

This article primarily describes the pioneering hey-day of building sealed highways in East Africa; therefore it is partly a tribute to the skills and efforts of all the Mowlem Construction Company staff and workers, some of whom were ex-students or fathers of ex-students of the Prince of Wales School. In my case, my father worked for Mowlem as a quarry manager from 1951 until 1964, when he finally left Mowlem and returned to England. The roads of East Africa have arguably never been built to sustain the tough conditions of weathering and erosion caused by seasonal torrential rains that we all occasionally experienced in our days there, and it is therefore not surprising that we hear that many roads in East Africa have deteriorated badly over the years, while the separate governments of Kenya, Uganda and Tanzania have battled to maintain the roads to a reasonable standard.

I would like to thank John Sparkes (Scott House 1958-1961) for his invaluable assistance in doing research for me via the Institution of Civil Engineers (I.C.E.) in London, and to access archived files of reports from the "London John" company magazine of John Mowlem Ltd and the Mowlem Construction Company of East Africa.

D. Alan Smith, (Rhodes House, 1958-1961).

The Rough Road Home.

Early memories of travel by road in East Africa in the 1940's and 1950's prompt me to remember that unlike the nostalgic romance of my frequent experiences of East African rail journeys, the early 'rough' roads of East Africa had few memories of pleasure. Possibly this was the feeling of many boys who traveled to and from school in the early days of British East Africa, particularly in the days before the up-grading of arterial routes started in the 1950's. A good example of the state of East African roads at that time was the Coronation Rally, later re-named the East African Safari Rally which achieved notoriety as being the most arduous and treacherous rally in the world as it spanned many of the rough unsealed roads of Kenya and Uganda.



Where springs take a pounding: A back-country Kenya road, near Kisumu.



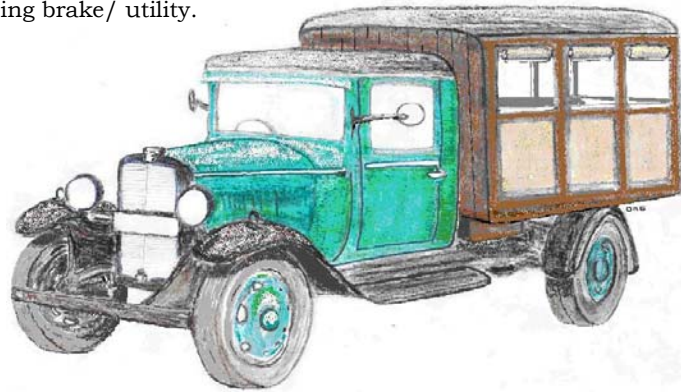
the early 1950's. Uganda

In the years before 1950, the Public Works Dept of Kenya, Uganda and Tanganyika maintained rural roads to the best of their abilities and limited budget allocations, but this was never sufficient to ensure all rural roads were passable year round, particularly in the rainy season.

