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# Telecommunications and Conflict in German East Africa: 1891-1907

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## Abstract

*In modern Tanzania the ability to connect people and institutions within the context of the Internet and, even more specifically, via the mobile telephone network, would be considered an integral component of daily life. Yet there is almost no consideration by modern historians of the development of telecommunications within the country, a process that extends back well over a century. Within the entity that became known as German East Africa a telegraph line ran 791 kilometres from Tanga in the north to Mikindani in the south. It was created between 1891 and 1897. It was the 'unbroken cable' that literally tied together an initial strip of coastal territory under tentative control by the German colonial authorities. This essay looks at the circumstances in which this earliest physical infrastructure was constructed and used, and how it fit into a more pervasive postal framework. It also considers that there was an early public awareness of the functionality of such infrastructure, an awareness that led to it being dynamically targeted and then protected during several periods of internal insurgency. Since such insurgency primarily occurred south of the Rufiji, there is a particular emphasis on providing context for that geographical area.*

## 1.0 The Context: Moving Goods and Information

From the middle of the nineteenth century to at least the middle of the twentieth century, the telegraph was arguably the most significant medium of global real-time communication, critical to contractual commerce, diplomacy and military operations.[1] Continents (and important islands) were connected by submarine cables. Zanzibar entered the global network in 1879 as part of the submarine cable network that had connected Durban to Aden. Another submarine cable was laid across the channel from Zanzibar to Bagamoyo in 1890 and then to the new territorial capital of Dar es Salaam. By the beginning of the First World War there were 32 telegraph transmission points across German East Africa. It is suggested that 308,400 telegrams were registered in German East Africa in 1913.[2] Slightly earlier statistics from the whole of 1912 suggest a total of 315,970 -- of which 97,000

[1] A global view of the development of the telegraph is contained in Roland Wenzlhuemer. *Connecting the Nineteenth-Century World: The Telegraph and Globalization.* (Cambridge: Cambridge University Press, 2013). This otherwise useful study has almost no reference to Africa. For an older analysis specific to Germany colonialism and published on the eve of the Second World War, see D. Thilo, "Die Reichspost, ein Grundstein der Kolonien und der deutschen Niederlassungen im Ausland" and "Deutsch-Ostafrika," in *Geschichte der Deutschen Post in den Kolonien und in Ausland*, eds. W. Schmidt and Hans Werner (Leipzig: Konkordia Verlag, 1939), 1-10 and 229–79 respectively. Starting in 1892, Daniel Thilo spent three years in East Africa engaged in the construction of the colonial postal infrastructure. This Schmidt and Werner publication also contains one of the best cartographic overviews of the infrastructure considered.

[2] Thilo, "Reichspost", 9.

originated in the colony, 96,560 were received, and 122,410 were in transit to another territory.[3]

On a global perspective, the transmission of a telegram was usually linked to the physical infrastructure of a post office or postal agency. And such sites were often associated with other forms of communication. They might facilitate telephony (both local and long-distance). They certainly handled significant volumes of physical communication (postcards, letters, newspapers, parcels). Where appropriate across the globe, such postal agencies were physically located in close proximity to rail stations and harbours to facilitate wider regional transmission. They would often manifest themselves as significant architectural edifices, drawing attention to the centrality of the postal framework. The early expansion of a telegraphic network along the coastal hinterland of East Africa would also be paralleled by a significant change in marine transport infrastructure. It is not that forms of coastal marine transport did not already exist. The sailing dhow had

[3] Wilhelm Puche, "Post- und Telegraphwesen," in *Deutsches Kolonial-Lexikon* III, ed. Heinrich Schnee (Leipzig: Quelle and Meyer, 1920), 89-92. The discussion here can be read in conjunction with a contemporary publication by the same author. Wilhelm Puche, "Das Post und Telegraphie in den deutschen Schutzgebieten und bei den deutschen Verkehrsanstalten im Ausland in den Jahren 1903 bis 1914." *Archiv für Post und Telegraphie* [*APT*] 49, no. 10 (1921): 377-414. Puche spent 1891-1896 in the postal service in East Africa. The indicated pagination covers the East African context. For a survey that predates the coverage by Puche, see H. Herzog, "Deutsche Post- und Telegrapheneinrichtungen in den Kolonien und im Auslande." *APT* 31, no.2 (1903): 33-49.

