the problems involved in the establishment of a railhead where there is no existing development should be appreciated.

It is sometimes stated that a fundamental difference between the northern and western extensions is that the former represents a rationalization of existing E.A.R. & H. services, whereas the latter provided transport facilities where none existed before. In fact the difference is not so great, for western Uganda was already served by road transport and the role anticipated for the railway in part represented a replacement of this. Neither railway

is in a position to 'open up the country' as rail transport could do sixty years ago; this is more widely realized in the case of the northern extension mainly because the previous transport services in the area were organized by the Railway Administration.

Conclusions

The Northern Uganda Extension seems likely to prove a successful venture both from the viewpoint of railway finances and from that of providing a more satisfactory form of transport for the north. It is most doubtful whether a line from Soroti to the Albert Nile would have been an economic proposition if it had cost 'not less than £6,000,000'[25], as expected in 1956: but the cost was in fact reduced to about £1,870,000, with a further £300,000 for new locomotives and rolling stock. The available evidence suggests, however, that an extension from Pakwach to Okollo or Arua would not only involve considerable additional capital expenditure, but would also be operated at a heavy loss for the foreseeable future. Indeed, as stated in the Five-year Plan, 'the Government recognized that from a financial and economic point of view, the bridging of the Nile, and the extension of the railway into the West Nile District might not be justified at the present time'[26]. Yet it has agreed to the closure of the Albert Nile services 'only on condition that the Administration accepts in principle a project to cross the Nile at Pakwach with a road/rail bridge and to extend the railway into the West Nile District'[27]. It would surely seem wiser to improve the access roads to a railhead at Pakwach, and to consider whether the river service could be retained in some form.

The arguments put forward in favour of each section of the northern railway have rested not only upon the advantage to the Railway Administration and the more satisfactory service provided for existing traffic, but also upon the effects of the line in stimulating economic development. The Northern Communications report was much more moderate in this respect than that recommending the extension to the west, and it included the observation that 'the development of the area under consideration has not in the past been delayed to any great extent by any lack of adequate internal or external communications'[28]. Yet the next sentence reads: 'The point has now been reached where extensions and improvements to the existing communications system would act as a stimulus to further development'. During the debate on the extension to Gulu in the Uganda Legislative Council, one member, later Minister of Commerce and Industry, declared that the line 'will result in increased production of cotton and other crops'[29], and the next speaker, referring to the area beyond Gulu, observed that 'there is a lot of land there lying idle, requiring development, for the want of the railway'[30]. It is here suggested that the railway cannot itself act as a stimulus, and that unless positive action is taken to encourage the forms of development which the provision of rail transport permits, these hopes will be disappointed. The railway should certainly assist in the economic development of northern Uganda, especially if road improvements are so planned that the two forms of transport are as far as possible comple-

mentary rather than competitive. But when a government paper states, with no supporting evidence, that 'direct railway communication can be expected to act as a stimulus to the economy of the West Nile district and may well encourage agricultural production to expand more rapidly than is forecast by the Working Party'[31], even though that forecast was for a doubling of exports within five years, the tendency to overestimate its probable impact clearly remains.

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FREIGHT RATES

In much of this discussion of the effects of railway services on economic activities, it is apparent that not only the provision of rail facilities, but also the charge made for their use, is of concern to the producer or consumer of goods. A detailed analysis of rail rates in East Africa has been made by A. Hazlewood in another E.A.I.S.R. study[1], and the subject will be considered only briefly here; but it must be mentioned since the rates charged greatly affect the role of the railway in the economic geography of the area. A particularly exhaustive survey of the principles of railway rating has been provided by D. P. Locklin[2], although as in most discussions of the subject far more attention is given to the factors affecting the rates adopted than to their effects. He writes entirely in terms of United States conditions, and the situation there is very different from that in East Africa. The railways of the United States are operated by numerous private companies each of which has its own rating policy, so that maps of freight charges show highly complicated patterns. Similarly in Britain there were 40 to 50 million different rates in force in 1920[3].

In East Africa there is only one Railway Administration, which operates a very simple rate structure. This distinguishes eleven basic classes of freight, with additional special scales for petroleum products handled in bulk. For each class the charge increases fairly regularly with distance, although the rate is generally 'tapered', so that the charge for the first hundred miles is greater than for an extra hundred miles on a long haul. The only rate which varies more irregularly with distance is that on sisal, which is of little concern to Uganda; and there is therefore no scope for studies of the type presented by J. W. Alexander for Illinois, where certain activities are concentrated in zones enjoying an advantage through irregular freight rate structures[4]. The same charge is normally applied for a given distance on any section of line, and only about 10% of all E.A.R. & H. freight traffic travels at special rates for specific hauls. Only forty such rates are quoted in Uganda.

It is important to consider the effects on the economic geography of Uganda of the variation in rate according to commodity, and of the tapering

of rates. The classification used depends mainly upon the value of each commodity, but as shown in Table 16 there are many anomalies at present. It is commonly supposed in East Africa that the differential tariff greatly

TABLE 16

EXAMPLES OF E.A.R. & H. FREIGHT RATES

Kampala—Mombasa, 1961

Value at Mombasa per 100 lb. Sh.	Commodity (Waggon loads)	Class	Rate per 100 lb. Sh. cts.
	Bicycles	4	12 90
470	Tyres	4	12 90
202	Soap	6	9 75
121	Coffee	8	6 91
69	Corrugated Iron	8	6 91
346	Tea	8	6 91
240	Cotton Lint	9	5 46
5	Salt	9	5 46
6	Cement	10	4 17
204	Copper	10	4 17
220	Hides	10	4 17
53	Groundnuts	B	3 27
19	Cattle Cake	C	2 55
33	Timber	C	2 55
21	Fertilizers	D	2 16
	Petrol	Special	12 18
	Diesel Fuel	Special	6 17
At 1961 average charge of 19.4 cents per ton-mile (c.p.t.m.)			6 55

Rail rates based on E.A.R. & H. Tariff Book, 1960.

Values based on East African Customs and Excise Department, Annual Trade Report for 1961.

assists Uganda's export crops[5], but this is not the case. The average rate for all goods over the whole East African system in 1961 was 19.4 cents per ton-mile[6], and while the rate for cotton is slightly below this, that for coffee and tea is higher. Among exports from Uganda those most assisted by the differential tariff are cattle cake, timber and groundnuts, but in spite of this only small quantities of the last two are handled. Exports of cattle cake are much assisted by the low rate quoted, while hides also benefit to a lesser extent: but both are by-products and relatively inelastic in supply. Haulage at a rate slightly below average has been of some importance for copper production, where profit margins have been low, and where a single decision controls the whole existence of the industry.

Most imported goods are charged at rates well above the average, and unless they are of particularly high value this increases somewhat the price at which they are available in Uganda. Petrol is perhaps the most important example since its cost is reflected in many spheres of activity. Salt is one of a few low-value imports carried at low rates, while special mention should be made of fertilizer as this is the only commodity carried at a rate below the estimated average variable costs of 7 cents per ton-mile (special rate D for 1,000 miles is 6.1 cents per ton-mile). Whether or not movement of freight at rates below cost can be justified is a matter of debate; but our concern here is to note that the low rate affects the economic geography of Uganda, by encouraging the use of fertilizers on the tea and sugar estates, and especially by assisting the establishment of the fertilizer factory at Tororo.

For local movements the tariff structure is of less significance since the differential between most classes is relatively small over the first 100 or 200 miles. It is significant in the case of the specially low rates however: the Lint Marketing Board for example benefits from the haulage of cotton seed at a rate lower than average. But the opportunities provided by low rates charged for even local movements of grains or timber have not been used to any great extent. The special rates for specific hauls apply mainly to local movements, especially of sugar, cement and vegetable oil, and their contribution to each industry has been mentioned in Chapter 2. There are no examples of the location of manufacturing being affected by a difference in rate between raw materials and finished products, but flour milling presents a case of the reverse. The same rate is applied to wheat and to flour, and since the former is the more bulky and there is little market in Uganda for the by-products, only one mill has been established, and much flour is imported in finished condition from Kenya. The rate for these products is very low, and as with potatoes, this has helped the Kenya producers to be sufficiently competitive to hinder production in the highland areas of Uganda.

Many commodities are charged at one rate if they are moved in small quantities, and at a lower rate if offered in full waggon-loads (usually a minimum of 5 or 10 tons). This does not apply to such high-value goods as textiles, which are always charged at the top rate, or to commodities which are only occasionally handled in large quantities; but it applies to a sufficiently wide range of goods to have encouraged slightly the development of wholesale trade in the larger towns and to have discouraged small retailers in the minor townships from obtaining goods direct from Mombasa through local stations. A Mityana trader who requires three tons of corrugated iron can obtain it more cheaply from Kampala than by ordering it from Mombasa and having it railed at the small quantity rate. The situation is similar in the case of exports: the cotton ginneries and coffee works provide traffic in bulk but products such as groundnuts are often handled by the traders in very small quantities. For short-distance traffic the differential between rates is generally small, as noted above, but for grains and pulses it is quite substantial. Over the 249-mile haul between

Soroti and Kampala these are carried at 1/46 per 100 lb. in 10-ton loads and at 3/34 in smaller quantities. Since internal trade in foodstuffs is generally not organized on a sufficiently large scale to provide full waggon loads, the rating policy reduces somewhat the value of the railway for such trade.

The differential tariff is of some significance for the economic geography of Uganda, and it tends to increase the role of the railway by enabling goods of low value to be moved very cheaply. Its significance is less than in many other countries, however, partly because the difference between the highest and lowest rates is smaller than on many railway systems. Table 17 suggests that it may be a factor of greater importance in Rhodesia and South Africa.

TABLE 17

RAILWAY FREIGHT RATES EAST AFRICA, RHODESIA, SOUTH AFRICA

100 miles. Pence per ton.	Highest	Lowest
East Africa 1960	457	216*
Rhodesia 1959	1,060	120†
South Africa 1959	1,340	129
1,000 miles. Pence per ton.	Highest	Lowest
East Africa 1960	4,570	860*
Rhodesia 1959	6,760	557†
South Africa 1959	7,160	367

*Excluding fertilizer rate.

†Excluding coal rate.

Sources: Railway Tariff Books.

Uganda undoubtedly benefits from the tapering of rates, but again the policy has not been carried as far as in the countries to the south, and there is no evidence that the E.A.R. & H. rate structure is far out of line with costs in this respect. As noted by J. R. Sargent for British Railways[7] and by a recent committee in Rhodesia[8], the cost of haulage per mile does not always diminish as the distance rises as is sometimes suggested; but total costs per mile fall, as terminal costs remain constant whatever the length of haul. In East Africa the taper generally takes effect within the first 400 miles, and after this the charge for each extra 100 miles is roughly the same. Long hauls to and from Uganda are therefore not subsidized by short distance traffic; it is the latter that is carried at a charge lower than costs might warrant. An aspect of the policy of particular significance for Uganda, the calculation of separate charges for movements on the main line and on the western and northern extensions, has already been considered at some length.

One feature of the rating system that should be mentioned is that traffic passing between Jinja or Kampala and any station from Nakuru to Mombasa

is charged at the rate for the shortest route, that via Kisumu, even though all now moves via Tororo. The distance from Kampala to Mombasa via Kisumu is 756 miles, compared with 824 miles via Iganga and Tororo, and the anomaly has therefore slightly reduced the charge on most goods moving to or from Uganda. It also minimises the effect on rail charges of the Jinja-Bukonte cut-off, since the same rate was charged even when all traffic between Kampala and the coast moved 874 miles via Mbulamuti.

The committee which recently examined rail rates in Rhodesia observed: 'In our view railway rates are a factor but not a major factor in the location of industry, and we feel that their influence in this matter tends to be exaggerated'[9]. The same appears to be true as far as all economic activities in Uganda are concerned. The significance of rating policies has been reduced as transport costs have represented an ever smaller proportion of the value of most goods over the past thirty years. In 1940 it was suggested that freight charges were too high to permit exports of palm oil or cocoa[10], but that would not be true today. Rates have risen very little since 1930, and on high value goods they have fallen, and this has enhanced the value of the railway for Uganda. It should also be noted, however, that the rates for road haulage have fallen slightly over this period, presenting a challenge to the railway which will be considered in the next chapter.

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RAIL AND ROAD TRANSPORT

THIS study is concerned primarily with rail transport, but some attention must also be given to road transport in view of the close relationships which exist between the two. It is clear from the preceding discussion that rail and road can be either competitive or complementary, and in either case roads directly affect the role of railway services. Much has been written by economists on the competition for traffic which commonly takes place[1], but in these studies attention has not generally been directed towards the relative effects of roads and railways on the pattern of economic activities in any area. The present chapter is primarily concerned with this, rather than with the consequence of road competition for the Railway Administration or the arguments for and against restrictive licensing.

Road transport in Uganda has been the subject of a very thorough study by E. K. Hawkins[2], which examines at some length the economics of the Uganda road transport industry, and provides much information on the pattern of traffic. The difficulty of evaluating the benefits of roads for the economy is such that Hawkins could not express them in quantitative terms, even after working specifically on this subject. No attempt can be made to do so in this study of rail transport, and therefore only some indication, rather than a precise assessment, of the relative value of roads and railways in Uganda is offered here. Some light may be thrown on the problem by an examination of the comparative costs of road and rail transport, and the service which each can offer.

There is virtually no body of economic theory on the subject which could be tested for Uganda conditions. One reason for this is the number of variables involved. The costs of providing each form of transport vary according to the nature, volume, direction and timing of the traffic to be handled, the nature of the country and the distance to be traversed, the availability of construction materials and of fuels, and many other factors. The only attempt to produce a formula allowing for such factors which has been published in English is that by J. B. Holmstrom, to which further reference will be made[3].

Roads and Road Transport in Uganda

Uganda established a wide reputation for its roads before the Second World War, when they were much superior to those of most other countries of tropical Africa. Several of these have since caught up, for relatively few new roads have been built in Uganda since 1930. But much has recently been spent on improving the older roads, and Uganda is still far better served than, for example, Sudan. Today 3,000 miles of roads are maintained by the Ministry of Works, of which just over 600 miles are bitumen-surfaced, while local governments maintain a further 10,000 miles[4]. There are thus about 0.14 miles of road, open in all normal weather, per square mile of land. Investment in roads between 1952 and 1959 amounted to £12.6 million, and the capital value of the road system in 1959 was estimated at £32 million[5].

Motor vehicles came into general use in Uganda soon after 1920, and by 1930 there were over 1,000 lorries in the country. The greatest expansion took place between 1946 and 1955, after which the number of vehicles in use rose more slowly to a peak of 10,100 in 1958, and then fell to only 8,000 by 1962. Little information is available on the volume of goods moved by road in Uganda, for although vehicle counts are made regularly, these do not distinguish between commercial vehicles and private cars. The only statistics available on a country-wide basis are those collected by Hawkins, who conducted a check over 27 hours of daylight at each of 26 points on the main roads of the country. The survey was made in 1958, early in the cotton season when traffic was probably at a maximum. The greatest number of commercial vehicles was recorded on the Jinja-Iganga road, two miles from Jinja, where 1,654 passed in 27 hours. Several other checkpoints showed figures of 700 to 1,000, but at some the number of lorries was only between 100 and 200[6].

One notable feature of road transport in Uganda is the large amount of empty running. Hawkins found that 38 to 44% of the lorries moving into and out of Kampala, Masaka and Gulu were travelling empty, and that around Jinja, Mbale and Fort Portal the figure rose above 49%. The records of the ferries on the roads into West Nile District confirm the picture of a high proportion of empty running.

It is officially claimed that there is little or no evidence of a surplus of road transport in Uganda, of competition that is rendering the industry unstable, or of any tendency for rates to get out of line with costs[7]. The frequency with which road hauliers go out of business*, and the rates prevailing for certain traffic, do not support this view. In Tanganyika an International Bank mission noted that 'there are far too many vehicles on a number of road sections for the traffic offered for carriage'[8], and there are more vehicles in Uganda, which is a much smaller country. The difference of opinion is due partly to the seasonal nature of much traffic; there are also variations over the country, a shortage of transport some-

*The sugar estates have no difficulty in finding transporters to move sugar to its markets' but within any one year the list of firms undertaking this has completely altered several times.

times occurring in Kigezi while there is a surplus around Jinja. But much uneconomic road transport certainly appears to take place. The structure of the industry is one factor affecting the situation. There are few firms engaged solely in road haulage, which is generally undertaken as a secondary activity by traders, who are rarely in a position to keep all their lorries fully occupied. The availability of hire-purchase facilities encouraged many to buy lorries before ensuring that traffic was available[9], and since the main finance company concerned withdrew in 1960 many fewer lorries have been bought.