Another typical rough East African road of

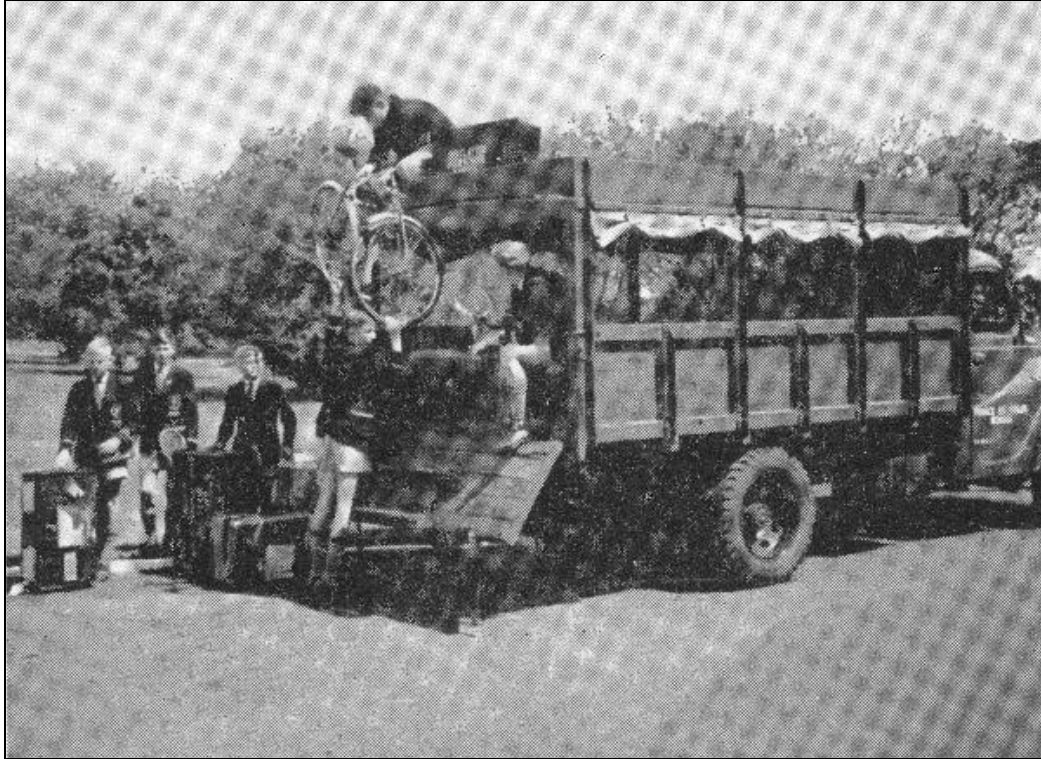
The exception was the main highway route between Nakuru and Nairobi which was built by Italian prisoners of war during the latter part of the Second World War. As anyone who lived in East Africa in the years before 1950 will recollect, traveling by road in most districts of Kenya, Uganda and Tanganyika before sealed highways were built was fraught with dangers and discomfort with dust, mud, ruts, pot holes and flooded river crossings. Some minor roads were often impassable in the rainy seasons.

1932 Vauxhall (or Bedford) 6 cyl. shooting brake/ utility.



I picture East African roads as they were in 1950 with three particular images that stick in my memory.

The first image was my first impression of Kenya upon arriving there in 1949. In January that year I flew out to Kenya from London with my parents and sister. A little of the detail from that time I remembered clearly. The silver Vickers Viking we had flown in taxied up to the small terminal at Eastleigh aerodrome, Nairobi and stopped with a final cough of its twin prop engines. My uncle, who had settled in Kenya two years earlier, was waiting for us, and helped us load our bags into his vintage 1932 Vauxhall shooting brake. A patina of red dust covered the bonnet and roof of the shooting brake, an early indication of the typical road conditions we could expect in Kenya in those days.