traversed the Indian Ocean and the East African coastal ports for centuries. It was, among other things, particularly suited to small ports with no deep-water anchorage. The period from 1895 to 1900 would be a period of unprecedented usage of this technology in response to a series of local and global demands and this would play out most clearly in the southern coastal ports.[4] Yet transport by sail did not meet the more rigid timetabling criteria desired for the 'postal' function and, starting in 1891 with the launch of the *Deutsche Ost-Afrika Linie* (DOAL) supported by state subvention, a new era of steam transport developed in East Africa.[5] Steamships of various sizes and ownership would connect major European ports with the East African coast. The smaller East African ports (Tanga, Kilwa, Lindi, Mikindani) would be connected to Dar es Salaam and also further south to the major Mozambican ports and then to Durban in South Africa. Dar es Salaam would have scheduled connections with Zanzibar and farther across the ocean to Bombay.

Although the initial capital costs of marine transport supported the idea of state subventions for commercial

[4] The most detailed analysis of the dhow traffic, and coastal trade in general, is contained in Patrick Krajewski, *Kautschuk, Quarantäne, Krieg: Dhauhandel in Ostafrika 1880-1914*. (Berlin: Klaus Schwarz Verlag, 2006.)
[5] For a more immediate (and detailed) example of shipping activity connected to the 'postal' function, one might consult the locally published shipping schedules. An example for March 1905 details 31 shipping events from Dar es Salaam (and Zanzibar) that have postal implications. *Deutsch-Ostafrikanische Zeitung* VII, no. 9 (March 1905).

companies, it is important to consider the particular line of imperial authority involved specifically with telegraphic construction. In 1893 the Nyassa Company, heavily involved in the administration of northern Mozambique, contacted Berlin about the possibility of connecting their own proposed coastal line at the Ruvuma boundary. The letter expressed some uncertainty concerning the German institution with authority to negotiate.[6] In fact, the relevant metropolitan authority was the *Reichspostamt* (created in 1876). It coordinated the demands of other government departments and led the lobbying for financial underpinning in the colonies. It saw the telegraph construction within German East Africa as an integral component of the metropolitan infrastructure, not something that would be assigned to a commercial entity.

## 2.0 Building the First Coastal Line: the North

The first major telegraph line in German East Africa linked into Bagamoyo and extended northwards 184 kilometres to Tanga.[7] It is much simpler to indicate a completion date than

[6] *Bundesarchiv* [BArch] R 1001/1060 p. 49

[7] The construction of this initial line is described in [Rudolf Krause], "Die erste oberirdische Telegraphenlinie in Deutsch-Ostafrika," *APT* 20, no.16 (August 1892):547-52. The entire article was reproduced in the government records in Berlin, giving it an official imprimatur. BArch, R 1001/1060. p.33. An extensive summary of the same article was published shortly afterwards in Max Wildemann, "Die erste oberirdische Telegraphenlinie in Deutsch-Ostafrika," *Jahrbuch der Naturwissenschaften* 8 (1893):437-9. The original article is reproduced again with analytical commentary in Herbert Leclerc, "Die erste