Road-Rail Competition

Until about 1950 the roads of Uganda were largely complementary in function to the railway, but today much competition for traffic takes place. Sometimes there is good reason for considering such competition 'unfair', and many countries have in consequence adopted restrictive licensing of road transport. Kenya and Tanganyika are among such countries, but the Uganda Government has been unwilling to take similar action, the most compelling reason being the difficulty of enforcement. Government has only placed temporary restrictions on the use of certain roads, and limited the operation of Kenya-registered vehicles within Uganda, although it has made every effort to direct its own traffic, and that controlled by the marketing boards, to the railway.

An estimate made by the Railway Administration in 1958 indicated that about 75,000 tons of internal freight traffic which could easily have been moved by rail was in fact travelling by road each year, together with 8,000 tons of inter-territorial traffic. Hawkins' figures suggest indirectly a substantially greater volume of inter-territorial movement; in 27 hours 90 commercial vehicles passed to and from Kenya[10], and if these carried 250 tons of goods this would give a figure of 30,000 tons a year during daylight hours alone. Confirmation of the extent of the traffic is provided by the complaints made by transporters in both Uganda and Kenya about unfair competition from those of the other country.

All the inter-territorial road haulage takes place in direct competition with the railway services, although for movements between Uganda and the Kisumu area of Kenya it is generally accepted that road transport is more satisfactory for most goods than use of the lake services in view of the transhipments which these involve. The same applies to trade with the Bukoba area of Tanganyika, and the extent of road movements in this case was indicated in April-June 1960 when a sharp increase in steamer traffic between Port Bell and Bukoba coincided with a break in road communications. For all other inter-territorial traffic the Railway Administration claims that any benefits to the individual from the use of road transport are gained at the expense of the community as a whole. In a letter to the leading traders of Kenya and Uganda the East African member of a large international transport group suggested that 'anything rail can do road can do better' and offered rates below those of E.A.R. & H. for every class of traffic except those charged 'Special Rates'. But it might be noted that

they were willing to handle only through traffic between Kampala and Mombasa, and would accept no common carrier obligations. The rates quoted were well below half those charged by a related concern in Rhodesia, and there seems little doubt that they would in fact take only the higher-rated commodities, leaving the railway with the low-value traffic.

There are many cases of fierce competition from road transport for internal traffic, which the Railway Administration has attempted to meet by alterations in its freight rates. In 1958 rail rates ranged from 6 to 60 cents per ton-mile, and the highest-rated goods such as textiles and provisions could always be carried from Kampala to the west or from Tororo to Soroti more cheaply by road. The top rate has therefore been cut to 38 cents, only half that in force in Rhodesia and South Africa as shown earlier in Table 17, the loss of revenue being made up by an increase in the lowest rates. This has undoubtedly helped the railway to retain high-value traffic in many cases.

The clearest examples of competition involve relatively low value sugar and cement traffic. As noted in Chapter 2, the volume of sugar railed to Uganda stations fell sharply around 1957, when road transporters were offering far lower rates than previously. Special rates were quoted on the railway as a result, and further reductions have been made, as shown in Table 18, but most supplies other than those for Kampala are still moved

TABLE 18

E.A.R. & H. RATE REDUCTIONS ON SUGAR TRAFFIC

Miles		Standard Rate† 1958–62	Special Rate from April 1958	Special Rate from Aug. 1958
	Kakira to:			
69	Kampala	1 12	0 89*	0 55*
129	Tororo	1 89	0 88	0 46
164	Mbale	2 41	1 22	0 69
230	Soroti	3 14	2 09	1 76
329	Rhino Camp	4 11	2 80	2 80
211	Atura	2 98	1 80	1 80
201	Kachung	2 86	1 34	1 34
186	Masindi Town ..	2 69	1 30	1 30

†Before opening of Jinja-Bukonte line.
*Includes local delivery in Kampala.

Comparable reductions were made for Kawolo traffic.
Data from E.A.R. & H. Tariff Books.

by road. The efforts to direct cement traffic to the railway have been more successful, but substantial quantities are still carried long distances by road. On the road from Tororo to Jinja the same lorries often carry cement in one direction and sugar in the other, each at a rate of about 25 cents per

ton-mile. Much of the traffic is handled by small Sikh firms from Jinja, many of which have difficulty in finding loads for their lorries, and for which haulage at these rates is more economic than leaving the vehicles idle, especially when 9 or 10 tons are carried on a 7-ton lorry. The road rates have never been as low as the Special rail rates, but traders are unwilling to have their capital tied up for several days on the railway system, and are willing to pay a little extra for receiving their supplies the day after they have been ordered.

The Railway estimate of 75,000 tons of internal traffic captured by road transport represents only part of the 150,000 tons of goods which probably move by road each year parallel to the railway for over seventy-five miles, for staple foodstuffs are not included. The railway is unlikely to attract this traffic which is already carried at the lowest rate, at least while road charges are around or below 40 cents per ton-mile. Road transport at very low rates may be less often available following the recent fall in lorry imports, but normal charges are unlikely to approach the figures of 65 to 80 cents per ton-mile normally paid by government. The payment of such rates may have assisted the carriage of goods at slack periods at apparently uneconomic rates. Reasonable charges are probably those made for timber transport from western Uganda, which in 1962 were 35 cents for movements to Kampala, with a good chance of a return load, and 45 cents per ton-mile for hauls to towns in the north.

The same problems of road competition are facing the Railway Administration in Kenya and Tanganyika despite the adoption of restrictive road licensing. It was reported in 1961 that 75% of the imports taken from Mombasa to Arusha were being moved by road although a railway runs parallel to the road for the whole distance of 245 miles. In West Africa there are many comparable examples. In 1948/9, 92% of the import traffic passing through Apapa and 91% of that passing through Port Harcourt was moved inland by rail: in 1958/9 the figures were 51% and 40% respectively[11]. In one of the few discussions of the situation by geographers it was said about the west of Senegal: '*La concurrence n'est que trop réelle et souvent aboutit au gaspillage et à l'anarchie*'[12].

The extent of road competition in many countries leads to suggestions that railways are now outdated, and such claims are sometimes made in Uganda, even in relation to the main line to Mombasa. This is not Hawkins' view, but he suggested that the railway 'provides primarily a link with the sea and fulfils only a minor role internally, since distances are short and roads are plentiful'[13]. Noting the competition for traffic in Kenya and Tanganyika, he observed that 'in Uganda the problem is much less severe. In a small country like Uganda this is the kind of short haul traffic where road transport possesses a natural advantage over rail because of its greater flexibility'[14]. This view was not entirely acceptable to the Railway Administration, whose estimates of internal traffic lost to road transport have been given, the main disagreement being as to whether a distance of 100 to 150 miles constitutes a short haul.

Cost of Road and Rail Transport

For an assessment of the role played by the railway in comparison with that which road transport alone could perform, attention must be given to the cost/benefit ratio of each form of transport in Uganda. The costs must be considered not only in terms of the charge to the individual customer, but also in terms of the real cost to the community as a whole. Within the Railway Administration much attention has been devoted to the calculation of the total costs of moving freight traffic, as pointed out by a former Chief Commercial Superintendent[15], and estimates for the system as a whole have been produced. The most recent figures (for rail and steamer services) are 18 cents per ton-mile, consisting of fixed overhead costs of 11 cents and variable operating costs averaging 7 cents[16]. The average 1960 revenue from freight of 19.4 cents per ton-mile provides a rough check, for the results normally show a small profit. The costs of moving Uganda traffic are unlikely to be markedly different from those for East Africa as a whole.

No comparable estimate of the overall costs of road haulage could be made, and even for specific movements there are no reliable figures. Hawkins was unable to come to definite conclusions on the matter, and figures quoted in his report reflect the wide range of opinion prevailing among transporters in Uganda today[17]. Two firms operating 5-ton lorries suggested costs of 73 cents and 28 cents per ton-mile respectively. The estimates for maintenance and depreciation were 2/85 per vehicle-mile in the first case, and 0/55 in the second, and Hawkins lets this pass without comment. A committee of enquiry considered the question in Kenya, and the weight of evidence suggested that lorries of 7 tons capacity could operate at about 50 cents per ton-mile for a one-way movement, or 30 cents per ton-mile with assured return loads[18]. Far higher and lower figures were also submitted, including one claim that costs below 10 cents per ton-mile were feasible for long hauls, but these were considered unrealistic*. In Tanganyika competition has forced E.A.R. & H. road service rates down to 30 to 35 cents per ton-mile in some cases, but it is claimed that 'on a long term basis such rates are clearly uneconomic unless capacity loading can be achieved in both directions, which is unlikely'[21]. It could certainly not be achieved for the whole of the Uganda traffic now handled by rail. Petroleum, for example, is most economically carried in bulk tankers, for which no return load is available, while there is a greater volume of other traffic to be taken to the coast than to be brought from there. Furthermore there are marked seasonal variations in the volume of export traffic.

The direct costs of road transport, like the average charge to the customer, appear to be roughly double those of movement by rail. But it is important to consider whether these costs are truly comparable to those faced by the

*Mention might be made of a figure given for one locality to the East Africa Royal Commission[19]. Their report noted that near the Kenya coast lorry transport cost 3/50 to 5/- a ton-mile, and this has been quoted in various contexts in at least three works[20]. The information may have been accurate for that specific area, but it is certainly not representative, and the fact that it has been so widely quoted shows how little work has been done in this field.

Railway Administration. In fact they are not, for whereas the Railway must provide its own track and stations, road transporters do not have to provide the roads which they use. In Britain road users met the costs of these through taxation even before 1939, while in 1952 receipts from vehicle and fuel taxes amounted to £338 million, compared with expenditure of £75 million on maintaining and improving the roads[22]. But this is not the case in Uganda, where Hawkins observed that taxes were 'roughly a third of what they would have to be to cover the real costs of providing the roads' and that 'commercial vehicles themselves probably do not pay their fair share of the total sum collected'[23]. A more recent report prepared for the Uganda Government expresses the same view[24]. If allowance is made for this, it is clear that the present rail traffic of Uganda could be handled by road only at a considerably greater cost. The use of 20-ton lorry and trailer units would reduce operating costs for road transport, although probably not below the overall costs of rail transport, but this would involve substantial new expenditure on the roads.

Advantages of Road Transport

Since road transport is widely used for freight movements which could take place by rail, even though the costs are normally much higher, it must offer substantial advantages. Some of these are inherent in the nature of road transport, while others result only from the charging of rates which do not truly reflect the costs involved. J. R. Sargent opens his book on transport in Britain with a hypothetical situation in which road rates are lower than those for rail haulage, but the latter offers various advantages to compensate for this[25]. The position in Uganda is comparable, but in reverse.

One universal characteristic of road transport is its flexibility. The choice of points at which a rail journey may begin and end is very limited, whereas a road haul may be undertaken between any two points on the road system, which is itself far more extensive than the rail network, especially when all motorable tracks are taken into account. A rail haul normally involves transhipment at one or both ends, rather than providing a single door-to-door transit, and this is almost always the case in Uganda, where most commercial activity takes place on too small a scale to justify private sidings. This directly affects transport costs since paid labour is required for the handling at the terminals, and since a lorry must be used for a short haul to or from the railway at a cost relatively higher than for a longer journey. Costs are also increased by the greater risk of damage, and by the delay which inevitably results from a lack of synchronization between the arrival of goods by one means of transport and their despatch by another. Road transport is also flexible in that it is suitable for traffic offered in small quantities as well as in bulk. Each 5-ton lorry functions as a separate unit, whereas freight can be moved economically by rail only in trainloads. In Uganda much of the demand is for small scale movements between a wide variety of places, and road haulage can frequently offer the attraction of greater speed because rail consignments must wait until a trainload of freight has been assembled.

Other advantages are due to characteristics of trade in Uganda, and not to inherent features of road transport. Since the majority of the larger traders own lorries and are transporters in their own right, they are naturally anxious that their trade should provide traffic for their vehicles, and they are no more willing to use the railway than to contribute to the profits of some large road haulage firm. In addition, there is often no clear distinction between commercial and personal use of vehicles, and if a trader in a small centre sends a load of produce to a larger town by lorry, this provides the opportunity to go there himself, whether for business contacts, banking, or purely social reasons. The strength of family ties among the Asian population is important, for traders who own no lorries often have brothers who do, and they will give business to their brother rather than to what is regarded as a large bureaucratic concern.

Sometimes road transport can offer clear economic advantage to the individual, but at the expense of a greater loss for the community, on account of the charging of rates which do not accurately reflect costs. This point is made by most writers on the subject of rail-road competition: 'Where it is not possible to have the charges of the different transport agents for different services reflect the cost of those services, then to allow users to choose freely between the agents, between road and rail, will not lead to the most economic allocation of traffic'[26]. Among the factors preventing charges from truly reflecting costs in Uganda are the low level of road taxation mentioned above, the demands made of the Railway Administration, and the composition of the costs of each form of transport[27].

The demands made include the provision of 'cheap transport to assist agricultural, mining and industrial development'[28] by means of a differential tariff, and the obligations of a common carrier. If some goods are to be carried at rates which meet variable costs but make very little contribution to overheads, others must be charged at much higher rates in order to cover these overheads. It is in the interests of the public that provisions be carried by rail since the average cost is below 20 cents per ton-mile, but it may not be in the interest of the individual customer who has to pay twice this charge on such a high-rated commodity. More traffic would move by rail if agreements could be made with firms about the rates to be charged for their traffic, as they are in the case of road transport (and have been by British Railways since 1957). The most that the Railway Administration may do is to offer special rates for any commodity between specified points, and there are no agreements of the type negotiated between the Uganda Electricity Board and its largest customers, although the rates for goods such as copper may be of interest to only one firm. There is sometimes a substantial difference between the cost of moving the traffic of one customer with regular requirements and that of another who uses the railway only intermittently, but both must be charged the same rate. This represents an extremely important service which road transport does not match, especially as no traffic may be refused, but it does hinder the most economic allocation of traffic between rail and road in certain cases.

The difference in the structure of road and rail costs is also of significance. H. O. Mance pointed out that whereas variable costs made up 60% of the total for road transport in Britain around 1938, they accounted for only 35% for the railways[29], while M. R. Bonavia states that 60 to 80% of rail costs are normally independent of the traffic handled[30]. The position in East Africa is similar, and there as elsewhere it is impossible to allocate the fixed costs correctly among all the goods handled. In general the situation arises on the railway where extra traffic could be moved for about 7 cents per ton-mile yet must be charged the standard rates. On account of the different cost structure rail costs are reduced much more than those of road haulage by an increase of traffic, and so the more freight is moved by rail, the greater the value of the railway, not only for this extra traffic but rather for all that is carried, and therefore for the economy.

New Road or Rail Construction

It appears that the existing rail services in Uganda are moving a large volume of freight more economically than road transport could do; but this alone is not sufficient to justify the construction of new lines into every area not at present served by rail. Many other issues are involved, including the probable costs of operation on that particular line, which depend very much on the volume of traffic; the existing transport facilities in the area; the amount of capital expenditure involved; and the likely benefit of a similar investment in other projects. The values for these criteria may be such that expenditure on a railway is not warranted, and a smaller investment in road improvement more advisable. In the 1930s J. E. Holmstrom formulated the general principles involved[31], and concluded that except where the terrain caused unusually high construction costs a railway would normally be an economic proposition where the traffic expectations exceeded 50,000 tons a year. This, however, applied to 'Pioneer Development' and is not necessarily applicable to Uganda today, while even if the principles could be directly applied, changed costs would demand an entirely new analysis. It is in fact not really possible to arrive at a figure of this kind even for Uganda alone, and each case has to be considered on its merits; but in certain respects general comparisons between investment in railways and in roads can be made.

Since capital is not readily available for every worthwhile project, the most satisfactory approach is to assume that a given sum can be spent, and to compare the benefits to be obtained from using it in various ways. Those resulting from railway construction form the subject of much of this study: the total gain to the community is the reduction in transport costs for the existing traffic in the area served, together with an allowance for new economic development made possible by the railway, plus or minus the effect of the new line on railway revenues. (Thus if traffic potential is very low, operating losses may exceed the gain to the local area.) Here the benefits of expenditure on roads form the main concern. In Uganda this would not take the form of driving highways into virgin country, in which terms the scanty literature on the subject has generally been written, for the road

system already reaches all parts of the country. The alternatives are the improvement of existing main roads, or the building of new local roads to intensify the present network. If it could be shown that either form of expenditure would be of greater value than railway construction, this should guide the allocation of funds within the field of communications.