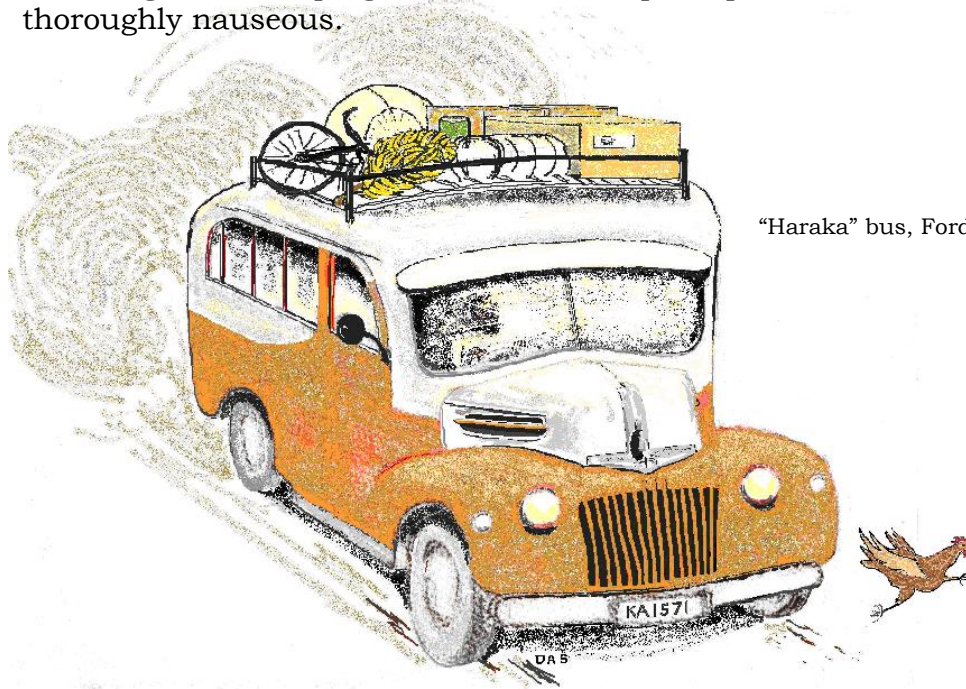


Prince of Wales School bus, 1953 5-ton Bedford. Photo taken circa 1959.

The school buses at Nakuru Primary School and later at the Prince of Wales School reminded me of that old shooting brake, with their wooden bench seats and canvas roll-down blinds.

In the days before air-conditioned buses and cars, the shooting brakes were similar to many buses in East Africa with their open sides instead of glass windows which provided good ventilation in the warm climate. If the rain was heavy or if road dust was excessive, the blinds could be rolled down for protection. The design of the Vauxhall shooting brake assured adequate protection from the rain and sun, but road dust filtered in past the canvas blinds as soon as we left the sealed bitumen road at Nakuru in the Rift Valley and we wound our way 30 miles up the red earth roads to Subukia.

The second image was of a trail we often took from Nakuru to Ol Kalou and in particular a typical trip from school in 1953. The narrow gravel road wound treacherously up the Bahati escarpment and Mr Fourie's old Austin leant heavily into each steeply sloping corner of the road as we trailed along behind an old truck laden with logs that raised clouds of choking dust in its wake. This was the road home from Nakuru Primary School for my friend John and we were taking the rough road to his farm for the half term holiday. We shared a packet of Crown cigarettes (my first and only venture into smoking) and a large bag of toffees. These and the motion of the car, the dust and the bouncing and thumping as the car hit frequent pot holes in the road made us thoroughly nauseous.



"Haraka" bus, Ford, 1947.

Lastly, I have a clear image of the small 'Haraka' buses that belted along most rural roads throughout East Africa in those days. The usual means of transport for Africans in many parts of East Africa, these 'Haraka' buses generally carried far more than a safe and standard payload. Usually Haraka buses were laden with large bunches of bananas, 'kikapu' baskets and bags of produce plus passengers' baggage piled up on a roof rack, and frequently there were bicycles tied to a rack on the roof or the back of the bus. 'Haraka' a Swahili word meaning rapid or express, certainly described the Haraka buses and their drivers, especially as they were known for their break-neck speed on roads best negotiated with caution.



Kampala to Tororo road, 1950.

In 1950, the Governments of Kenya, Uganda and Tanganyika commenced a 10 year plan to upgrade the main arterial roads and to build sealed tarmac (bitumen) roads throughout British East Africa. They contracted Mowlem Construction Company (East Africa) Ltd, a subsidiary of British civil engineering company John Mowlem Ltd.,

for several of the first stages of road reconstruction.

The first two contracts were for a sealed highway from Jinja to Kampala in Uganda, and for an extension of the Nairobi to Nakuru main highway with a sealed tarmac road between Nakuru and Njoro, then on to Molo on the far side of the Rift Valley in Kenya. These roads commenced construction in 1950.

My father joined Mowlem in 1951 as a quarry manager at Iganga in Uganda after Mowlem complete the Kampala to Jinja road and continued with an extension of that highway to Iganga through 1951 and into 1952. In 1952, we moved to a quarry near Mbale that was to be used for supplying stone chip for the Mbale to Tororo road that Mowlem were starting to re-construct and bitumen seal. In 1955 Mowlem we once again moved on to Bugiri in Uganda to build a new road between Iganga to Tororo. Long stretches of this road were built like an Italian autostrada, straight as an arrow through virgin forest. 1955 found us at a newly developed quarry in a dense forest some 30 miles west of Tororo. The quarry, as per the photos below, supplied granite aggregate for the new roads in the area.



Mowlem Quarry at Bugiri, Uganda, for supply of stone aggregate (chip) for the Tororo to Jinja road, 1954-1955. From top left:- 1. Quarry face with rail bogeys. 2. Stone crusher, with precarious scaffolding. 3. Aggregate (road chip) stacks. 4. Loading out hopper.