to indicate an exact initiation date for a pioneering project of this technical nature. During early 1891 every opportunity was taken by local colonial authorities (Bagamoyo, Sadani, Pangani, Tanga) to explain the imminent construction project; warnings were also given against interference with that process. In fact, an armed escort was only assigned to the initial survey team and there were no discernible attempts to subsequently interfere with the construction of the line. Construction began in Bagamoyo but the project headquarters and primary supply depot were located in Tanga with its better harbour facilities, the depot function administered by a local German commercial firm. The first shipment of materials from Germany arrived in Tanga on 16 November 1891. Secondary distribution by dhow to coastal intermediate positions was coordinated by a German commercial firm based in Zanzibar. Besides obvious depot destinations at Bagamoyo, Sadani and Pangani, there were three other temporary depots established at intermediate positions along the coast between Bagamoyo and Pangani. The key initial shipment arrived in Bagamoyo on 25 November

oberirdische Telegraphenlinie in Deutsch-Ostafrika," *Archiv für deutsche Postgeschichte* 2 (1980): 21-31. Although it adds original diary information to the discussion, Leclerc does not say where that archival data resides. What is omitted in any modern discussion is the extensive retrospective by Krause written several years after he was repatriated to Germany on medical grounds. Rudolf Krause, "Erlebnisse beim Telegraphen-bau in Ost-Afrika," *Deutsche Verkehrs-Zeitung* vol. 17, nos. 27/28 (1893): 258-60, 268-70.

of that year. Like most economic activities in the interior, work was done in seasonal cycles determined by the rainy season; the first season of construction of work was halted at the end of March 1892 having pushed north of Sadani. It was officially completed on 10 December 1892.

The over-arching imperative to construct the line as quickly as possible inevitably led to certain *ad hoc* decisions being made at the metropolitan level before substantive initial ground surveys were available.[8] It was decided in Berlin that the transmission poles (*Stangen*) would be hollow metal structures manufactured in Germany; there was no certainty how wooden poles would react to local weather conditions or whether local insects would do substantive damage to wood. There was even less certainty about the availability and suitability of local timber supplies. There appears to be no exact figure of how many metal poles were shipped but given the stated mathematics of construction—roughly 12 poles per kilometre in straight-line construction or 15 poles in a curved line—it would not be unreasonable to posit that at least 2500 poles were shipped to East Africa just for the northern phase. Each of those posts was transported from intermediate coastal

[8] In a more 'autoethnographic' context the author would also admit to having significant experience of some of the technical issues discussed in this article. In his undergraduate years he spent the academic holidays over three years building high-voltage electrical transmission lines across remote areas of western Canada. He has done every role described in this essay with the exception of postal stevedore. He has been threatened with violence by local farmers.

depots into their final positions by being carried by two African porters. Coils of cable as well as insulators also needed to be transported by porters. Indeed, it is instructive to look at the question of cables. At the factory level, transmission cables were wound on large wooden reels, efficient to ship and designed to be finally placed on a special cart pulled by animal or steam locomotion along the surveyed route. This final distribution environment could not be emulated in East Africa. And the weight and size of the cable reels meant that they were cumbersome and dangerous articles for dhow transport. Consequently, these large objects had to be reduced into smaller coils of wire in Tanga, suitable for dhow and porterage transport. There were downstream consequences of downsizing; it increased the incidence of splicing/soldering operations needed to reconstruct the longer lengths of cable used in the ultimate construction process.

The recruitment of workers was initially hampered by the choice of Bagamoyo as start-point and the competitive environment for labour generated by major caravan routes extending into the interior; two large caravans were to depart Bagamoyo just as the construction team was initializing. There was often also a cultural bias to recruitment; porters preferred to sign up to contracts that returned them to their

home territory in the interior.[9] The telegraph project in the first instance had to rely on a secondment of African soldiers from the Bagamoyo *Schutztruppe* detachment to shift an initial tranche of 70 poles. The project also pulled in a temporary secondment of porters from the postal agency in Dar es Salaam as well 32 slaves brought from Pangani.[10] It made use of the local technical knowledge of the Holy Ghost Fathers missionaries near Bagamoyo as well as their tools; it also seconded a team of 10 African craftsmen out of the mission workshops. A core team of approximately 80 workers eventually came into being, either as members of the constituent specialized teams or as porters shifting supplies along the line; close to 200 labourers were involved at some point in the construction. The core workers were paid a monthly wage of 12 rupees, in addition to a food ration.[11] The latter supplement was necessitated by the sparse population along the line of construction and the uncertainty of