Recent figures given by the Ministry of Works show that the reconstruction and bitumenization of a major highway in Uganda costs roughly £10,000 a mile, while a local earth road can be built for about £1,500 a mile in easy country. These figures compare with the estimate of about £10,000 a mile for the northern extension railway. The appropriate comparison is therefore between the effects of building a certain mileage of railway, a similar length of improved highway, or a mileage of local roads about six times greater.

The most immediate effect of the improvement of an earth road is a reduction in costs for traffic already using it. Hawkins estimated that bitumenization brought a saving of 25 cents a mile for a 5-ton lorry[32], and on this basis the saving on a typical haul can be calculated. If a transporter will move a 5-ton load 100 miles over an earth road at 30 cents per ton-mile and will bring back 2½ tons at 40 cents per ton-mile, his customer must pay 150/-+100/-=250/-. If his costs are reduced by 25 cents a mile he could lower the charge by 25/- in each direction. The reduction from 250/- to 200/- compares with rail charges of 100/-+50/-=150/- at the average rate of 20 cents per ton-mile. The immediate gain from rail construction would therefore seem greater, but it should be noted that the benefits of road improvement may be spread more widely, covering all goods moving on the road, including local and other traffic which would not transfer to rail, and also covering a larger proportion of passenger movement. If the total saving in transport costs is greater from railway construction there is clearly a case for this where the traffic is expected to be sufficient to ensure no operating losses on the new line. Where the traffic is somewhat less road improvement may in some cases be justified.

It is also necessary to consider the possible effects of an improved road, as well as a railway, on the level of economic activity in the surrounding area; but this does not lend itself to abstract discussion for it must vary greatly from place to place. No study of this question has been made in East Africa, and there is a clear need for one, the new Masaka-Mbarara road offering a particularly good opportunity*. A superficial glance at the problem does not suggest that main road improvement has had any marked effect on local economic development in Uganda. There is a clear justification for highway development where there is a high density of traffic which is unsuited to rail transport, as on the roads leading into Kampala, but elsewhere there are probably not many cases at present where economic considerations alone would warrant expenditure on new tarmac-surfaced roads, although social and political advantages may sometimes help to justify such roads.

*Much study of the effects of highway building in the United States has been undertaken, as exemplified in 'Studies of Highway Development and Geographic Change'[33], but this is not of great assistance for the problem in Uganda.

It is equally important that attention should be devoted to the alternative of building more new local roads, which would serve, among other things, as feeders to the present main roads and railways, which are not used to capacity. Such roads are the responsibility of local governments, but they are financed largely by grants from the central government, which therefore has to decide on allocation of funds for different types of road development. In this case the saving on movements already taking place cannot be measured, for it is likely to involve a change from people moving their goods themselves, either on foot or by cycle, to having them moved by lorry at a charge. Many new local roads could bring a very large saving of labour and time, which could be devoted to productive activities. The extent to which they would in fact be so devoted must remain a matter of uncertainty, however.

The benefits of local road construction perhaps lie mainly in any economic development thereby encouraged, and there is therefore a particular need for studies of the local effects of such investment. Virtually no work has been done on this subject in East Africa; even the writings of anthropologists who have obtained thorough knowledge of certain areas provide no information. One enquiry was made in West Nile by N. D. S. Smith, who found a 'distinct association between development and road penetration'[34], and the scarcity of such studies has caused this to be quoted in the discussion of road building even in West Africa[35], even though it was only an unpublished research note. Smith himself observed that the statistics available were not sufficient to enable any precise relationship to be established, and in fact the coverage of the study and the attention given to other factors were too limited to provide conclusions which could fairly be applied even elsewhere in Uganda. In 1963 detailed studies of many feeder road projects were made by two members of the Economist Intelligence Unit[36], but there have been no further studies of the effects of road building.

No quantitative assessment of the effects of local road building can be made here, but the earlier examination of the economic activities of Uganda suggested that the transport factor is often of particular importance today at the local level. The fishing industry, for example, has undoubtedly been assisted by recent road building, especially around Lake Kyoga. Bugisu District offers several examples of recent and proposed local roads: that built recently from Buteza to Bufumbo appears to have encouraged coffee production in the surrounding area, while there is some evidence to suggest that if the Nkokonjeru Plateau and the Butandiga Ridge were provided with road access, coffee production would expand in these areas. On Map 4 the settlement pattern shows a marked relationship to the minor roads, and this situation is typical of much of Uganda.

The importance of the bush paths of tropical Africa is rightly stressed by G. H. T. Kimble[37], but the situation is perhaps somewhat idealized when these paths are said to be very well adapted to most of the people's present needs. Headloading is often all that people can afford and much takes place even along the roads, but in some places other means of transport would certainly be used if roads existed. Headloading imposes a very

great burden, especially on the women of Uganda: any reduction of it is welcome in itself, and could have important economic consequences. Motor transport allows a far greater volume of goods to be moved than when the limit is set by physical strength. Production, consumption and exchange of produce may all be encouraged when moving it requires less effort; and the women are allowed more time in which to dig, weed or harvest the crops.

One merit of investment in new minor roads is that, unlike major highways or railways, they are always complementary to, rather than competitive with, existing transport facilities. The benefits they bring are not off-set by any reduction in the value of other roads, and indeed they should often lead to increased use of the present roads and railways. The benefits they bring are felt in only a very small area, but they may be very great, both economically and socially, for a road where none existed before represents a more fundamental change than bitumenization of a main road or even railway construction. Investment of this type may bring the greatest return in Uganda, and the possibilities should be closely examined.

Conclusions

The chapter has provided no precise answer as to the relative value of roads and railways in Uganda. It has been noted elsewhere that 'it is relatively simple to establish the principles that should be observed in any rational economic division of traffic between sectors of the transport industry, but it is well nigh impossible to determine satisfactory values for the concepts by which the principles are expressed'[38]. The same applies in this case, for many of the concepts are not capable of measurement.

There is no doubt that road transport of goods plays an extremely important part in the economy of Uganda, and that its role can easily be underestimated by outside observers. An example is provided in the study made by I. S. Van Dongen, who noted that 'it may be observed from Table 2 that, of all the transport media of British East Africa, the regional railroads have commonly borne the greatest freight load'[39], when the table took no account of private road transport. The lack of data on road transport is one reason for such statements, although it cannot excuse them. Roads must carry a much greater tonnage of goods in Uganda than railway services, for they are used at some point by virtually all the traffic handled by rail, as well as by that which does not move over the railway system. But insufficient data is available to determine which form of transport bears the greater load in terms of ton-mileage. It is most likely that road transport plays the larger part in movements within Uganda, but that the railway's contribution is greater if movement between Tororo and Mombasa is taken into account.

Road and rail transport are to a considerable extent complementary in Uganda, and there is certainly a place for each in the economy. Road transport could no doubt handle the freight trade of the country far more effectively today than even ten years ago, but the returns from exports would be lower, and the cost of imports higher than they are now. On the other hand only road transport can perform such tasks as the collection

of produce from scattered rural buying posts. Road and rail sometimes compete for traffic, but each also assists the other to play a greater role in the country. In terms of its economic geography, the railway has clearly made a major contribution to the character of the country, but road transport has been equally significant in that it has enabled the effects of the railway from the coast to be felt throughout Uganda. Because of this the railway is not today of vital importance for the pattern of economic activities within the country.

The one sense in which rail and road are always competitive is in the claims made for the limited development funds available. Capital allocated to an extension of the railway system could alternatively be devoted to road improvement, either in the same area or elsewhere. An assessment of the probable return is required in each case, along with an examination of the extent to which the value of existing transport facilities will be enhanced or reduced. Hawkins suggests that 'the planning of road improvements in Uganda should not be inhibited by considerations of the loss of rail traffic to the roads . . . it is to the railway's long term advantage to see the roads used as much as possible'[40]. However, it is far more to the advantage of the Railway Administration, and of the public, to see more use made of certain roads than of others. In a recent report to the Uganda Government, H. R. Meyer even states that railway capacity is a subject not directly related to an economic evaluation of the road development programme[41]. Road improvements should certainly not be inhibited by the rail system, but priorities should be guided by it. It may be argued that a rail extension was unjustified, but once construction has begun it becomes an established fact to be taken into consideration when planning expenditure on roads. Where funds are limited there is a clear case for developing complementary facilities rather than duplicating existing ones, and for concentrating on roads feeding the railways rather than those running parallel to them. It is encouraging to note that the International Bank report offers a similar view: 'The program we approve for roads provides for no extensive construction of new major roads. After 1962/3, the main expenditures would, in fact, have to be on secondary roads'[42]. In the years ahead capital will be invested in railways, major roads and local roads in Uganda, and if this is to bring the maximum return there must be a greater degree of co-ordination of road and rail policy than has existed in the past.

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RAIL TRANSPORT IN TANGANYIKA AND KENYA

TANGANYIKA

IN contrast to Uganda, Tanganyika has a long coastline and is therefore not dependent on a railway for the whole of its overseas trade. The capital, Dar es Salaam, and the second town, Tanga, are both ocean ports, and a substantial quantity of imports into Tanganyika must make no overland journey. Both towns grew up, however, at the point where a railway ran inland, and most of the exports and imports passing through them are railed from or to places inland. Most of the 9¼ million people of Tanganyika are scattered over a country four times larger than Uganda, with a markedly peripheral distribution, and therefore the demands on its transport facilities for internal movements are very great[1]. The situation was summed up in 1945 by J. R. Farquharson, later General Manager of E.A.R. & H., as follows: 'The need for a satisfactory transport system is particularly important in Tanganyika, where productive areas are widely separated, and where the output of each area is relatively small. Transport is of profound import in determining the distribution of economic activities, in binding together resources and markets into an integrated economy, in linking regions of different types and in ensuring, under reasonable travel conditions, the mobility of the Territory's human resources'[2]. This statement of the importance of transport is hardly open to question, although attention will be given to the extent to which the railways in particular have 'determined the pattern of economic activities', but there is much less agreement on the matter of whether Tanganyika now has 'a satisfactory transport system'.

The first railway to be built was that leading inland from Tanga, begun in 1893 and completed to Moshi in 1911 and to Arusha in 1929. The Central Line from Dar es Salaam made much more rapid progress, being started in 1905 and completed to Kigoma in 1914[3]. A branch from Tabora to Mwanza was opened in 1928, and another from Kaliuwa to Mpanda has been in operation since 1950. After the Second World War a new line

Salaam, both over 750 miles away. Within the Region, however, there is no marked concentration of production near the railway or lake ports, while there is no evidence that cultivation anywhere else in Tanganyika has been prevented by transport costs. Over half the country's production of tea and tobacco takes place in Iringa and Mbeya Regions, which are wholly dependent on road transport. The only other important cash crop is cashew nuts, and almost all are grown near the coast in the south. The railway is of most significance for the very low value crops such as maize, which is produced for sale near the Tanga Line and in the Kilosa and Wami areas near the Central Line; but as in Uganda such crops play a very small part in the cash economy.

Minerals are of considerable importance in Tanganyika, accounting for about 15% of its export earnings, and mining is often closely related to rail transport. In this case, however, the chief minerals are diamonds and gold, both of which are despatched by air, and the railway is of value only for bringing supplies to the Mwadui diamond mine, which lies close to the Tabora-Mwanza line. The only mining activity for which rail transport has been essential was the lead working at Mpanda, examined later in the chapter. As in Uganda there are deposits of high-grade phosphates, and the exploitation of these is prevented largely by transport problems. A deposit of about ten million tons was found in 1956, seventy miles west of Arusha. It lies nearer to the coast than the Tororo deposits, but mining is not considered feasible on the basis of a 70-mile road haul in addition to a rail journey, while the lack of rail facilities makes local fertilizer manufacture less practicable than at Tororo. A reconnaissance survey for a rail extension was made in 1959, but phosphate traffic would not enable a line to be operated economically, even if 300,000 tons a year were handled, unless it were charged a rate higher than the commodity can at present bear, while there is little prospect of other traffic from this arid area.

Coal deposits of over 250 million tons exist at Ngaka in the south, and the failure to exploit these is often attributed to their inaccessibility. Even if the Southern Province Line had extended so far inland, or if a rail link to the Central Line were built, the cost of the haul would probably be too high for exports; but there are workable deposits of iron ore nearby, and coal could be used for steel production. As noted in an Economist Intelligence Unit report 'this is a case in which transport facilities become dominant as a factor governing development'[6], although it should not be supposed that their improvement would necessarily bring such development.

Manufacturing industry in Tanganyika is concentrated mainly in Dar es Salaam, and while the opportunities for the distribution of goods by rail contribute to this, the effects of the railway in guiding location are mainly indirect, for the importance of the port and the extent of urban development are the main attractions. Some industry has been established in Arusha also, and rail facilities have been of value for this, although one of the main attractions there is proximity to the Kenya market, and this connection can be made more easily and more cheaply by road than by rail.

Recent Railway Construction: Mpanda Branch

For purposes of comparison with Uganda it might be appropriate to consider individually the lines built in Tanganyika since 1945. The Mpanda branch, which extends 131 miles south-westwards from Kaliuwa on the Central Line, was opened in 1950. For most of its length the line runs through almost uninhabited tsetse-infested country, with a relatively reliable rainfall of 30 to 40 inches but with no signs of agricultural development. There is more settlement around Mpanda and beyond the railhead, although the economy there is predominantly of a subsistence nature. The line was built primarily to permit the exploitation of a lead deposit, then estimated at two million tons of 6% ore. Lead traffic on the branch amounted to 1,600 tons in 1951, and reached a peak of 14,248 tons in 1960 when it accounted for just over half the total traffic[7]. The main other items were grains despatched from Mpanda and petroleum products and building materials received there. Unfortunately, the lead deposit proved smaller than originally thought, and since the supply of economically workable ore has been exhausted, the mine has closed down. During 1961 the railway was used to move out much equipment, but it nevertheless ran at a considerable loss in that year, and its future is now in doubt.

The effects of the railway on agricultural development have been very slight, although it has assisted the export of maize, the chief crop of the area. Sales from Mpanda to the Grain Storage Department rose from 1,200 tons in 1951 to 5,000 tons around 1954, but they have not increased any further since then. In 1961 there was a sharp rise in other grain traffic, but it is not known whether this is likely to be a permanent change. The railway has carried the surplus agricultural production of the area, but it has not brought any new crops, and most of the potential remains undeveloped. The export of cattle from Ufipa District to the Dar es Salaam meat packing plant has been encouraged, but the movement amounted to only 2,594 head in 1960. The marked expansion of retail trade in Mpanda after 1950 appears to have been related more to the mine than to the railway, and many of the traders have now left. The impact of the line on the country between Kaliuwa and the terminus has been even smaller than on the area around Mpanda. There is only one intermediate station, and the freight traffic handled there has not exceeded 100 tons in most years. The railway was of vital importance to the mine, but its limited effect on other economic activities is clear, and is confirmed by the very scanty references to it in the Annual Reports on Western Province over the past twelve years.

As noted in Chapter 4, the Mpanda branch is comparable to the Western Uganda Extension in several respects, and the problem which it now presents may be repeated in Uganda before 1970. It is similar to the section from Musozi to Kasese in length and in the pattern of traffic, for it has depended heavily upon a single mine for its traffic. The volume of other freight, as well as of mineral traffic, has been much higher on the Western Uganda Extension, and its prospects of survival even if Kilembe mine should close

are brighter. But the experience of the Mpanda line casts doubts on the suggestion that a railway cannot be expected to have a great local impact within six years, but that the situation would be different after double that period; and it confirms the necessity for positive action to encourage the economic activities which a new railway may allow.

The Southern Province Railway

The construction of a third railway leading inland from the coast of Tanganyika was related to the ill-fated Groundnut Scheme, which envisaged large scale production of this crop in Southern Province, with exports reaching 400,000 tons by 1952, moved by rail from the Nachingwea area to a new port at Mtwara, 132 miles away. While this port was being developed a temporary line from Mkwaya, on Lindi creek, was built to Nangana and Nachingwea, and this was opened for Overseas Food Corporation traffic in 1949. By this time the Groundnut Scheme had been largely abandoned, but the railway was retained in the hope that it might encourage the realization of the economic potentialities of Southern Province. Following the completion of Mtwara Port, the whole line from there to Nachingwea was opened to public traffic in June 1954. Work on a further 73-mile extension to Lumesule Juu, begun in 1952, was abandoned, however.