In the early 1950's, technology for building prefabricated houses in numbers for the construction staff was relatively untried. A report by the site supervisor on the Uganda contract, Mr J.W. Kendrew, in the June 1954 edition of the Mowlem company magazine "London John", described the issues of building houses for staff as follows:

"Out here at the beginning of a contract our staff are spared the doubtful pleasure of searching for lodgings or a suitable house to rent. Lodgings do not exist and hotels are few and far between. Instead, on any major contract, we have to build a 'Mowlemville' while the main contract is getting started. Finding a suitable camp site is therefore the first problem on any contract. Much of East Africa is densely populated by African peasant farmers and naturally a good deal of our work tends to be in such areas where the better sites are already under cultivation. Such matters as siting for the control of the contract, water

supply, comparative freedom from mosquitoes and from other trials of Africa, communications with our suppliers, the necessity of purchasing food, recreational facilities on so on, must all be considered. All of these problems cannot be reconciled, but in general the prime necessity is for a cool healthy spot as near as possible to some township. Even then the unforeseen has to be expected, such as a road blocked by a tree that has been pushed over by a playful elephant.

Occupation authority must then be obtained through the District Commissioner from the local African chief who deals with the actual landowner. We usually find the local chief extremely co-operative, no doubt with an eye to future marketing of chickens and eggs. Some of our (Mowlem) 'towns' are quite big by African standards. On the Mbale to Tororo road contract we have, when all the children are on holidays, forty-six Europeans, of whom a few are scattered on quarry sites or closer to their particular job of work. By comparison the total European population of nearby Mbale, third largest town in the (Uganda) Protectorate at this time is only about ninety.

In the early days when Mowlem arrived on the scene in East Africa, members of our site staff lived in a variety of curious structures, most to satisfy the whims of the individual occupant. This was most uneconomical and in any case the building could rarely be moved satisfactorily. Accordingly, the Company designed its own prefabricated bungalow, made up of timber sections to be bolted together on site, the windows and doors being incorporated into the sections.



A typical early design Mowlem house,
Bugiri, Uganda, 1954.

These sections are prefabricated in our Dandora (Nairobi) depot and each section is designed to lie flat in the bottom of a 3-ton lorry. This is most important in order to cause as little damage as possible while being moved. Each house is in theory built to a standard internal layout, though it can be made larger if required by adding sections. Erecting them on-site is like playing with a Meccano set and it is quite remarkable how many different internal layouts can be found in one 'Mowlemville'. Each house must be erected on

timber piles with ant caps; an outside kitchen and lavatory etc are built in local materials, usually mud and wattle.

East Africa has a wide range of climate as we live anywhere from sea level and an altitude of 10,000 feet. It can be extremely hot and conversely very cold, the latter especially at night. Our rain comes in thunderstorms of furious intensity. It is therefore very difficult to design an economical transportable house which will suit the requirements of all altitudes, but in general this bungalow does succeed reasonably well. After a particularly vigorous thunderstorm some of the women might question this observation!

The original cost of each bungalow in our depot is about Stg 700 and the erection cost about Stg 150. The latter includes internal wiring for lighting, water supply, construction of kitchen, etc., painting and drainage. It is invariably necessary to provide new roofing felt and a proportion of the wall boarding on each occasion that the house is moved. The climate also puts a considerable strain on timber which is not always seasoned well, but in general repair costs are not high.

Other methods of housing our staff are also used. We have a number of caravans which were built locally in Nairobi on old army truck chassis; these are used by people who must be more mobile, such as well drillers. They are extremely useful though size of family rather restricts their value. Originally they cost about Stg 450 complete with fitted beds, cupboards etc., but that was some years ago when surplus (army) vehicles could be picked up very cheaply. We also use Uniport aluminium huts, either for single men, or grouped together to form a cluster for families. These huts, which are manufactured in the United Kingdom, are formed from sixteen flat wall sections, bolted together to form a ring, together with a conical roof. Windows can easily be fitted and the floor area is approximately 200 square feet. Each section can easily be carried, even by an African, and the whole hut can be erected by four men in an hour. The inside is painted and a thin concrete skin is put over the floor. The usual outside kitchen etc is added. Very often these metal huts are cooler than the timber bungalow in hot weather as it is easier to site them under trees or thatch them with a false grass (makuti) roof.