[9] The authoritative study of trans-territorial porterage is Stephen Rockel, *Carriers of Culture: Labor on the Road in Nineteenth-Century East Africa (*Portsmouth, N.H.: Heinemann, 2006*)*

[10] The institution of slavery was still legal at this point; its immediate abolition was considered to be economically disruptive to the coastal plantation economy. See Jan-George Deutsch, Emancipation Without Abolition in German East Africa c.1884–1914. (Dar es Salaam: Mkuki na Nyota, 2006).

[11] Just over a decade later this was still the average monthly wage around Bagamoyo, although it is noted that Nyamwezi porters also commanded an additional premium of 25%. See table entitled "Zusammenstellung der an der Küste üblichen Lohnsätze" dated 31 March 1903. BArch, R 1001/118, pgs.145-46.

guaranteeing a local supply source. There was also a line of thinking that suggested a centralized food supply lessened the possibility of petty local disputes by labourers with local agriculturalists. As with many economic activities in East Africa, construction was temporarily halted during the rainy season. This seasonal interlude could have signified difficulties in reconstituting experienced workers for the following season, but this does not appear to be the case here.

There was no significant overland transport infrastructure between Bagamoyo and Tanga that could substantively facilitate the construction of the telegraph line, nothing that resembled the well-established routes heading into the interior from Bagamoyo. The only maps available were British admiralty maps that detailed the shape of the coast; a detailed grid map of the terrain leading northwards to Tanga was not actually published until 1911. It was necessary to have survey theodolites and compasses to chart the progress of the line yet some of this key equipment was damaged in transit from Germany and only by a fluke of luck were missing components locally sourced in Bagamoyo. At best, surveyors could make opportunistic use of smaller paths and recognized crossing points of smaller streams as guidelines. An initial route survey lasting 45 days took place as materials were being placed into intermediate depots along the coast. As much as possible, the construction tried to maintain a straight line but deviations were inevitable given the exigencies of local terrain. There were even discussions during the survey of the extent to which

existing cultivated land should be used or avoided. A clearance team of 25 African workers used machetes and axes to clear a right-of-way measuring from 10 - 20 metres across. At one of the most difficult locations, it took three days to progress 480 metres. The clearance width had two functions: to facilitate maintenance access and to prevent the growth of tall vegetation that might compromise the transmission cable during periods of extreme weather. There were other localized threats to the cable infrastructure that were completely unforeseen by metropolitan planners! In subsequent years, there would be occasional incidents where it appeared that giraffe herds brought down cables and poles, probably moving at a speed triggered by a predatory threat.[12]

In addition to dangers to the physical line, there were health dangers to the teams constructing it. When clearing wooded areas there were frequent attacks by bees and other stinging insects as well as vegetative material that irritated the skin and eyes.[13] There was always an issue during the dry season of ensuring potable water and the potential of dysentery. However, the primary health danger in this northern stretch

[12] This type of disruption is confirmed by Wilhelm Methner from his tenure at Moshi in 1906-7. Wilhelm Methner, *Unter Drei Gouverneuren; 16 Jahren Dienst in deutschen Tropen* (Breslau [Wroclaw]: W.G. Korn Verlag, 1938), p. 118. But Methner also sees such destruction in a more metaphorical positive sense, that it hampered the detailed interference by the central administration in local district affairs!