It was the official view that 'in economic potential the Southern railway dominates every other project in Southern Province because of the development which may follow it . . . The importance of the railway in economic development hardly needs emphasis. By lowering freight costs on both imports and exports it will encourage business enterprise and in some parts will enable certain crops to be grown economically which have not been worthwhile in the past'[8]. The 1953 traffic estimates used by the Railway Administration were based on an even more optimistic assessment of the situation, anticipating 121,000 tons of freight in 1956 and 242,000 tons in 1960[9]. In fact the figures for those years were 32,043 tons and 25,064 tons respectively, while the traffic fell to 21,347 tons in 1961. The frequent statements to the effect that 'Southern Province has all the natural resources required for prosperity'[10] are perhaps not entirely justified, but there is undoubted scope for economic development, and it has been observed that 'this area has been found to be the best agricultural region of the three former Overseas Food Corporation areas'[11]. Transport problems were generally supposed to be the chief factor hindering rapid development, as stressed for example by I. S. Van Dongen, writing in 1954[12], yet the railway failed to have any appreciable effect on the area.

Economic development did take place in Southern Province between 1953 and 1957, but at a slower rate than in most parts of Tanganyika; and since 1958 some of the ground gained has been lost. In 1957 exports from Mtwara and Lindi ports totalled 103,294 tons: in 1960 they amounted to only 82,687 tons. Groundnut cultivation by peasant farmers has been little more successful than on vast mechanized farms, and groundnut traffic reached its peak of 1,211 tons in 1956. Cashew nuts form the chief cash

crop in the area, and exports of these have increased greatly over the past fifteen years. But although they provided the most constant traffic on the railway, production has expanded just as much in the areas not served by it, and the 7,775 tons railed in 1960 compared with a total export from Southern Province of 30,000 tons. The railway assisted an export of grains at first, but this traffic then declined steadily from 7,747 tons in 1956 to 3,977 tons in 1959. Sisal figures prominently among the exports from the area but few estates lie near the railway, and very little was handled. The land around the line is relatively well populated by Tanganyika standards, although there is also ample land for estate development, and it has no worse rainfall conditions than such agricultural areas as that between Mwanza and Shinyanga. The rail haul was shorter and therefore less costly than for most parts of the country, and for all the crops mentioned above world prices remained fairly stable during this period. Yet the railway failed to stimulate local agricultural development. The most important commodity for the railway was timber, shipments averaging about 10,000 tons a year. There had been no export in 1949, and the exploitation of timber was certainly assisted by the railway; but the resources are limited in scale and the main sawmill, on the Rondo Plateau, closed in 1961 when the best timbers were exhausted.

There is a slightly higher level of economic development further inland, especially around Songea where tobacco and coffee have been established in an area with higher rainfall but remote from rail facilities. The Southern Province Railway was of no importance for exports from that area, for they moved either northwards to Dar es Salaam, or by road to Lindi and Mtwara running parallel to the railway for part of the journey. A further extension of the railway to Tunduru or Songea might have had a greater impact on agriculture, but it is doubtful whether the expenditure would have been justified.

The generally low level of economic development inevitably results in a small volume of imports, and cargo received at Mtwara and Lindi amounted to only 33,847 tons in 1960. But of greater significance for the present discussion is the fact that of this total only 1,926 tons were moved inland by rail. The role of the railway was limited by the traditional concentration of the import trade at Lindi and the reluctance to change to the new rail-served port at Mtwara, and by the great improvement in road transport facilities. Around 1949 the road from Masasi to the coast was passable for only seven months in the year; today road transport is almost always available, at about 30 cents per ton-mile if there is a return load. Lorries therefore creamed off all the high-rated import traffic and handled just enough export traffic to ensure double loading, leaving the railway with only the low-rated goods and with very unbalanced up and down traffic. If the railway was of any real assistance to the area it was perhaps by encouraging road hauliers to provide cheaper services in order to compete effectively with it.

It quickly became clear that Nachingwea railhead provided little attraction for trade. There were two Asian shops there in 1956, but only one the

following year, while the few African traders operated on an extremely small scale. As at Kasese, it was evident that the railhead function alone was insufficient to stimulate development. A branch to Masasi, the local centre of trade, was therefore built in 1958, but even there only 668 tons of freight were received the following year. The railway certainly did not benefit the area through any assistance given to the import trade.

Only in respect of passenger traffic did the line prove a success, but passenger earnings of £15,000 a year were not of great significance compared with overall losses of between £210,000 and £250,000 each year from 1955 to 1961. It has often been said that although the Groundnut Scheme was a failure, it left Tanganyika with certain assets, among which was the Southern Province Railway[13]. In fact the line was a severe liability. In 1961 the total revenue of £45,154 compared with expenditure of £290,113, and the Railway Administration estimated the average cost of moving freight as 2/42 per ton-mile, of which they paid 0/47, the Tanganyika Government 1/69 and the customer 0/26[14]. It was clear that no dramatic improvement could be expected, and in June 1962, the line was closed. A sad chapter in the story of East African Railways was also closed, but it is important that its lessons should be remembered.

The Kilombero Valley and the Southern Highlands

To relieve the gloomy picture presented by the Mpanda and Southern Province lines, it is appropriate to examine a rail extension for which the prospects are much brighter; and also to consider an area which is increasing in prosperity although it is not served by any railway. Proposals have been made for a line leading south from the Central Line and extending into Zambia, linking up with Rhodesia Railways at Broken Hill. This project was the subject of a lengthy report some years ago[15]. The economic case for the 1,000-mile link is at present very slender, but a branch was laid along the first forty-four miles of the route, from Kilosa to Mikumi, in 1960, and the line is now being extended a further twenty-four miles to Kidatu. The main function of the Mikumi branch has been to handle traffic moving to and from the Southern Highlands, rather than local traffic. It is too early to judge the local impact, but it might be noted that there has been no demand for an intermed iate station for freight traffic, while E.A.R. & H. estimates for 1970 include only 800 tons of local traffic in each direction, compared with thirty times as much Southern Highlands traffic on this line. The extension to Kidatu passes through the narrow gorge of the Ruembe, and is unlikely to have much effect on the immediate vicinity; but it is expected to be of great importance for the vast Kilombero valley area to the south, especially if it is extended further in due course. The region is among the best watered in Tanganyika, and surveys suggest that it offers enormous potentialities for agricultural development. Yet from an area of 1.7 million acres exports of agricultural produce in 1960 totalled only 4,800 tons, including 2,300 tons of rice and 1,200 tons of cotton[16]. After a very detailed survey, a Food and Agriculture Organization mission proposed development schemes, including large-scale irrigation, which would

bring 93,600 acres into cultivation by 1970, yielding exports of 100,000 tons a year, and suggested figures twelve times larger for long-term plans[17].

Many factors will determine the extent to which these plans come to fruition, and it is quite clear that rail transport alone is not going to bring about development on this scale by 'opening-up' the area. In the report on the Kidatu extension, the Railway Administration noted that 'most of the area is not cultivated, mainly because of lack of flood control but also because of under-population and the presence of tsetse'[18]. Transport problems were not put forward as a contributory factor, for the other considerations are of more fundamental importance. Nevertheless if greatly increased agricultural production becomes feasible from other points of view, a railway would certainly be of great value to the area, especially since the road network is very poor, much of the produce is likely to be relatively low value foodstuffs, and the district proposed by FAO for first stage attention is in the far south near Makumbako. The plans may prove over-optimistic, however, and since a railway should more properly be regarded as a means of assisting rather than stimulating such development, it would be wise for construction to take place only if and when settlement and production are clearly under way, rather than in advance of them, even if this requires the operation of subsidized road transport for a short period. Tanganyika cannot afford a repetition of the experience in Southern Province, and although the prospects in the Kilombero Valley are much brighter, there are many very great problems to be overcome.

The extension to Kidatu is already economically justified, for a large sugar estate has been established in the vicinity and its production is almost certain to rise to 30,000 tons of sugar annually in the near future. The Mikumi extension has already proved of value for the import of supplies, and in 1962 it began to handle sugar. Its construction was one factor encouraging the decision to proceed with the project, for it seemed most unlikely that lorry transport would have been as cheaply or abundantly available as in Uganda, while the Kilombero sugar must be moved over greater distances than much of that from Kakira and Lugazi. The line to Kidatu will give further assistance to the estate, while the estate will give assured traffic to the railway. Plans have also been made for the manufacture of tapioca from cassava, already grown in this area, with exports of over 30,000 tons a year, and rail transport could assist this activity; but in this case no action had been taken by 1963.

The possibilities of an extension beyond Makumbako to Ilela excite considerable interest, for this would give rail access to the mineral resources near Ngaka, mentioned earlier. There is little prospect of their being exploited in the near future in the absence of rail transport, but there is no guarantee that this would occur even if a railway were built; and without such a guarantee the large capital expenditure on a line to Ilela does not at present seem justified. One of the factors often put forward in favour of an extension far beyond Makumbako is similar to that which encouraged the building of the Mikumi branch, that there is already substantial traffic

passing to and from the Southern Highlands which would use a railway. Although this encourages the idea of extending the rail system, it also offers an example of the amount of development which can take place far from a railway.

The situation in relation to agriculture in the Southern Highlands is very different from that of mineral development around Ngaka. It has already been noted that Mbeya and Iringa are the leading Regions in the production of tea and tobacco, and that coffee is developing rapidly; the Colonial Development Corporation recently invested £1½ million in the wattle industry in the area. It has been a leading area for European settlement in Tanganyika, while within the African peasant economy the cash sector is now expanding. Although the East Africa Royal Commission maintained that 'the whole area is remote and almost utterly lacking in communications'[19], it has in fact long been served by E.A.R. & H. road services, which previously connected the area to Kilosa and Morogoro on the Central Line, and now link it to Mikumi. In addition, several large road haulage firms operate in the area, the most important having some fifty-five lorries in 1962. The extent to which road transport satisfies many of the needs of the Regions is indicated by the fact that some traffic moves the whole way to and from Dar es Salaam by road rather than using the Mikumi railhead, and by the official statement that increasing road competition of this nature was the major reason for building this branch[20]. The Mikumi line has been of value to the Southern Highlands by allowing a lower charge for the rail/road service to the area, and a longer rail extension into these Regions would probably assist certain activities. But although the lack of rail facilities may have affected the economic geography of the area by encouraging concentration on relatively valuable products rather than low-value crops such as maize and wheat, it has by no means inhibited all commercial activity.

The Mnyusi-Ruvu Link

Until very recently there was no rail connection between the Central Line and the Tanga Line, but in 1960 construction began on a 120-mile railway joining the two. The link, built at a cost of £2.9 million, was opened in August 1963, and provides a through transit between Dar es Salaam and both northern Tanganyika and the main Kenya-Uganda line. The alternatives offered previously by E.A.R. & H. were a road service between Morogoro and Korogwe, or the steamer connection across Lake Victoria. In either case the journey involved transhipments, which caused delays and damage and increased costs, and this undoubtedly discouraged north-south movements to some extent. It is hoped that the railway will assist internal movements within Tanganyika, and also trade with Kenya; but the most pressing reason for building the line was the opportunity it provides for the transfer of locomotives and rolling stock between the two lines, which experience their peaks of traffic at different times of year. Thus the International Bank mission observed: 'This connection is long overdue. It will close the gap between the two main parts of the railway system, and make possible substantial savings in operations, particularly by permitting

an interchange of rolling stock'[21]. It is interesting to note that as some other justification for the line exists, no interest has been shown in its possible effects on the country through which it passes, and no claims have been made that it will provide any stimulus to local economic activity. There is in fact no reason to suppose that the line will have any great local impact if no efforts are made to encourage this.

Conclusions

There is no doubt about the importance of the railway in the Tanganyika economy, for it goes far towards overcoming the problems of distance which the country faces. In 1962 large areas still had no road connection with Dar es Salaam, and for these the railway is vital for any development beyond a subsistence economy. The role of the railway system in the economic geography of the country is less obvious, for the pattern of economic activities does not closely reflect that of rail services; but there are many instances where it has been an important factor, and remains so today. This applies most strongly in the case of commercial production of low-value crops, and the exploitation of such mineral resources as coal or phosphates. The importance of rail facilities today has sometimes been over emphasized, however, and there is a conflict of views on the extent to which inadequate communications are now a major factor limiting economic activity in Tanganyika. When a United Nations team visited Tanganyika in 1957, they reported that 'the Mission was able to see the dire need for better transport and communications in the Southern Highlands and Southern Provinces'[22]. Yet the small effect of providing these in Southern Province, and the extent to which development is already taking place in the Southern Highlands have been indicated above. It is not suggested here that the country would not benefit from improved communications, but only that they, and particularly railway building, should not be regarded as the key to development. This is the view of the International Bank mission, which reported as follows: 'There is a widespread belief in Tanganyika that lack of transport facilities is holding back the economic development of the territory. The Mission's investigations suggest this view to be commonly exaggerated'[23].

KENYA

Kenya is a smaller country than Tanganyika, and it is not land-locked as is Uganda; yet in many ways the railway seems to have been more important to it than to either of the other two countries. Indeed, it is commonly asserted that Kenya as it is today was made by the railway. Some of the statements made in the past rather overstated the case, in such terms as: 'The railway is the beginning of all history in Kenya. Without it there would be no history of Kenya'[24]. Few Kikuyu or Luo could accept the first sentence, but there is much truth in the second, for Kenya as a unit in any sense is entirely a product of the period since the Uganda Railway was built from Mombasa to Kisumu. Such statements have been made more often about Kenya than about the neighbouring countries partly

because there is a more apparent correlation in both time and space between railways and economic development in Kenya. The cash economy, up to the present, has been dominated by the European population, whose arrival followed the opening of the railway, and the expanding African contribution rests to a large extent on this foundation. Nevertheless a closer examination is necessary before it can be accepted that the railway has been the main factor guiding the pattern of economic activity, while specific attention might be given to the question of whether it is still an active factor today.

In so far as there is a relationship between the distribution of economic activities and the main railway line across the country, there is no doubt about which came first. The engineers came to Mombasa in 1896 to build the 'Uganda Railway', and Kenya was merely a tract of land which had to be crossed to reach the goal of Lake Victoria. It was an obstacle which rendered the railway necessary, rather than country which the railway might serve. It soon became apparent, however, that if the line were not to be a severe financial liability, traffic would have to be generated along much of its length; and this factor was largely responsible for the encouragement given to settlement by emigrants from Britain in what became known as the 'White Highlands'[25]. Although it cannot be stated categorically that no European settlement would ever have taken place in the absence of a railway, there is no doubt that there would not have been the same urge to promote settlement, and that the attractions would have been very much less, especially at first.

European agriculture contributes the greater part of Kenya's exports, and although the common inference that it is therefore the most important element in the economy is unjustified, it will be given particular attention here since it is the most distinctive feature of the country in East African terms. There is a very clear correlation between the area of European settlement and the railway pattern, including both the original main line and the branches later built from it. But while the railway may have been the major historical factor in the establishment of British settlers in Kenya, their distribution has certainly been influenced by many other factors in addition to the railway. These include the distribution of land with an attractive physical environment, for the greater part of Kenya offers no potentialities for agriculture. The better endowed areas coincide to a large extent with those within reach of the railway, and it is therefore not immediately obvious which is the more important factor. For most of the first 250 miles inland from the coast the climate has been dominant, for the rainfall rarely reaches 30 inches in any year, and little settlement has taken place even beside the line. The railway then passes into wetter and cooler country, where environmental conditions have much more in common with Europe, and where it has been possible to develop an agricultural economy very much on English lines, together with one based on the estate production of such crops as coffee and pyrethrum. Alienation of land took place along the railway almost as far as Kisumu, and in this highland area the pattern of settlement was clearly guided by distance from the line. Around Kisumu, and in certain parts of the highlands, European settlement

was discouraged by quite a different factor, namely the distribution of the African population. There were no large tracts of empty land in the Kiambu area, north of Nairobi, and few in Nyanza Province.

The pattern of European agricultural settlement did not therefore take the form of a belt following the railway from Mombasa to Kisumu. Only for a short stretch south-east of Nairobi is this pattern to be found. Settlement took place rather in those areas which offered suitable physical conditions, were not already under African cultivation, and were reasonably accessible. This last term is deliberately imprecise, for this is the condition which had to be satisfied less fully as the years passed and as the land filled up. Of the three factors mentioned it was the one in respect of which action could most easily be taken, and as settlement spread away from the main railway line branches were built from it.