Uniport housing,
circa 1954.



The remainder of the necessities of camp life vary rather with each particular location. On the Mbale to Tororo road contract, washing water was carried by motor tanker six miles from Mbale township, and for drinking water each household sent their houseboys with jugs to the local protected spring. Carrying water by tanker was however an expensive operation, while the houseboys thought a quiet daily stroll in the country, together with a gossip, was an excellent idea. As we had a drilling rig in the neighbourhood, we took the opportunity to put down a borehole on the camp site and we obtained a good supply at 400 feet, which was pumped to an overhead tank and fed to the houses by gravity. At the moment we are putting down a borehole for another camp site on the new Bugiri road.



Mowlem prefabricated bungalow, Uganda, 1959.

The houses are all wired for electric light, produced by our own generator. Cooking is either carried out by paraffin or wood and water is heated in Rhodesian boilers. We found reasonable clay and burnt our bricks for this purpose, using old fuel drums for boilers. At Mbale the soil conditions allowed us to use French drains and soak away pits for waste water though in towns we have to construct septic tanks. We surround the whole site including offices, workshops etc. with a wire fence to keep cattle out, and warn the locals that any chicken found on our side of the fence is a Mowlem chicken. Lateritic gravel which is common throughout the tropics, makes an excellent tennis court if carefully graded. We have certainly had excellent value out of the one constructed at Mbale and intend to repeat the idea. In fact, by the time the flowers and vegetables are ready to be eaten up by Africa's army of insects, our camp is looking very homelike."

A report from the Mowlem magazine "London John" of March 1956, written by Mr G.C. Blofield, Managing Director of Mowlem Construction at that time, summarised the progress of road construction from 1952 through to 1956 as follows -

"Since 1952 the Mowlem Construction Company has been occupied on the building of trunk roads in Uganda. During this period we have been entrusted with more than half of the new bituminised road from the capital of Uganda, Kampala to Mbale, the capital of the Eastern Province. It is now possible to travel all of this way on a tarmac surface, which is a vast improvement on conditions as they existed when the Mowlem Construction Company was first formed in East Africa. The journey which then took five to six hours on very indifferent gravel surfaced roads can now be done in three hours on a very good surface. This road forms part of the trunk road between Kampala and Nairobi, the capital of Kenya, and has done much to reduce the road time between the two cities. In one place, where the road used to be flooded during periods of heavy rain, we have constructed a realignment and a high embankment across two swamps to render the road usable at all times. In all this length of about 170 miles the road passes through only two towns of any consequence, Jinja and Tororo. Road building in this type of country presents many difficulties which have to be overcome, and not least of these is the problem of staff housing. In all, a total of three road camps have had to be built, each with bore holes for water supply and power plants for camp lighting. Living in these bush conditions is not everyone's 'cup of tea', but with improvised club houses, tennis courts and film shows, the staff made the best of camp life."

Mowlem staff were posted to various outposts of East Africa in those days. Another interesting entry in the "London John" magazine, was entitled 'Survey for New Road in Uganda through Little Known Country where Big Game Abounds' by Keith Landsdell, a South African land surveyor, who had worked for Mowlem since they were established in East Africa in 1948. The survey was done over a period of many months with arduous conditions, in an area adjacent to the Murchison Falls National Park, where their 'men only' base camp was frequently invaded by hungry elephants and on one occasion by a truculent rhino.