[13] The probable culprits (along the entire coastal hinterland) were members of the *Euphorbiae* family.

appeared to be malaria. The contemporary report indicates that "…. all the Europeans and many of the Africans became ill from malaria. More than half of the 5 Europeans involved were incapacitated at any point in time."[14] The precise cause of malaria – specifically its linkages with transmission by mosquito—would only be proved later by Ronald Ross in India in 1897, for which he received a Nobel Prize in 1902. Yet there was a contemporary academic interest in malaria by individuals who were resident at either end of the northern line.[15] *Oberstabarzt* Emil Steudel had just accepted a secondment to the Bagamoyo detachment of the *Schutztruppe* in 1891. He would have had medical responsibility for the African soldiers who gave initial aid to

[14] *APT 20,* 551. Krause would also remark later that "The health condition of the construction officials was less than favourable. Of the five white overseers, at least one was afflicted with malaria at any point in time, often two or three." Krause, "Erlebnisse", 269.

[15] We concentrate on the figure of Emil Steudel in this discussion, but Friederich Plehn had been a colonial government doctor since 1893, first in the Kamerun and then at Tanga in 1894-5. During his African sojourn Plehn had studied malaria extensively and published several scientific articles on the subject. His practical guide to dealing with health issues in the field was published in 1902. Friedrich Plehn, *Tropenhygiene mit specieller Berücksichtigung der deutschen Kolonien: Ärztliche Ratschläge für Kolonialbeamte, Offiziere, Missionare, Expeditionsführer, Pflanzer und Faktoristen.* (Jena: G. Fischer, 1902). This publication was, of course, too late to be advisory to our telegraph expeditions. The same would also be true of the German edition of another targeted field guide. Ronald Ross, *Das Malariafieber, dessen Ursachen, Verhütung und Behandlung. Winke für Reisende, Jäger, Militärs und Bewohner von Malariagegenden*. (Berlin: W. Süsserott, 1904).

the telegraph project. His early academic focus was on the medical condition of the African porters who terminated their journey in Bagamoyo.[16] Yet by 1894, after his return to Germany, he would publish a detailed monograph on his experience of malaria in East Africa.[17] That monograph used sixteen anonymized German individuals that had come under Steudel's care in Bagamoyo as a result of severe malarial attacks. Individual 'K' is almost certainly Krause, the most senior administrator of the telegraph project. Exploring that case record provides considerably more detail for the health risks mentioned very briefly above. Suffering from an increasing cycle of malarial attacks in early 1892, Krause was finally brought to Bagamoyo and received hospital treatment for the last week of February. He was strongly advised to take recovery leave and left by sea for Durban in South Africa where he stayed for the month of June. He returned to the field in early July, largely in response to illness among his immediate subordinates. He only lasted a month before he was forced back to Bagamoyo for further treatment, followed by a permanent transfer back to Europe. He was not to see the completion of the northern phase while in Africa.

[16] Emil Steudel, "Die ansteckenden Krankheiten der Karawanen Deutsch-Ostafrikas, ihre Verbreitung unter der übrigen Bevolkerung und ihre Bekampfung." *Koloniales Jahrbuch* VII (1895): 171-202. This article concentrated on dysentery and smallpox and said little about malaria.
[17] Emil Steudel, *Die perniziöse Malaria in Deutsch-Ostafrika (*Leipzig: F. C. W. Vogel, 1894)

As the telegraph progressed towards its northern terminus, it had to deal with one of its most formidable obstacles, the passing of the Pangani river. The accepted technical approach was to use a submarine cable designed for rivers, but two obstacles existed, one specific and the other generic. The special fluvial cable shipped from Germany proved to be marginally short, forcing the construction of special platforms on either side of the river to eliminate the length deficiency. Fluvial cables were most secure in stretches of a river at some distance from its exit into a larger ocean, but this also was not the case here. In addition to seasonal fluctuations in this location, the cable had to withstand tidal surges that dynamically created sandbanks and small islets. The manipulation of the fluvial cable into position across the Pangani employed three dhows, 10 canoes and the efforts of 200 labourers. The northern line reached its northern terminus at Tanga on 8 October 1892.