A line was built from Nairobi to Thika in 1913, and extended to Nanyuki in 1930; another was built from Nakuru across the Uasin Gishu plateau to Eldoret and on to Uganda during the 1920s; and branches were laid to Solai and Kitale in 1926 and to Thomsons Falls in 1929. In these cases it is not at all clear whether the spread of settlement brought the railways or vice versa. The Kitale branch was regarded as urgent because the development of Trans-Nzoia had gone far ahead of the transport facilities: many thousand acres of wheat and maize were being grown while the area still depended on a 100-mile ox-waggon haul to railhead[26]. Around Thomsons Falls such progress had not taken place, yet it was thought that the area 'is not dependent on such a railway for future prosperity ... (although) it possesses potentialities which will justify such a branch railway'[27]. However, Agriculture Department records suggest that the branch lines did encourage cultivation in the highlands. The cultivated area on European farms in Trans-Nzoia District rose from 36,100 acres in 1924 to 78,600 acres in 1927 and 107,200 acres in 1930, although the area occupied by the settlers remained almost constant. In Nyeri District the greatest expansion of cultivation, from 77,000 to 141,000 acres, took place between 1927 and 1930 during which period it was traversed by the Nanyuki branch. The Thomsons Falls line was more important for stock rearing; while the cattle population of the whole of the White Highlands rose only from 213,000 to 226,000 between 1926 and 1930, the numbers in Laikipia District, served by this branch, rose from 20,000 to 36,000. There seems ample evidence that the extensions of the railway system, as well as the original line, played some part in guiding the pattern of European settlement. Although this advanced ahead of rail facilities at times, it is doubtful whether the farmers would have survived the Depression if they had not been served by the various branches. Today land much further from any railway could be farmed as a result of the spread of motor transport, but political developments have led to the crystallization of the pattern as it was shaped by pre-war conditions. Today also, some producers of coffee and pyrethrum consider that they could dispense with the railway, but this does not apply to the producers of maize and wheat, for which transport costs are of much greater relative importance, and for which very low freight rates are charged.

The relationship of the distribution of African population, and therefore of peasant agriculture, to the railway system is far less close. This is to be expected since the pattern was established long before the building of railways, and has not greatly altered during this century, and since little attention was given to the distribution of population when either the original line or the later branches were built. The main line did in fact pass through the two main concentrations of population, in Central Province and in Nyanza, but in both areas very large numbers of people live far from a railway. Rail transport facilities might, however, influence the distribution of peasant cash crop production. In the past the volume of African-grown crops entering commerce was small, but it is now rising rapidly. Much the most important export crop is coffee, which occupied 33,000 acres on African farms in 1961[28]; it is notable that the Districts with the largest acreages were Meru (8,766), Embu (5,507), and South Nyanza (4,938), none of which are served by any railway. The distribution of the main export crop common to Uganda, Tanganyika and Kenya thus shows little relationship to rail facilities in any of the three countries.

One important difference between Kenya and Uganda is the significance of maize as a cash crop in the former, on African as well as European farms. Another is that whereas the maize that is sold in Uganda moves almost entirely by road, that sold in Kenya generally moves by rail. E.A.R. & H. handle over a half million tons a year, and this makes a substantial difference between the two countries in the importance of the railway for internal freight traffic. The main reasons for the use of the railway for maize movements are the marketing system in force and the scale of the traffic. The crop is controlled by the Maize Marketing Board, which uses the railway as a matter of policy, and which operates on a sufficiently large scale to reap the full benefits of very low waggon-load rates. Policy differs from that of the Uganda marketing boards in that transport costs are not spread over all producers, but are borne directly by the growers in each District. There is therefore far more reason for maize production in Kenya to be affected by rail facilities, than for cotton production in Uganda to be so influenced.

Nyanza Province witnessed the only railway construction in Kenya intended to serve the African population, for an extension from Kisumu to Butere was built in 1930. This line aroused markedly less interest than the others in Legislative Council, and records of its effects are difficult to trace. A brief examination of the surrounding country and of recent agricultural statistics do not suggest any difference between the area beside the railway, around Yala and Butere, and that further away. The line carries large quantities of maize, but very little other freight, and it is exceptional in East Africa in that it earns more revenue from passengers than from goods.

As elsewhere in East Africa, mineral exploitation has not provided an important stimulus to railway building, and there is only one example of the close relationship often found between rail facilities and this type of activity. This is provided by the Magadi soda ash deposits, whose working

depends very greatly upon the only branch line not so far mentioned, that which was built from Konza in 1914. Although this line has been in existence for fifty years, virtually no development has taken place beside it, for it crosses country with very low rainfall and no apparent economic potential. Supplies for and products from the soda workings still provide almost all the traffic on the line.

Rather more urban and industrial development has taken place in Kenya than in either Uganda or Tanganyika; and the view that Kenya was brought into being by the railway is encouraged partly by the close relationship between the main towns and the railway. It is no mere coincidence that the four largest urban centres, Nairobi, Mombasa, Nakuru and Kisumu, all lie at points along the Uganda Railway. Of the four only Mombasa existed in 1896, and this town has grown out of all recognition through its position as the only ocean port not only of Kenya but also of Uganda, a function for which it is almost entirely dependent on the railway. Nairobi is wholly a railway town in origin for it grew from a construction camp, and later a maintenance point, mid-way between the coast and Lake Victoria, at the start of the difficult section across the highlands. About this area the line reaches well-watered land for the first time after leaving Mombasa, and enters land offering attractions for European settlement. Since urban development rested entirely in the hands of the immigrants, European and Asian, a rail-served site in this area offered strong advantages, and Nairobi has since become the most important administrative, commercial and industrial centre in East Africa[29]. The railway continues to play a valuable role in assisting the exercise of these functions, while it might be noted that even today the railway workshops themselves employ far more people than any other industrial concern in the city. Nakuru and Kisumu also owe their origin to the railway, the former being an early depot at the foot of the second main climb and later the most important junction on the system; the latter being the original terminus and transhipment point for the lake services, and still much the busiest port on Lake Victoria. Both towns were greatly assisted in their development as the regional centres of the highlands and Nyanza Province respectively by their strategic positions on the transport network, and although this may no longer be of such significance, its past importance has influenced the present pattern.

Manufacturing industry in Kenya is very largely concentrated in the four largest towns, and most of the leading concerns are established in Nairobi or Mombasa. These are the obvious sites for almost any industry, the choice between them generally depending on the origin and bulk of the raw materials and on the opportunities for sales overseas. A paint manufacturing firm, for example, has little hesitation in choosing a site in or near Nairobi for its factory, and it is impossible to assess the direct importance of rail facilities as opposed to other factors in this decision. In the case of the new oil refinery, siting at Mombasa is closely related to the fact that the railway can carry its products to markets throughout Kenya and Uganda; but all other factors also suggest a Mombasa site, and there is nothing to favour any other point on the Kenya coast.

With each new stage in Kenya's economic development the importance of the railway tends to increase, as more traffic is handled; and the distribution of such developments is often guided by the existing pattern of economic activity, which has in turn been affected by the railway. But this does not indicate whether the railway is an important factor today in the sense that areas remote from it are being hindered in their economic development, and that the extension of the network would bring great changes in the distribution of economic activities. No new railway building has taken place for the last thirty years, and the opinion is often voiced that it is time that the Railway Administration turned their attention to Kenya once again in this respect. The greater part of the country offers no potential for development, and could benefit little from rail facilities unless minerals were found: but interest is being taken in the possibilities of four short extensions, all of which are marked on Map A.

Kedowa-Kericho-Kisii

An extension into Kericho and South Nyanza* Districts has been under discussion for many years. The first economic survey, undertaken in 1924, indicated that 'the most optimistic expectations of increased output from the Kericho and Sotik area as it stands today, would not show enough traffic to warrant the construction of a railway'[30]. The latest survey report, produced in 1957, reached a similar conclusion[31]. Part of the area involved is endowed with relatively fertile soils and an evenly distributed rainfall of 50 to 70 inches, while the overall population density in Kericho and South Nyanza is about 150 per square mile. The most valuable export at present is tea, produced mainly on estates around Kericho, and now railed from Lumbwa. A railway would bring little convenience to the estates since a road haul to the nearest station would still be necessary, while any saving from covering 20 or 30 miles by rail rather than by road would be insignificant for such a valuable commodity. Rapid expansion is taking place without a local railway, and is likely to continue as the crop spreads to peasant farms. The chief export by weight is maize, and if there were a railway to Kisii a slightly higher price could be offered to the growers; but as the Kericho depot is only twenty-two miles from Lumbwa station, and Kisii is served by a lake service through Kendu Bay, the reduction in transport costs could not exceed 1/- per bag. The deduction of over 3/- now made in these Districts does not seem to be due entirely to the lack of local rail facilities. Two activities which might benefit from a branch are wattle production and the dairying undertaken in the Sotik area. The wattle industry is now facing many problems other than transport costs, however, while the present road hauliers would compete strongly for milk traffic. It is impossible here to assess the benefits of the line, although there certainly would be some for Kisii, which now has the alternatives of a long road haul or a slow and inconvenient route through Kendu Bay. The 1957 committee observed that 'arguments have been put forward that the slow expansion of production was due to the lack of transport facilities, particularly of a

*This has now been subdivided into South Nyanza and Kisii District

railway. It is not thought by the committee that this has been a major handicap to the area'[32]. They therefore did not consider that there was sufficient justification for the expenditure of £3,150,000 on a line for which the traffic forecast was of 50,000 tons of outwards freight and 40,000 tons inwards. This estimate of the cost seems very high for an 88-mile line: if it could be reduced the case for construction would become stronger, but it would have to rest primarily on the level of existing traffic rather than on any assumption that it would have a great impact on the area.

Nanyuki-Meru and Sagana-Embu

Various suggestions have been made for providing rail facilities for Meru and Embu Districts, east of Mount Kenya, the most promising being the extension of the Nanyuki line to Meru and the construction of a branch from Sagana to Embu. Meru traffic handled at Nanyuki station amounts to about 20,000 tons annually, and while this might cover operating costs it would not also cover the interest charges on the £1½ million required for a 50-mile extension. The justification for construction would have to be an anticipation of increased economic development, yet little mention was made of this in the 1960 Legislative Council debate on the subject[33]. Coffee production in Meru has already been mentioned, and a small reduction in transport costs would be unlikely to affect the already rapid rate of increase. A railway should result in substantially higher prices to the growers for lower value produce sold in the Nairobi area, but the need for a road haul did not prevent 8,850 tons of maize, 2,890 tons of potatoes and 2,130 tons of beans being moved out via Nanyuki in 1959. The situation is similar in Embu; in both cases some benefit could be expected from a railway, but probably not enough to warrant the expenditure involved. A new factor has recently arisen for during 1962 a first-class road was under construction to replace the old winding mountain road linking the two Districts. This may bring some re-orientation of trade, with an increasing proportion of Meru traffic passing through Embu rather than Nanyuki. A railway from Sagana to Embu might then become an economic proposition, since it could handle the traffic of both Districts. In this way the railway and the new road could help each other to help the area more. But no plans for rail construction have been made as yet.

Bungoma-Butere

A 27-mile link between the Butere branch and the present main line has frequently been discussed since a survey was first made in 1926, but there has never seemed much justification for it. The Mumias area should benefit somewhat, but it suffers little from its dependence on Butere and Bungoma stations. The volume of through traffic would probably be very small, even though the line would link Kisumu with Uganda. The traders of Bungoma show interest in the possibility of increased trade with Kisumu, which they regard as their regional centre, but it is not certain to what extent they would in fact use the railway. The official view is that the line would neither benefit the surrounding area greatly, nor assist the Railway

Administration financially, and it therefore has a very low priority for investment.

Conclusions

The railway has certainly played an extremely important part in the history of Kenya, and through its influence over the past fifty-five years it has profoundly affected the geography of the country, probably to a substantially greater extent than in Uganda. The significance of the railway seems far greater for the distribution of European than of African agricultural activities, however, and this may mean that its importance for the economic geography will decrease somewhat in the future. One reason for the difference is the fact that the pattern of European agriculture became established during the first thirty years of the century, whereas African cash crop production is to a large extent a phenomenon of the past fifteen years. In addition, it is clear that large-scale European farming is better able to benefit from rail transport than African peasant production, and this is of significance for Uganda, with its predominantly peasant economy. The importance of the railway is also greater for crops such as maize than for those such as coffee, and in Uganda the transport requirements are mainly for the latter type. One marked contrast between Kenya and Uganda which affects the role of the railway in all economic activities is the difference in the position of road transport. In Kenya restrictive licensing has been in force for many years, while the roads themselves have not been given as much attention as in Uganda.

Kenya is not so dependent as Uganda on rail transport for its overseas trade, but several factors have combined to make it rely on the railway to a much greater extent for internal transport requirements. Nevertheless, as elsewhere in East Africa, the importance of the railway as a factor directly affecting the distribution of economic activities is much smaller today than in the past, and there is little evidence to suggest that any areas are being severely hindered by lack of rail facilities. No startling consequences could therefore be expected from any extensions of the system. A railway would, however, be of value to an area such as Embu, and if present traffic prospects are better than for a line such as that from Pakwach to Okollo, then Kenya can fairly claim some further attention, although it is probably in Tanganyika that the greatest assistance can be given to economic development.

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CONCLUSIONS

THERE is no doubt whatever that the railway services are playing a role of great importance in the economy of Uganda. They handle virtually all overseas exports and imports and most of the goods moving to and from Kenya and Tanganyika, the volume of this traffic amounting to over $\frac{3}{4}$ million tons a year. They also carry a substantial volume of internal freight traffic, although road transport is now more important for local movements of goods.

The value of the railway to Uganda is particularly great on account of its distance from the coast. The nearest ocean port, Mombasa, lies 675 miles from Tororo and 1,032 miles from Kasese. In this respect there is a substantial difference between Uganda and Kenya: in terms of tons of freight carried the railway performs a much greater task for Kenya, but in terms of ton-miles a greater volume of Uganda traffic is handled. Uganda is also in a very different position from many of the West African countries, whose transport systems have received rather more attention from geographers than those of East Africa.

The extent to which the commercial economy of Uganda is dependent on overseas trade also heightens the importance of the railway to the coast. Most primary production which takes place outside the subsistence economy is dependent upon exports, while a large proportion of the requirements of the people of Uganda which involve purchase for cash have to be imported. Again there is some contrast with Kenya, where production for export plays a smaller part in the economy. The Gross Domestic Product of Uganda is estimated at about £160 million compared with £223 million for Kenya[1]; the figures for the value of overseas exports in 1963 were £51.5 million and 43.8 million respectively.

At the same time a number of factors serve to limit the role of rail transport in the economy, especially for the movement of goods within Uganda. These include the dominance of peasant production, rather than large-scale enterprise which is better fitted to make use of improved rail facilities; the structure of trade, apart from the statutory marketing boards which

provide a large proportion of the rail freight; the small extent of urban development which must always rest on movement of goods to and from the towns; the official policies favouring local self-sufficiency in food supplies; the relatively dense and well-maintained road network; and the refusal of the Uganda Government to restrict competition from road transport.

The railways within Uganda play a useful part in the internal movement of freight, and make a rather larger contribution to the economy through their function in moving export and import traffic to and from Tororo. In terms of ton-miles of Uganda traffic handled, however, the task performed by the line across Kenya is about three times greater than that of all rail services within Uganda.

The main concern of this study is the role of the railway in the economic geography rather than the economy of Uganda. The chief conclusions reached therefore concern not so much the task that the railway performs as the influence that it has on the range of economic activities which take place within Uganda, and the distribution of these within the country.

An examination of the various activities suggests that rail transport has been a factor of importance in the existence of a number of them, but it also appears that its significance today is not as great as is often suggested. The line across Kenya and the services within Uganda provide the opportunity for the production of a wide range of goods for export and for much internal trade; but they can do no more than this, and numerous other factors determine the extent to which the opportunities are taken. The railway to the coast does not overcome all the problems posed by the inland location of the country, as indicated by the failure to develop exports of bananas or iron ore and to market the cobalt produced at Kilembe. Among the forms of production and trade for which the railway does provide adequate transport facilities there are many for which it is not today essential. The International Bank Mission to Uganda observed that 'the freight charges for the principal exports, cotton and coffee, are low, perhaps less than the normal world-market fluctuations in the prices of these commodities'[2]. In fact the charge even for a road haul to Mombasa would be smaller than the fluctuations in prices that have taken place in recent years, and it seems likely that the main cash crops could be exported even if Uganda were wholly dependent upon road transport. In the case of many imported goods the effect of increased costs resulting from the use of road transport would be relatively small, and very few commodities now imported could not be moved in these circumstances.

There are only a few goods which can bear the cost of transport by rail but not by road, and therefore rail facilities are essential to only a few of the activities undertaken in Uganda. The most important example is perhaps copper mining, while cotton-seed cake could probably not be exported without the railway. For all internal and external trade some form of transport is required, and in very many cases the railway is the most efficient form available. Among the freight traffic handled are motor lorries and petrol, however, and these could now provide an alternative, even if less cheap, means of transport for most goods now moved by rail.