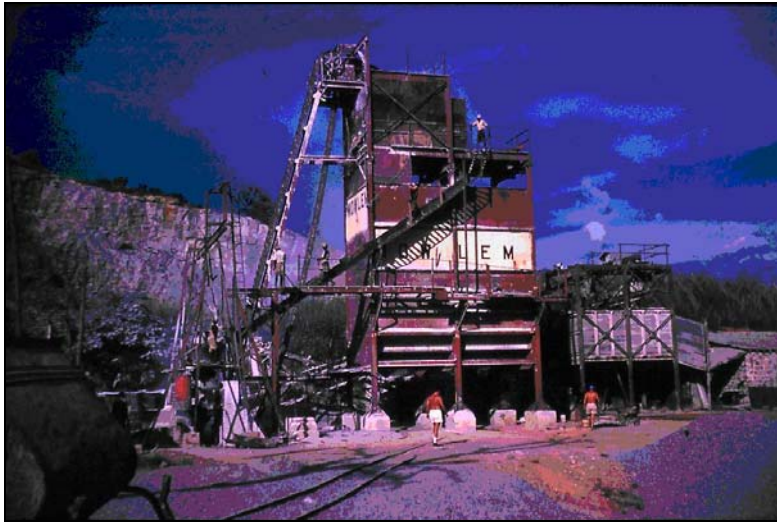


Two Mowlem surveyors are held up by a tree felled by an elephant, Uganda, 1953

The relationship the European staff had with their African road gangs and quarry workers on the construction contracts were generally good. My father Ben Smith, had learnt and spoke Swahili well, and following his first two jobs in Kenya, in 1949 to 1950, he was followed to subsequent jobs by a retinue of loyal Luo workers. During the last few years (1961-1964) of his contract with Mowlem, his African quarry workers generally referred to him as 'Bwana Mzee'. This name didn't reflect Dad's age as he was only in his mid 40's at the time, but rather it was a term of respect for his firm but fair treatment of his quarry gangs and supervisors over a period of more than ten years. One Luo tribesman called Rueben had worked with Dad in 1949, and was on a Mowlem road site I visited at Kakamega in 1961, by which stage Rueben had become a road gang supervisor. Another was a Luo called Samuel Abuya, a store clerk we employed at Subukia in 1949 and who taught me my first words of Swahili. He followed Dad to every Mowlem contract site until 1958 when he had saved up enough to retire to his "shamba" farm in Nyanza province.



Precipitous Mowlem road building around Mt. Elgon, Kenya/Uganda border, 1956.



Mowlem Quarry Kampala. 1959. Stone crusher and 300 ton stone chip hopper.

In Uganda, a tarmac road was also built from Kampala northwards to Bombo and beyond. An impressive large quarry was purchased and upgraded by Mowlem in 1958 on the shores of Lake Victoria at Muyenga near Kampala, which supplied road chip for the new roading contracts in the area, and for building blocks used in the construction of the new Uganda parliament buildings during 1959 and 1960.

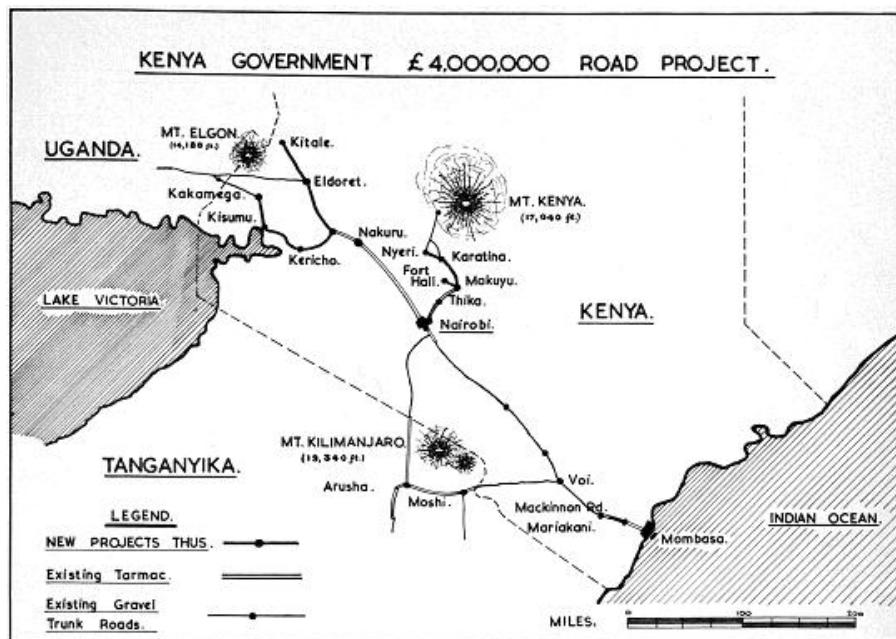


The picture above and the one at the foot of the page show the Wood preparizer at work preparing the material for the sub-base of the road prior to stabilizing.