To a considerable extent the importance of the railway for the economic geography of Uganda lies in the legacy that remains from the period when it was the only practicable means of moving any but the highest-value goods to and from the coast, and when it was a prerequisite for most forms of economic development. This is particularly true in respect of the importance of cotton cultivation in Uganda. In this sense the existence of the railway today is of smaller significance as a factor in the present economic geography than the fact of its existence over the past sixty years, even though the system is now more extensive than during most of that period. If the railway across Kenya had only recently been built, life in Uganda would be very different from what it is; if it were now taken away less difference would probably result, although Uganda would certainly suffer.

This study of one factor in the economic geography of Uganda is concerned with not only the characteristics of the country as a whole, but also the distribution of economic activities within the country. In this respect the direct importance of the railway services today seems to be small. They were a factor of much greater significance in the past for regional differentiation within Uganda, as for the country as a whole, and in this way they have had much influence on the present economic geography. Buganda and the east were able to advance far ahead of the north and west, and they continue to benefit from this today. Recent urban and industrial development, for example, has been concentrated in the area between Kampala and Mbale because of the relative prosperity of the area, which was assisted by its accessibility in the past, rather than because of the transport facilities now available. Within the agricultural sector of the economy also, growth tends to be most rapid in Buganda and the east, but detailed examination shows this to be unrelated to rail facilities in most cases. Transport problems are not preventing the expansion of cotton growing in West Nile and coffee cultivation in Ankole, the establishment of a new sugar estate in southern Masaka, or the development of tea in Bunyoro and Kigezi.

Even in the past the influence of the railway services was confined mainly to the contrast between the more accessible and the less accessible areas of the country. At a local level rail facilities seem never to have been a major factor governing the distribution of economic activities. It is notable that the comprehensive survey of the agriculture of Uganda published in 1940 makes hardly any reference to rail transport[3] while the railway construction undertaken about ten years earlier received no more attention in the Annual Reports of the Department of Agriculture than have the more recent extensions to the west and north. Even urban development shows little relation to the railway pattern at the local level. In many countries there is a concentration of commercial activity in a narrow band following the 'line of rail'. Zambia and Rhodesia, where this term is in common use, offer a particularly clear example, while there are signs of the same phenomenon in both Kenya and Tanganyika. In Uganda it is entirely absent, and there is never any significant difference between the belt of country beside the railway and the areas further away.

Most discussions of the effects of improved transport facilities note the tendency towards the areal specialization of economic activity, and the breakdown of local self-sufficiency[4]. This applies to Uganda at the national level in so far as the country has advanced economically by specializing in cotton and coffee production, while obtaining many goods from overseas in exchange; but it should be noted that the commercial economy has been superimposed upon the subsistence economy, and that the latter has been very little disturbed by the advent of rail transport. The part played by the railway in encouraging either local or regional specialization within the country is very small. A striking exception is the cattle trade, for the railway helps Teso and adjacent Districts to supply areas which cannot satisfy their own meat requirements. In other fields such as fisheries or timber production no such development has occurred. Staple foodstuffs could be moved across the country by rail, as they are in Kenya, but Uganda is characterized by local self-sufficiency in this respect. There is at present only a very small inter-regional trade in food crops, even though the times of harvest differ between one part of the country and another. Manufacturing industry is concentrated mainly in the Kampala and Jinja areas, but road transport plays a larger part than the railway services in the distribution of the finished products throughout the country. A particular case of local specialization of economic activity is offered by urban development, but as R. W. Steel has shown[5], this has made less progress in Uganda than in most other African countries, and rail transport facilities seem to have had very little influence in this direction.

The role of rail transport in the economic geography of Uganda today is such that no dramatic effects should be expected from any new railway construction. Apart from projects planned in conjunction with railway building, such as Kilembe mine, the local effects of new lines are likely to be no greater than the local effects of the earlier lines. New railways can provide new opportunities for trade and for production, but in Uganda it appears that other positive action must accompany rail construction if the opportunities are to be realized. Without such action local changes are likely on a long-term basis only, and in some cases the more immediate result may be a greater concentration of economic activity in the areas already most advanced in this respect.

New railways may affect the local economy in many indirect ways. One example is the spread of new ideas and attitudes which should accompany cheaper travel for the people of the area. Another is the reduction in road transport charges which may result from rail competition, and from the rail haulage of the less convenient traffic. The significance of these considerations depends greatly on the character of the area served by the railway.

Without other positive steps to promote development the western extension cannot be expected to have any important effects, direct or indirect, on the long stretch of almost uninhabited country through which it passes, although if such steps were taken its role in the economic development of Uganda might be enhanced by the fact that it traverses an area which has not already advanced far on the basis of road transport.

In Uganda today railways cannot be regarded as being in themselves a stimulus to economic development; they may in some cases be an important condition for it, but for certain activities they are not necessary and for others they are not sufficient. It is important, therefore, that the very great value of the existing railway system to the country should not lead to exaggeration of the probable effects of its extension.

Some of the factors in this situation are the same as those mentioned earlier as limiting the role of the railway in the economy. The most fundamental is probably the nature of the economy, and especially the predominance of peasant production. The peasant farmer has normally not selected a certain part of the country in which to grow crops, but rather farms the land on which he has always lived. A very strong incentive is needed to persuade him to settle in a new area and rail facilities do not seem to be sufficient incentive. The lack of spontaneous settlement near the western extension, despite the existence of severe over-crowding in Kigezi, is an example of this. A railway cannot generally have a great direct effect even on the peasant farmers already in the vicinity, for most are in no position to make use of it. Their cotton or coffee must be taken away to a factory for processing before it is railed, and they are dependent on the traders in the towns for the marketing of other crops and for their supplies. In addition, peasant production is not a matter of carefully-kept accounts and studies of profit margins; in fact the profit margins are probably fairly large, although the turnover is very small. This reduces the significance of transport costs as a factor influencing the choice of economic activities undertaken.

The position contrasts with that of both plantation agriculture and manufacturing industry. Both forms of enterprise normally involve a conscious choice of location, and any slight advantage to be gained from a site near a railway may influence the choice. Plantations and factories are also usually self-sufficient in respect of marketing and supplies, and are therefore in a position to benefit directly from proximity to rail facilities. A sisal estate will often have its own siding, where its produce may be loaded and supplies such as fertilizers unloaded. Such enterprises are also generally based on relatively low profit margins and a high turnover, and transport costs may therefore be an important factor in the location of production. The effects of rail facilities on the distribution of economic activities should therefore be greater in a country where these include much plantation agriculture and manufacturing industry than in Uganda, where they are of relatively small importance.

The economic development of Uganda has taken place on the basis of a settlement pattern which was established long before the advent of rail transport, whereas that of Kenya or Rhodesia has depended very largely on a new structure built up since the railways were laid. It has been based mainly on crops which could not only be easily incorporated into the peasant economy, but are also of relatively high value, and can bear without great difficulty the costs of transport within Uganda by road. The provision of a railway where a road is now used for a 100-mile journey could not reduce

transport costs on cotton lint by more than 1% of its value. There is therefore little reason for the distribution of production to become closely adapted to the pattern of rail transport facilities.

One factor discouraging the full adaptation of the type of agricultural production undertaken in Uganda to the opportunities provided by the railway has been the official policy of preserving local self-sufficiency in foodstuffs, which was strongly criticized in the East Africa Royal Commission report[6]. Production of food crops for sale could have developed together with cotton and coffee cultivation, and since most are of relatively low value for a given weight the distribution of production might have shown more relation to rail facilities.

The structure of trade in Uganda severely limits the role of the railway as a factor influencing the distribution of economic activities. Most trade is in the hands of either the government-sponsored marketing boards or innumerable merchants operating on a very small scale. The former make full use of the railway, but one of their objects is the equalization of marketing conditions throughout the country. By the policies adopted the producers of cotton, and to a lesser extent of coffee, are shielded from the effects of differential transport costs, and those in an area served by rail transport therefore enjoy no advantage over those elsewhere. Nigeria is another country where the same situation prevails to some extent, and where the impact of new railway construction is likely to be reduced in consequence.

Most other local produce and most consumer goods are handled by private traders who operate on too small a scale to make full use of the railway. It has been said of rail transport that 'its benefits to a country are peculiarly dependent upon the capacity of a country's business class at large to adapt the location and scale of industry to the opportunities which the railroads afford'[7], and this applies to all forms of activity. In most parts of Uganda the business class consists of traders who are dependent on larger concerns in the main towns for their supplies. These concerns are well fitted to benefit from the railway from Mombasa to Kampala, but the structure of trade is such that similar advantage cannot be taken of the line into western Uganda. Most traders who have been in a position to expand their business have preferred to add road transport to their trading activity rather than to increase the scale of the latter, and this in turn militates against any great impact resulting from the provision of rail facilities. The few traders who are in a position to use the railway often consider it against their own interests to do so.

A fundamental difference between Uganda and some other countries of tropical Africa is the extent and quality of the road network. In Sudan, for example, there are no tarred roads outside the vicinity of Khartoum, and no roads passable throughout the year in some large areas of the country. In Uganda goods can be moved by all-weather roads to and from every District, although the cost is generally greater than for movement by rail. For this reason rail extensions in Uganda are likely to be of smaller significance for local economic development than those now under construction

in Sudan. New railways cannot open up parts of Uganda in the way that is still possible in some other countries, for the whole country has already been opened up as far as communications are concerned. This was true to a large extent even around 1950, and it has since become a factor of greater importance. The roads themselves have been much improved, especially with the bitumenization of those from Kampala to Soroti in the east and to Mbarara in the west, while road haulage charges have tended to fall during this period. If the road improvements had been planned in co-ordination with the railways, the significance of the latter in the economic geography of Uganda might have been increased. But road development has proceeded largely independently of the railway system, and whereas the 1955 Capital Development Plan noted that 'the western extension of the railway must inevitably be the focus of the main road system for the west'[8], this has not been put into effect. The importance of rail facilities for the distribution of economic activities is thereby much reduced, even though the role of the railway in the economy may be increased indirectly by any road improvements within Uganda.

The conclusions reached in this study should have some relevance to the problems facing Uganda today. The most important work on East African problems that has appeared in recent years is probably the report of the 1953–1955 Royal Commission; but some doubt must be cast on the opinions expressed in the report on the role of expanded rail facilities in the economic development of the area, at least in relation to Uganda. The contribution that improved communications, including new railways, could make towards overcoming the problem of the poverty of the area was stressed throughout the report. 'Examples of the stimulus given by railways are to be seen in the Uganda railway, the recently-constructed Southern Province line in Tanganyika and the branch from the Central line of that Territory to the Mpanda minefields. In all of these instances railways originally built for purposes other than the stimulation of African peasant farming have, in the event, had this result; and a similar one may be confidently expected from the current extension of the Uganda section of the railway to Lake George'[9]. Apart from the doubtful validity of the claims for the Tanganyika lines, it is unfortunate that the Commission adopted the common view that the effects of railway building will be the same today as sixty years ago. With reference to the report on a rail link with Rhodesia, they observed: 'Although the conclusions of this report do not suggest that investment in the rail link will prove an economic proposition for many years, it must be remembered that the same can be said of the Kenya and Uganda Railway without which both Kenya and Uganda would today be in an entirely primitive state'[10]. This last suggestion is possibly the most questionable in the whole report. Although the Commission wisely noted that 'we would point out, however, that by itself the provision of railway facilities is not enough'[11] it was also stated that 'there are regions of high potential productivity which today, as a result of inaccessibility, remain sparsely peopled and under-developed'[12] and that 'a stage has been reached when

further economic development will not take place without the prior provision of communications'[13]. The evidence available does not suggest that this is true of Uganda.

Similar views have been expressed elsewhere, as in several United Nations reports. 'Not a single African country, with the possible exception of the Union of South Africa, has in fact adequate transport facilities in its own territory.'[14] 'It is obvious that inadequate transport systems have been one of the principal obstacles to rapid economic progress in the countries of both East and West Africa.'[15] Except at the local level, transport facilities in Uganda are today adequate in the sense that any great expansion of them would be unlikely to lead to rapidly increased economic development, although as the country advances improvements will continually be required. There are very few examples of economic activities which are at present being prevented primarily by limitations in the country's transport system.

In the early post-war period development was restricted by the limited capacity of the railway to the coast and more particularly by congestion at the port of Mombasa. Today these problems have been overcome, and there is little cause for complaint about the link between Uganda and the coast provided by E.A.R. & H. New railways could assist only the movement of goods within the country, and it has been suggested that they can have little direct or immediate effect on the country unless they form a part of more comprehensive development plans. The main road system of Uganda also seems adequate for most present requirements; any improvements are of benefit to the country, but when funds are scarce any expenditure should be so allocated that it brings the maximum possible benefit. Within the field of communications the greatest effects might now come from investment in local road construction.

The construction of feeder roads is one of the ways in which efforts could be made to ensure that the present rail system is used more nearly to capacity before it is further extended. Some action could also be taken by the Railway Administration, the most urgent requirement, especially in relation to the new lines, being for more publicity of the services offered. Improvements could also be made in the fields of quicker transit and more efficient handling, for although these would probably involve more expenditure they might make the services more attractive. Other steps could be taken by Government, one example being the granting of greater freedom to the Railway Administration to negotiate rates with individual customers.

In Uganda decisions have to be made on the allocation of expenditure between the basic infrastructure for economic development, the productive activities themselves, and progress in what are generally considered as social services. Transport lies within the first category, as do power supplies, and in both respects Uganda appears to be relatively well served. There seems to be a strong case for concentrating more attention on directly productive activities to ease the most pressing short-term problems, and for investment in social services, and especially education, for a more long-term improvement in the conditions of life. The basic need in Uganda today is not for the opening up of new land, for there is much land lying idle

which is already well served with transport facilities. Economic development now depends to a far greater extent in changes in the attitudes, techniques and initiative of the individual citizen, and it is probably in the fields of education, agricultural extension programmes and perhaps co-operative development that the greatest hopes for solving the basic problem of poverty in Uganda must lie.

No claim is made that these conclusions are applicable in any other country, although it is hoped that the study may be of some relevance to similar problems elsewhere. East Africa is not the only area where railway building is sometimes seen as the key to economic development. It has been written of north-east Nigeria that 'the soil is ideal for the cultivation of indigenous foodstuffs, groundnuts and cotton, and the lack of a reasonably cheap and organized means of evacuation is the sole factor that has hitherto retarded expansion'[16], and a recent Indian report states that 'the railways, and for that matter, all means of transport have a dynamic and promotional role in the economy, and the opening up of railways leads to general economic development of the regions or the areas concerned'[17].

It is possible that in these countries also this view of the role of rail facilities might be open to question, although there are no doubt some areas where inadequate transport facilities are the chief obstacle to economic development. The recent International Bank Missions to Uganda and Tanganyika have not considered that this is true of either of these countries. It was observed that 'transport facilities are at present generally adequate in Uganda. The main routes by land, water and air reach practically every corner of the country and their capacity is largely under-employed. Such deficiencies as exist are local in character'[18]. The situation in Tanganyika was described in almost the same words[19]. The writer is in agreement with this view as far as Uganda is concerned, and concludes that while any improvements in transport facilities are likely to be of benefit to the people of Uganda, the importance of this factor in the pattern of economic activities is often exaggerated. Railway construction is not the key to economic development in Uganda today, and this must be more widely appreciated if the great problems facing the country are to be tackled in the most effective way.

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INDEX

The main references are indicated by bold type.