By 1958 Mowlem's road construction success led to a further contract awarded by the Kenya government for completion of four more sections of upgraded and bitumenised highway. One section was between Mayako near Thika to Fort Hall, plus Mayako to Nyeri via Karatina (near Mt. Kenya), the second between Molo to Kitale via Eldoret, the third between Molo and Kisumu via Londiani and Kericho, and the fourth a short section of the highway to Mombasa near Mariakani.

Mr Blofield's comments are recorded in the "London John" magazine as follows,

"Considerable sums of money have been spent over the last ten years in improving (the road systems in Kenya) and some 200 miles of road have been bituminized, but the difficulty has always been to find money to complete the roads that are so badly needed."



MAP OF THE 300 MILES OF ROADS MOWLEM WAS CONTRACTED TO BUILD.
 "London John" magazine, July 1959.

"The contract entails the reconstruction and bitumenizing of approximately 300 miles of road. Selection of the roads was based on existing traffic densities and the roads given priority, which link up with existing bitumen roads, are shown on our map. (see map above) As will be seen, these cover only a very small part of Kenya Colony, but it must be remembered that vast areas of Kenya are little more than desert and these roads link up the principal farming areas. As would be expected, the available money is required to be used to provide the maximum length of road possible, and for this reason the specification has

been reduced to the minimum considered adequate to support the likely traffic for the next few years. The use of stabilized earths or gravels, of which this company has had some considerable experience in Uganda, has been adopted as providing the most economical base. Modern British and American equipment is being used in carrying out the work at an economical rate. The stabilized base course will be covered by two-coat bitumen surfacing, for which suitable crushed stone will be produced by quarrying alongside the new road. The requirement is eight miles of finished road per month."

While we might wonder at the requirement that Mowlem reduce the specification of the road to a minimum adequate for only a few years of road life, and as to how long these roads actually remained in passable standard is anybody's guess, we can show nothing less than admiration for the pace of road construction by Mowlem at eight miles per month in 1959, a feat unlikely to be achieved with modern technology in most advanced countries fifty years later in the 21st Century !

"Work was started on this project in June (1959) and the base camp is now being set up at Karatina on the Nyeri road, which is the first length to be constructed. Considerable earthworks are included in the contract on this stretch of road, and this work is already well advanced. Sectional wooden prefabricated houses (for staff) are being constructed in our depot and erected on site at the rate of one every two days. These plywood houses are being built to our design which has evolved as a result of experience and careful planning."

Road building always requires constant up-grading and frequent maintenance, particularly in East Africa with its constant short and long rainy seasons where torrential flooding could in time play havoc with and damage carefully planned roads and their embankments.

Many people preferred to travel to Mombasa by rail in the days before the Nairobi to Mombasa road was finally made into an international standard highway and sealed with bitumen. Most ex-pats who lived in Kenya before that road was upgraded in the early 1960's will shudder at their memories of that dreadful road at all times of the year. The only surfaced parts of the road were a short section of seal at Mckinnon's Road, a few miles past the old Embakasi airport turnoff, and a few miles of road outside Mombasa. The remaining part of the 330 miles from Nairobi to Mombasa was a rough and hair raising trip of anything from 7 hours of tortuous and excessively fast driving to 9 or 10 hours or more of leisurely progress, depending on the road conditions, floods, wash outs and mud.

More often than not, travelers would stop overnight at one or two different small hotels on the way, one of which I remember with nostalgia, Mack's Inn, south of Voi.

Whereas I may have painted a picture of extremely dodgy roads in the early years, there were exceptions of routes reasonably well maintained by the PWD as the following two photos demonstrates. Note the narrow width of the tarmac road to Magadi.



Road to Isaac Walton Inn, 1960.



Road to Magadi, 1962

In keeping with the subject, I have included a recording of a popular hit of 1958, Duane Eddy's "40 Miles of Bad Road", which was a favourite of mine that I played 'ad nauseum' on a gramophone in our study at school. You can access this recording via the youtube link below. (CTRL and click to follow the link.)