APPENDIX

E.A.R. & H. UGANDA TRAFFIC, 1960

(Movements over 200 tons)

	Tons
ACIDS	
Mombasa—Jinja	271
AERATED WATER	
Port Bell—Mwanza	293
ALE	
Nairobi—Kampala	704
Mombasa—Kampala	379
Jinja—Mwanza	282
ALUMINIUM	
Mombasa—Kampala	1,141
ASBESTOS PRODUCTS	
Tororo—Dar es Salaam	1,207
—Mombasa	563
—Nairobi	496
—Kampala	449
—Tanga	315
—Nakuru	298
—Kasese	289
—Mwanza	228
—Tabora	216
BICYCLES	
Mombasa—Kampala	1,194
BITUMEN	
Mombasa—Jinja	2,132
—Kampala	1,086
—Soroti	479
—Mbale	232
Jinja—Kampala	1,364
Nairobi—Kampala	374
BRAN & SHARPS	
Jinja—Nakuru	1,292
—Lumbwa	229
Kampala—Mombasa	995
BUTTER	
Eldoret—Kampala	381
—Kasese	309
BRICKS	
Kampala—Nairobi	1,637
—Kisumu	845
—Lela	290
—Nakuru	230
Mombasa—Jinja	353
—Kawolo	211
BOARDS	
Mombasa—Kampala	438
CATTLE CAKE	
Kampala—Mombasa	22,773
Kakira— ,,	16,171
Jinja— ,,	15,560
Nsinze— ,,	6,075
Mbale— ,,	4,209
Magodes— ,,	1,984
Nagongera— ,,	1,359
Nyenga— ,,	1,223
Tororo— ,,	1,020
Mahagi— ,,	579
Soroti— ,,	367
Kakira—Nakuru	1,182
Mbale— ,,	797
Jinja— ,,	795
Kampala— ,,	626
Nsinze— ,,	254
Nakuru—Kampala	2,107

	Tons
CEMENT	
Tororo—Kampala	27,249
—Jinja	5,893
—Mbale	4,952
—Soroti	4,404
—Kasese	2,083
—Kakira	1,933
—Kawolo	969
—Rhino Camp	896
—Port Bell	793
—Nsinze	639
—Bungoma	431
—Kamuli	397
—Fort Portal	356
—Kaliro	346
Mombasa—Kampala	5,649
—Jinja	1,369
—Mahagi	999
—Soroti	733
—Mbale	705
—Kawolo	540
—Port Bell	256
—Kasese	247
Athi R.—Kampala	2,073
—Jinja	206
COFFEE	
Kampala—Mombasa	70,236
Bukata— ,,	17,012
Mityana— ,,	7,206
Kasese— ,,	5,702
Kawolo— ,,	5,618
Mukono— ,,	5,154
Bujuko— ,,	4,428
Port Bell— ,,	3,186
Jinja— ,,	2,530
Lubanyi— ,,	1,252
Kawolongojo— ,,	1,144
Musozi— ,,	315
Luzinga— ,,	230
Mbale—Nairobi	5,227
Kampala— ,,	810
CORRUGATED IRON	
Mombasa—Kampala	7,398
—Jinja	914
—Mbale	802
—Soroti	573
—Tororo	345
COTTON GOODS	
Mombasa—Kampala	4,848
—Mbale	820
—Soroti	592
—Jinja	542
Nairobi—Kampala	342
Jinja—Kampala	658
—Nairobi	421
—Kisumu	299
—Mwanza	202
COTTON LINT	
Kampala—Mombasa	7,796
Nsinze— ,,	7,146
Mbale— ,,	4,349
Rhino Camp— ,,	2,877
Kachung— ,,	2,735

	Tons
COTTON LINT (*Continued*)	
Kamuli—Mombasa	2,442
Namwendwa— ,,	2,299
Kaliro— ,,	2,232
Kachumbala— ,,	2,135
Mukono— ,,	2,023
Jinja— ,,	1,846
Soroti— ,,	1,825
Tororo— ,,	1,691
Mityana— ,,	1,482
Kasese— ,,	1,451
Katebo— ,,	1,428
Namaganda— ,,	1,407
Magodes— ,,	1,340
Luzinga— ,,	1,289
Kakira— ,,	1,245
Musozi— ,,	1,208
Okungulo— ,,	1,075
Nagongera— ,,	933
Kumi— ,,	884
Masindi— ,,	835
Mahagi— ,,	814
Palango— ,,	780
Kelle— ,,	734
Bukakata— ,,	732
Mbulamuti— ,,	595
Namasagali— ,,	586
Bugondo— ,,	418
Lubanyi— ,,	349
Hoima— ,,	333
Kigingi— ,,	331
Kawolongojo— ,,	303
Kawolo— ,,	266
Budali— ,,	265
Myanzi— ,,	261
Bujuko— ,,	231
Atura— ,,	2,944
Soroti—Jinja	515
Okunguto—Jinja	425
Kachung— ,,	387
Kelle— ,,	313
Atura— ,,	210
COTTON (RAW)	
Pakwach—Rhino Camp	3,453
Obongi— ,,	1,499
Laropi— ,,	741
Ara— ,,	487
Liri— ,,	404
COTTON SEED	
Rhino Camp—Kakira	2,451
—Jinja	2,866
—Nsinze	663
Kachung—Kakira	2,808
—Jinja	1,637
—Nsinze	583
Soroti—Kakira	2,686
—Jinja	1,032
—Nsinze	861
—Mbale	906
Mbale—Kakira	2,617
—Jinja	428
—Nsinze	402
Atura—Kakira	1,378
—Jinja	951
—Nsinze	519
Kachumbala—Kakira	1,483
—Kampala	455
Tororo—Kakira	1,269
—Jinja	329
Kasese—Kampala	1,141
Kasese—Mityana	404
—Musozi	345
—Bujuko	229
Okungulo—Mbale	945
Palango—Kakira	773
—Jinja	306
Mityana—Kakira	449
—Jinja	262
—Kampala	222
Kampala—Jinja	480
—Kakira	340
—Mombasa	432
Katebo—Jinja	444
—Kakira	256
Mukono—Jinja	302
—Kakira	293
Magodes—Kakira	305
Kelle—Jinja	219
Musozi—Kakira	204
—Jinja	204
Budali—Rhino Camp	997
Pakwach— ,,	392
Rhino Camp—Pakwach	276
CHEMICALS	
Nairobi—Kampala	237
COPPER	
Kasese—Jinja	67,544
—Kampala	219
Jinja—Mombasa	13,947
DIATOMITE	
Kariandus—Kampala	222
ELECTRICAL GOODS	
Mombasa—Kampala	1,570
EXPLOSIVES	
Mombasa—Kasese	301
FENCING	
Mombasa—Kampala	375
FERTILIZER	
Mombasa—Kakira	4,376
—Kawolo	3,201
—Kasese	1,450
—Fort Portal	379
—Mukono	373
—Mityana	317
—Rhino Camp	274
—Kampala	255
Koru—Kawolo	2,581
GASES	
Kampala—Kasese	250
GLASS & CHINA	
Mombasa—Kampala	1,723
—Jinja	232
GRAIN (Excl. maize & wheat)	
Nairobi—Kampala	2,330
Musoma— ,,	929
Jinja— ,,	728
Mwanza— ,,	304
Mombasa— ,,	207
Kampala—Mombasa	525
Soroti— ,,	320
Nairobi—Jinja	400
GROUNDNUTS	
Nsinze—Mombasa	3,162
Kamuli— ,,	1,732
Mbale— ,,	1,677
Kakira— ,,	673
Soroti— ,,	640
Jinja— ,,	466
Nagongera— ,,	457
Kumi— ,,	376

	Tons
GROUNDNUTS—(*Continued*)	
Kaliro—Mombasa	231
Magodes— ,,	230
GUNNY BAGS	
Kalimoni—Kampala	1,107
—Bukakata	423
Mombasa—Kawolo	685
—Kampala	654
—Kakira	643
—Mbale	208
HARDWARE	
Mombasa—Kampala	804
HIDES & SKINS	
Mbale—Mombasa	1,417
Kampala— ,,	1,323
Bukakata— ,,	383
Mbale—Nairobi	308
INSECTICIDES	
Mombasa—Kampala	345
IRON & STEEL	
Mombasa—Kampala	4,711
—Jinja	1,156
—Kasese	678
—Mbale	466
—Soroti	466
—Kakira	404
Nairobi—Kampala	898
—Mbale	255
—Tororo	245
—Jinja	205
IRON & STEEL (Scrap)	
Kampala—Mombasa	2,533
Jinja— ,,	860
Port Bell—Mohuru Bay	493
Kasese—Kampala	217
LEGUMES	
Kampala—Mombasa	2,959
—Nairobi	353
LIME & LIMESTONE	
Tororo—Jinja	6,873
—Kampala	1,110
—Kakira	516
Koru—Kakira	1,015
Mombasa—Kampala	688
—Kawolo	606
Kajiado—Kampala	249
LORRIES & BUSES	
Mombasa—Kampala	496
—Jinja	212
MACHINERY	
Mombasa—Kasese	1,499
—Kampala	1,487
—Jinja	691
—Kawolo	453
—Kakira	411
—Kasenyi	279
—Soroti	278
—Mbale	210
Nairobi—Kampala	586
MAIZE	
Kampala—Mombasa	465
—Mbale	297
Jinja—Mombasa	318
Nsinze— ,,	226
Kamuli—Mbale	258
MAIZE FLOUR	
Kampala—Soroti	924
—Mombasa	536
—Kasese	320
—Atura	241
Kampala—Kachung	219
Jinja—Kachung	383
Jinja—Kampala	308
—Mombasa	298
MEAT	
Athi R.—Kasese	381
—Kampala	368
Kampala—Nairobi	313
MOTOR CARS	
Mombasa—Kampala	3,109
—Jinja	399
Nairobi—Kampala	238
Kampala—Mombasa	409
MOTOR SPARES	
Mombasa—Kampala	771
OILS (VEGETABLE)	
Kasese—Nairobi	3,909
—Kampala	757
—Kakira	414
Jinja—Nairobi	1,270
—Mombasa	827
Kampala—Nairobi	1,298
Kakira—Mombasa	206
Mombasa—Kakira	663
—Kampala	640
—Tororo	223
Tanga—Kampala	577
OILSEEDS	
Kampala—Mombasa	1,830
Rhino Camp— ,,	224
PACKING MATERIALS	
Nairobi—Kasese	297
—Kampala	252
Miritini—Jinja	269
PAINT	
Mombasa—Kampala	592
Nairobi— ,,	249
PAPER	
Mombasa—Kampala	1,788
—Jinja	589
—Entebbe	357
Nairobi—Kampala	360
PHARMACEUTICALS	
Mombasa—Kampala	532
Nairobi— ,,	237
PHOSPHATES	
Magodes—Turbo	3,997
PIPES	
Mombasa—Kampala	1,460
—Kakira	866
—Jinja	380
—Mbale	359
—Kawolo	283
—Kasese	258
POTATOES	
Elburgon—Kampala	520
PROVISIONS	
Mombasa—Kampala	1,498
Nairobi— ,,	323
PYRETHRUM	
Nakuru—Kasese	393
RICE	
Mombasa—Kampala	3,056
—Jinja	605
—Mbale	345
—Nsinze	270
—Soroti	242
RUBBER GOODS	
Mombasa—Kampala	921
Nairobi— ,,	239

	Tons
SALT	
Mombasa—Kampala	12,203
—Kasenyi	1,656
—Mbale	1,567
—Kasese	1,457
—Soroti	1,332
—Jinja	1,025
—Rhino Camp	866
—Nsinze	610
—Bukakata	347
—Kaliro	324
—Kamuli	284
—Mahagi	274
—Atura	270
Uvinza—Kampala	920
Magadi—Soroti	232
Kampala—Kasese	255
SAND	
Kome—Nairobi	2,309
Nyenga—Kisumu	492
Bukakata—Nairobi	240
SISAL	
Masindi Port—Mombasa	630
SOAP	
Nairobi—Kampala	2,209
—Mbale	357
Mombasa—Kampala	596
SODA	
Mombasa—Jinja	768
—Kakira	646
—Kampala	441
Magadi—Kampala	371
STONE	
Kampala—Nairobi	318
Lubanyi—Kawolo	280
Mombasa—Kampala	256
SUGAR	
Kakira—Kampala	15,341
—Nairobi	6,332
—Eldoret	2,290
—Thika	1,359
—Nakuru	1,107
—Kitale	923
—Kahawa	781
—Lumbwa	780
—Fort Hall	562
—Sagana	436
—Kikuyu	430
—Naivasha	386
—Ruiru	366
—Thomsons Falls	309
—Kijabe	303
—Maragua	301
—Mbale	254
—Turbo	246
Kawolo—Nairobi	1,799
—Nakuru	1,389
—Kampala	1,287
—Eldoret	1,285
—Thika	1,200
—Limuru	1,017
—Broderick Falls	764
—Kitale	708
—Kahawa	573
—Bungoma	555
—Thomsons Falls	444
—Uplands	440
—Naivasha	432
—Ruiru	409
—Kijabe	276
Kawolo—Turbo	258
—Maji Mazuri	243
—Maragua	224
—Fort Hall	212
—Gilgil	207
Mombasa—Kampala	341
SUGAR CANE	
Lubanyi—Kawolo	54,159
TEA	
Kasese—Mombasa	2,396
Mityana— ,,	963
Mukono— ,,	648
Kampala— ,,	583
Kawolo— ,,	548
TILES	
Kampala—Kahawa	318
Mombasa—Kampala	204
TIMBER	
Kampala—Mombasa	2,227
—Jinja	1,588
—Nairobi	288
Jinja—Nairobi	1,246
—Mombasa	915
—Kahawa	903
—Mwanza	407
Nsinze—Mombasa	1,834
Sesse—Port Bell	1,350
Kome— ,,	312
—Jinja	220
Masindi—Kampala	444
Kawolo—Jinja	325
Port Bell—Mwanza	226
Kyaka—Mwanza	240
Eldoret—Mbale	633
—Kampala	570
—Soroti	243
Timboroa—Jinja	533
—Kampala	224
Kitale—Mbale	273
Hoey's Br.—Mbale	219
TIN & WOLFRAM	
Kampala—Mombasa	476
Kasese— ,,	426
TINPLATE	
Mombasa—Kakira	1,398
—Jinja	280
TOBACCO	
Kampala—Nairobi	1,847
Urambo—Kampala	464
Mombasa—Jinja	203
(CIGARETTES)	
Jinja—Dar es Salaam	371
—Nairobi	233
Nairobi—Tororo	376
—Kampala	340
VEGETABLES	
Mombasa—Kampala	200
WHEAT	
Eldoret—Jinja	1,595
Soy— ,,	1,437
Plateau— ,,	1,132
Kitale— ,,	2,687
Hoey's Br.—Jinja	476
Ainabkoi— ,,	262
WHEAT FLOUR	
Jinja—Kampala	3,914
Eldoret—Mbale	1,508
—Kampala	1,448
—Soroti	755
—Bukakata	739

	Tons
WHEAT FLOUR—*(Continued)*	
Eldoret—Tororo	444
—Kaliro	442
—Nsinze	411
—Kasese	210
WINES & SPIRITS	
Mombasa—Kampala	490

PETROLEUM PRODUCTS

PETROL (Bulk)	
Mombasa—Kampala	48,430
—Jinja	8,593
—Mbale	6,378
—Kasese	6,101
—Soroti	3,005
DIESEL & GAS OIL (Bulk)	
Mombasa—Kampala	18,993
—Jinja	7,943
—Kasese	7,424
—Mbale	3,440
—Soroti	1,833
—Kakira	602
LIQUID FUEL	
Mombasa—Tororo	1,973
—Kampala	582
—Port Bell	301
—Jinja	208
KEROSENE (Bulk)	
Mombasa—Kampala	7,947
—Kakira	2,291
—Jinja	957
—Kasese	685
—Mbale	650
KEROSENE (Packed)	
Mombasa—Kampala	10,997
—Mbale	1,517
—Soroti	1,232
—Kasese	1,017
—Jinja	762
LUBRICATING OIL	
Mombasa—Kampala	2,630
—Jinja	860
—Mbale	409
—Kasese	335
—Kakira	220

LIVESTOCK

CATTLE
(Over 200 head)

	Head
Soroti—Kampala	25,653
—Mukono	12,982
—Jinja	7,110
—Kamuli	247
Kumi—Mukono	1,522
—Kampala	1,214
Kelle—Namasagali	15,573
Namasagali—Mukono	7,777
—Jinja	2,288
—Budali	2,192
Tororo—Kampala	341
Jinja—Kampala	242
Kitale—Kampala	2,760
Eldoret—Kampala	2,119
—Jinja	342

GOATS
(Over 1,000 head)

	Head
Kelle—Budali	7,098
Soroti—Kampala	5,701
—Nsinze	1,317
Kumi—Luzinga	1,309
—Mbulamuti	1,129
Kaptagat—Kampala	3,317
Lela— ,,	1,829
Luanda— ,,	1,771

(Throughout the appendix Mombasa includes Kilindini and Changamwe stations)