<http://www.youtube.com/watch?v=CLwrGxEII8E&feature=related>

Finally, for those of us who lived in East Africa in the days before road upgrades, we may have memories of trying to push a car that was stuck up to its axels in mud, or of waiting by the side of a remote road and flagging a passing motorist down to get assistance because your car's axel or sump was smashed on a protruding rock in the road. Here's a few recollections:

Lex Mantheakis (Rhodes, 1958-1963): *"I remember the Nakuru to Chemilil road – a nightmare when it rained – we used chains on the wheels and whenever the mud was really deep and got stuck there would be a waiting group of ragged Africans ready to push. We tossed simunis and shillings out the window as the wheels gained traction. We fishtailed out of the red slosh, spraying mud all over the poor chaps and were unable to stop to give them their wages, so out the window it went and whoever grabbed the coins was king of the day!"*

Alan Smith (Rhodes), 1958-1961:

“Dust was a major issue. Most cars and trucks drove on the crown of the road on some stretches of the Nairobi to Mombasa road because the road had deep drifts of fine dust on either edge of the road. Upon seeing a vehicle approaching in the distance, you had to risk the hazard of swerving off the crown of the road into the deep dust before the oncoming vehicle reached you. The fine dust always filtered through into the car leaving a coating on every surface, including all the passengers..

So it was not surprising that I read some years ago of a serious issue relating to road dust at a place where we lived for about six months in 1955. (‘Traveling the Radioactive Road’, CNN: 4 Nov 1999). Mrima Hill is 30 miles south of the Likoni ferry, out of Mombasa. Mowlem were mining for cobalt ore on Mrima at that time. In the late 1980’s the local African council had decided to use earth from Mrima Hill to resurface the rural roads nearby. Only a few years later there were numerous reports that local Africans were mysteriously dying and suffering serious health problems. This resulted in a search for the cause. It was found that the earth taken from Mrima contained radioactive thorium, uranium and other radioactive minerals, and the local Africans had been breathing in the dust that trailed every vehicle that passed them as they cycled or walked along the road !”

Don Elliott, (Grigg), 1942-1945.

“To judge by the house in which the family was living at the time, I would have been about four or perhaps five years old and the year was 1932, as I recall my first long distance road trip on Kenya’s rough and dusty roads. Not always dusty I might add, sometimes very wet and muddy!

At that time we had family friends living in Nakuru and we were living in a wood and iron house perched on anti white-ant stone pillars, which was located next to the Norfolk Hotel in Government Road, Nairobi. My father had not long since traded in his old B.S.A. motor cycle for a second hand Rugby Tourer. This meant that it had a frame supported canvas roof that could be lowered, should one so desire. Roll down canvas flaps when the hood was raised that could be fastened at the bottom were provided for added weather protection.

We were up very early, the sun not long over the horizon and the car was loaded with our luggage. I do not think it was provided with the luxury of a starter motor, so my father had to start it with a crank handle. At last we were on our way and I can recall being very excited about the forthcoming journey. No doubt we would have turned from Government Road, left and into Swamp Road, perhaps through Eastleigh and finally via Muthaiga and on to the start of the old Nakuru road.

In those far off days it was only a murrum surface, rain rutted and very corrugated! This was long before the kind Italian prisoners of war built us a

nice Roman road. I am told on good authority however, that Kenya has now come full circle and this road, at least in part has again reverted to its old self.

I cannot remember there being too many mishaps on the way up to Nakuru. The descent down the old escarpment into the Rift valley was a pretty hairy experience. Very bored baboons would be sat up on the ledges in the cliff's high above the road and would dislodge rocks, I am sure deliberately, in the hope and which they often did, of hitting cars travelling down the very precipitous and winding road. At the bottom would be the splash through the stream ford. Then on to Naivasha, where we would probably have stopped for lunch. And so some twelve long and dusty hours later, towards dusk, we finally reached our destination, a distance of a mere 160 kilometres!

Such a long and tedious journey would have no doubt justified at least a week's stay in Nakuru before commencing the arduous return trip home. In this case it certainly proved to be just that! When we came to make the long ascent up the escarpment the car's lower gears failed and we were forced to negotiate the steep and dangerous climb in reverse gear, being the only gear left to get us up to the top!"