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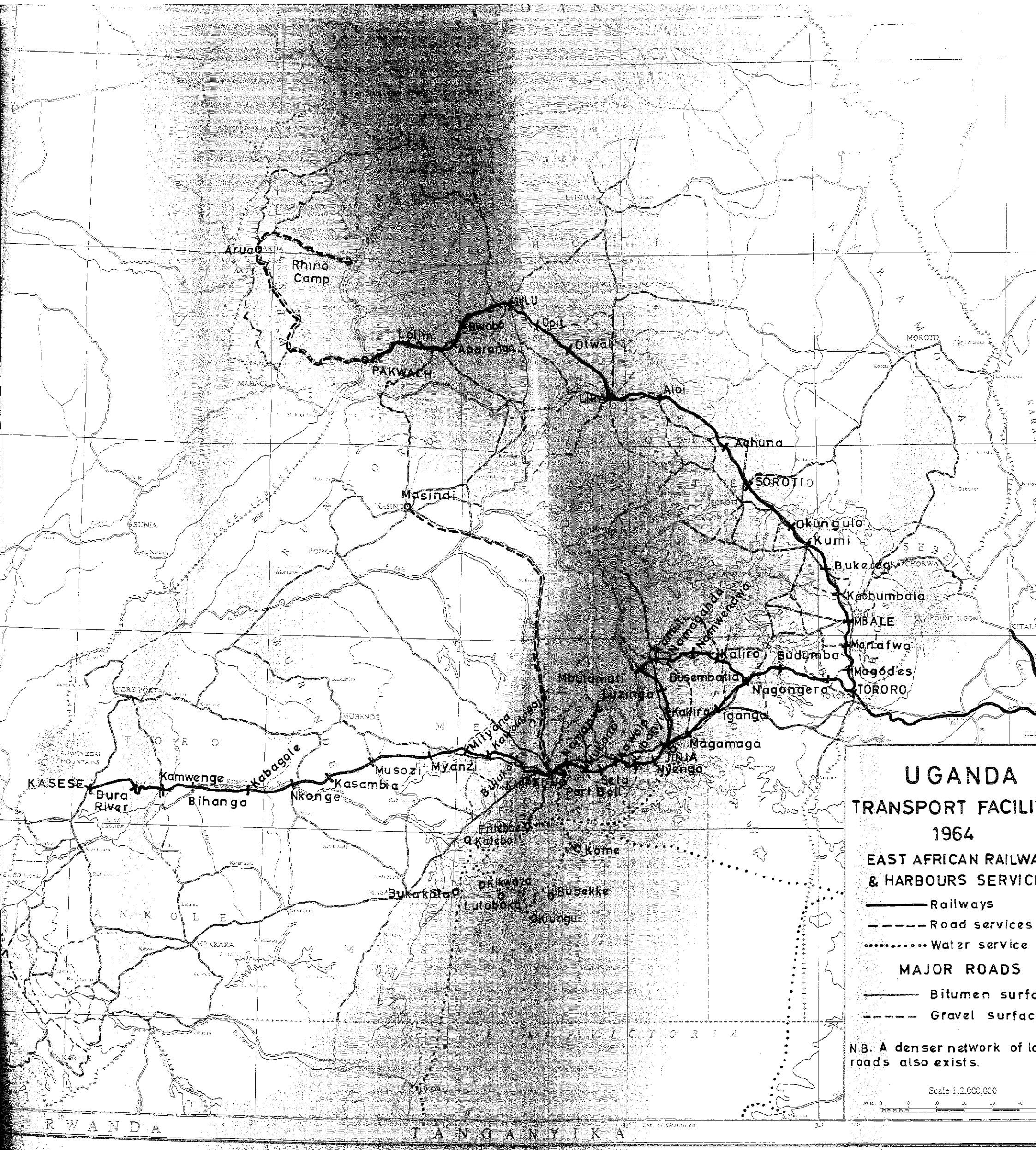
Visitors to Uganda often see the country as a green oasis in a predominantly brown continent, even as a land of plenty where man does not have to struggle against a harsh environment as in much of Africa. Yet Uganda is by no means a rich country—its people have an annual cash income of only about £15 per head, and the figure is not rising at all at present. Amongst the problems facing the country that of inadequate transport facilities is often considered especially serious, and it is frequently claimed that developments in this field must inevitably bring increased prosperity to the people of Uganda.

This study aims to examine this claim in respect of rail transport, and to assess the importance of rail facilities as a factor influencing the distribution of economic activities in Uganda.

EAST AFRICAN STUDIES

Research studies published by the East African Institute of Social Research can be ordered by the Administrative Secretary, East African Institute of Social Research, P.O. Box 16022, Kampala, Uganda. They are also distributed through Kegan Paul Trench Trubner & Co. Ltd., 43, Great Russell Street, London, W.C.1., and Oxford University Press, P.O. Box 12532, Nairobi.



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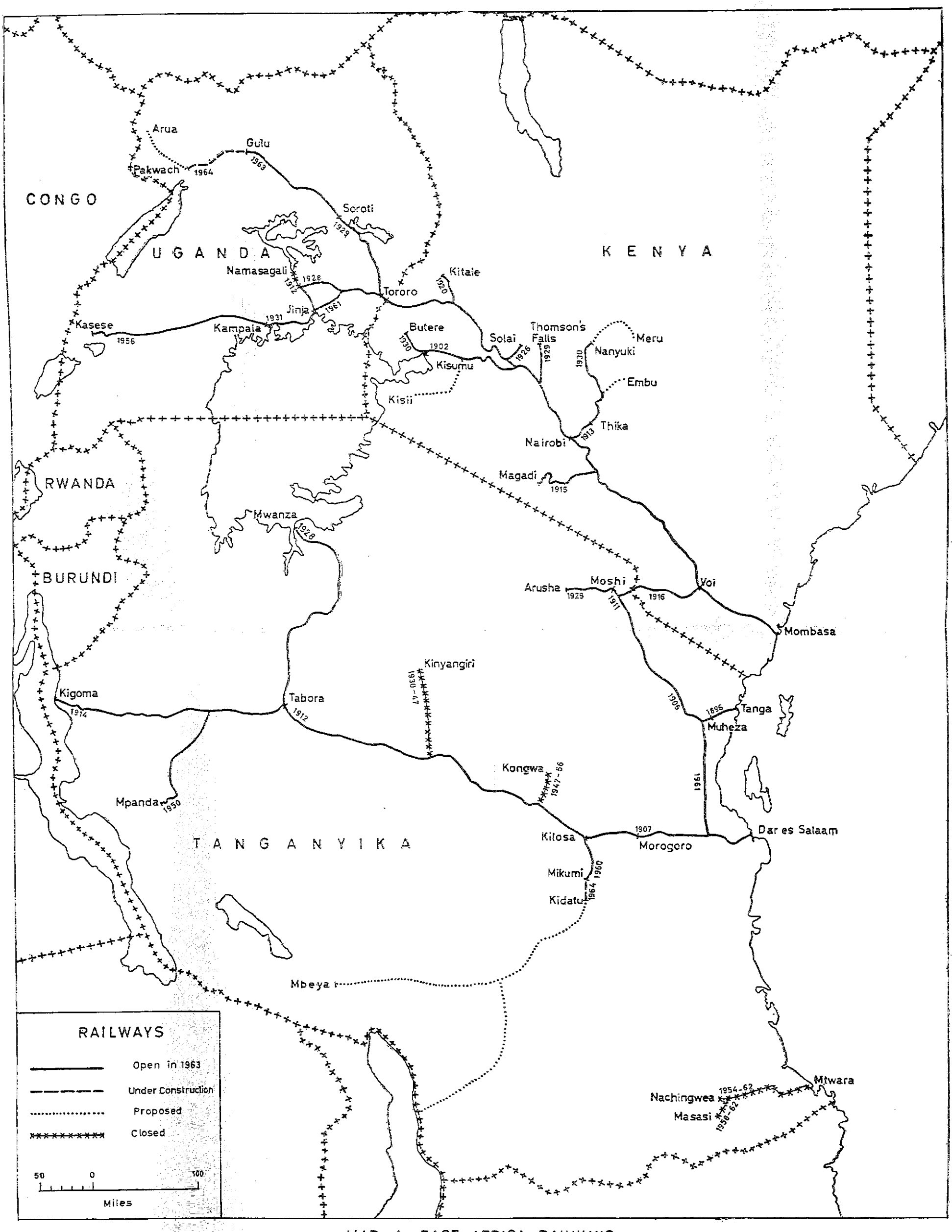
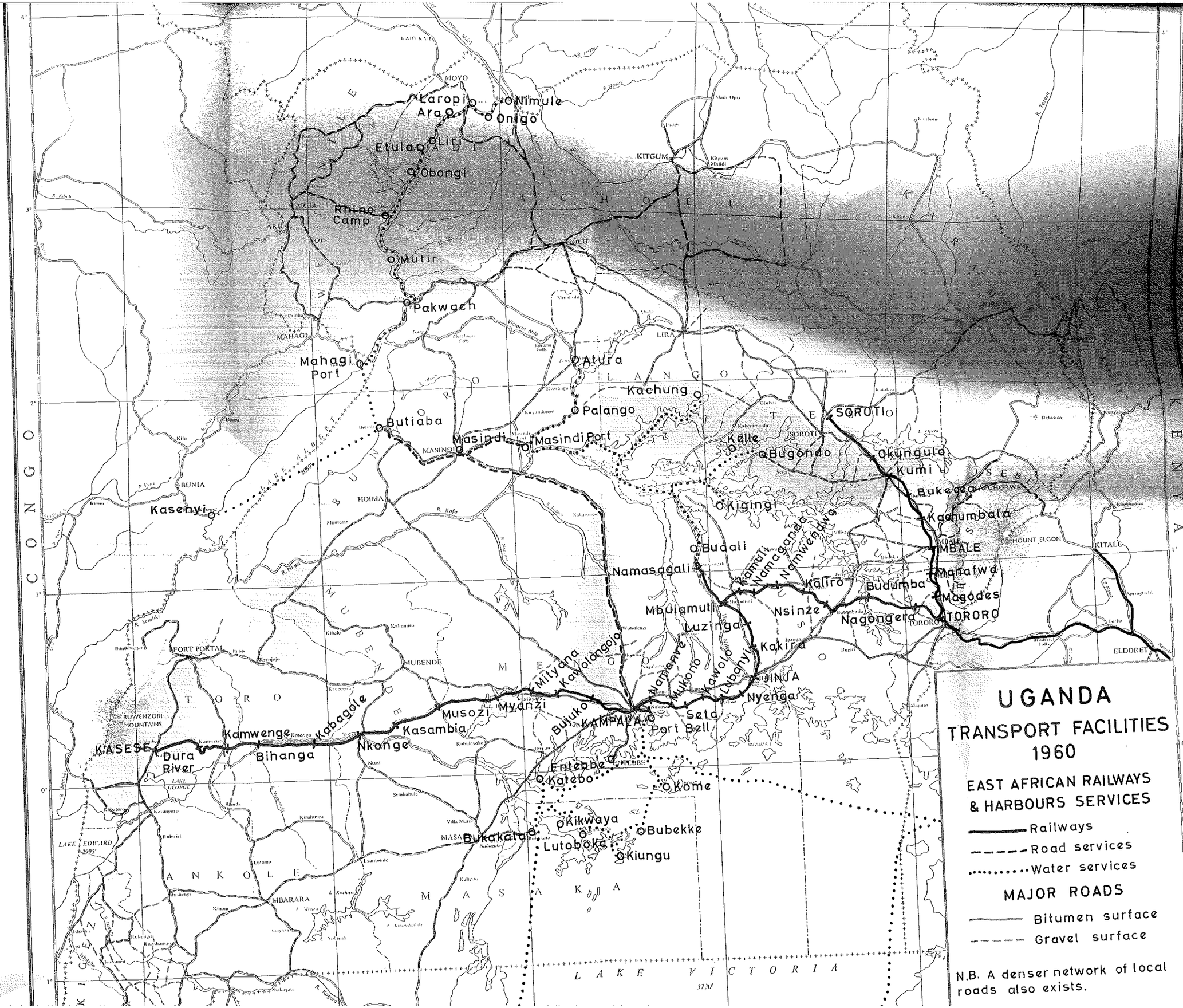


MAP A : EAST AFRICA, RAILWAYS.



UGANDA

TRANSPORT FACILITIES 1960

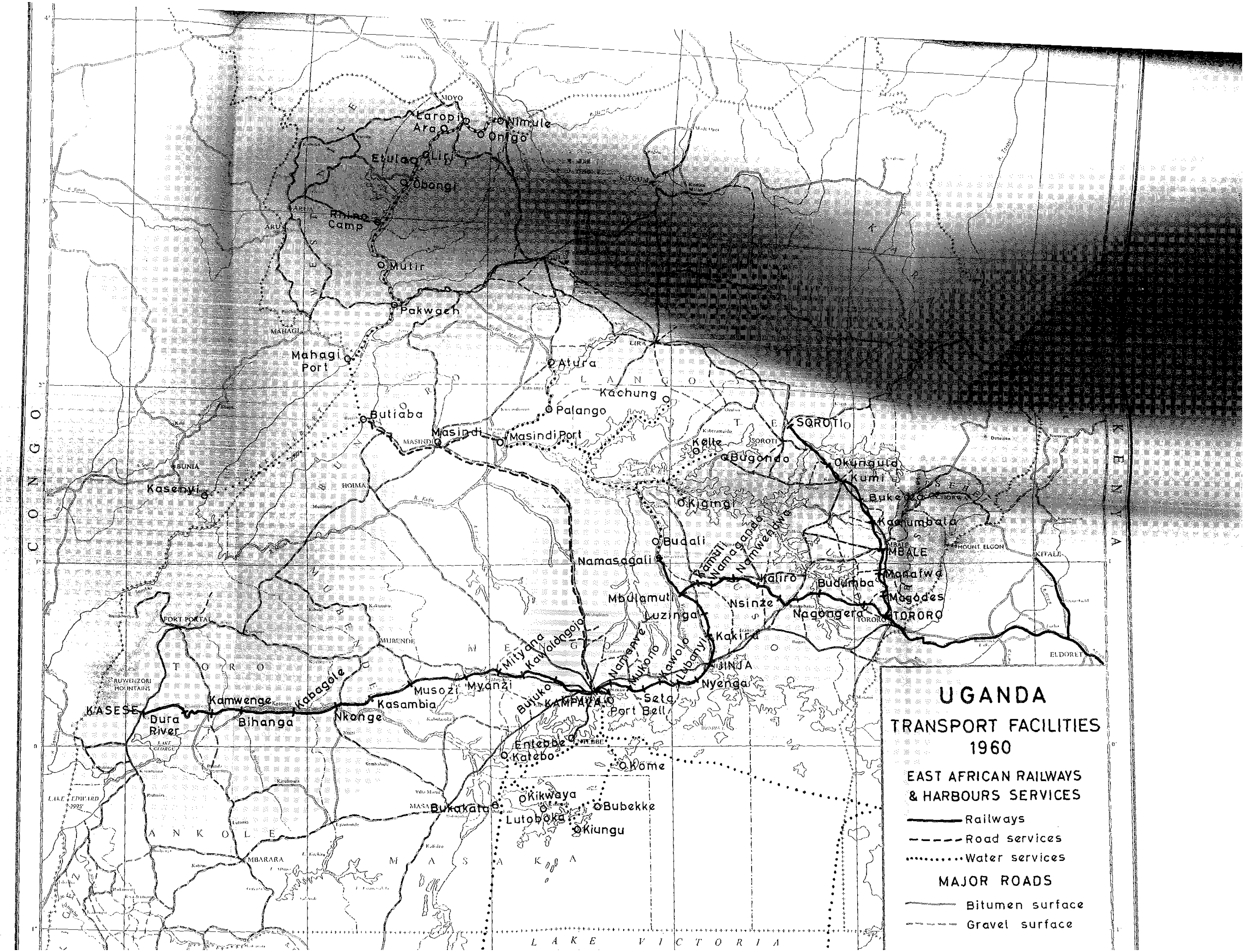
EAST AFRICAN RAILWAYS & HARBOURS SERVICES

- Railways
- Road services
- Water services

MAJOR ROADS

- Bitumen surface
- Gravel surface

N.B. A denser network of local roads also exists.


UGANDA
TRANSPORT FACILITIES
1960
EAST AFRICAN RAILWAYS
& HARBOURS SERVICES
Railways
Road services
Water services
MAJOR ROADS
Bitumen surface
Gravel surface
CONGO
KENYA
LAKE VICTORIA
Laropi
Ara
Nimule
Onigo
Obongi
Rhino Camp
Mutir
Pakwach
Mahagi Port
Butiaba
Kasenyi
Masindi
Masindi Port
Atura
Palango
Kachung
SOROTI
Kelle
Bugondo
Okungulo
Kumi
Kachumbala
Budali
Namasagali
MBALE
Manafwa
Magodes
TORORO
Nagongera
Budumba
Nsinze
Mbulamuti
Luzinga
Kakira
JINJA
Nyenga
Seta
Port Bell
KAMPALA
Mityana
Myanzi
Musozi
Kasambia
Nkonge
Kabagole
Kamwenge
Bihanga
Dura River
KASESE
Entebbe
Katebo
Kome
Kikwaya
Bubekke
Bukakata
Lutoboka
Kiungu