From its initial construction across the difficult landscape of the lower Pangani, the maintenance of the riverine cable became problematic. Indeterminate breaks in the cable at this crossing led to a decision in 1900 to bring the cable out of the river. The makeshift aerial structure that was immediately erected had to deal with a sharply differential elevation between the southern and northern banks of the river, a condition that brought the cable uncomfortably close to the northern surface of the river at high tide. The interim solution was to ban categories of riverine traffic through the northern

channel. The eventual long-term solution was to manufacture a 23m steel tower in Germany that would equalize the elevation issue. It was shipped in three sections to East Africa in early 1905, specifically to Tanga. Each of these sections was then towed on barges to a new designated crossing point on the Pangani. Its final installation was delayed by circumstances discussed later in the essay.

### 3.0 Building the Coastal Line: the South

The physical construction of the southern line was begun in August 1893. Leclerc's assertion that it was completed quicker than the northern line, despite its greater length, is substantially inaccurate![18] The southern extension of the telegraph can be seen as two consecutive projects, one to connect Dar es Salaam with Kilwa and the second to continue to Lindi and Mikindani. Each stage would incorporate modifications based on the previous stage.

Arguably the southern extension began even earlier than August.[19] An advance survey was carried out from 1 May 1893 to 17 June 1893 and that survey incorporated a deliberate intention to observe the potential alteration of physical conditions during a period of the rainy season. Because it was an isolated survey team operating in an area still seen as not

[18] Leclerc, "Telegraphenlinie", 31.
[19] The Dar es Salaam-Kilwa construction is considered in Scheunemann, "Erweiterung der Telegraphenanlagen in Deutsch-Ostafrika," *APT* 22, no. 22 (November,1894): 694-700.

entirely under tight colonial control, it was accompanied by a military detachment. The survey team again accessed historical experience by attempting to utilize an older caravan route that had existed between Dar es Salaam and Kilwa.

Although the technical construction documentation pays little historical attention to this route and its immediate environment, it is instructive for us to do so. This is the region that produced gum copal, the second most valuable export product in the Zanzibari trade network during the nineteenth century other than ivory.[20] And the complex local commercial structure that controlled production and trade was notoriously suspicious of strangers passing through the region.[21] More immediately relevant to our study is that the wider Rufiji basin was the primary focal point of mangrove forestry, of which a primary product was the 'pole' highly desired for construction purposes, shipped by dhow to Aden

[20] See Thaddeus Sunseri. "The Political Ecology of the Copal Trade in the Tanzanian Coastal Hinterland, c. 1820 – 1905" *The Journal of African History* 48 no.2, (2007):201-220.

[21] The diplomat Richard Elton is generally credited with providing the first detailed description of this route in the 1870s. See the summary in Thaddeus Sunseri, *Wielding the Ax: State Forestry and Social Conflict in Tanzania, 1820-2000* (Athens: Ohio University Press, 2009), 12-17. Usually forgotten by historians is the still earlier journey by Albrecht Roscher. See J. W. Heldring, *The Killing of Dr. Albrecht Roscher: The Story of a Young German Explorer in East Africa, 1858-1860* Kibworth: Upfront Publishing, 2003), 161-8.

to be distributed in the Gulf and even further to India.[22] In short, the technical process used to distribute German metal poles along the coast emulated a process long established in East Africa to shift mangrove poles.

The primary technical change to material components on this first southern stage had been an extension of length to the standard poles, specifically triggered by the experience with giraffes on the northern line. Those same poles were also given enhancements to reduce the speed of corrosion over time. Again, in light of previous giraffe damage, the isolators were weakened so that they would fall away from the pole under pressure and be less likely to prejudice the integrity of multiple poles. And the last change was to introduce a slightly lighter cable, lessening costs but also easing local porterage transport.

The construction team was led by *Telegraphenassistent* Preuss assisted by four other German technicians. The African component of the team grew from an initial 35 men to start the clearance cycle, growing to 92 as the other construction tasks were enabled. Virtually all of the local labour was recruited in either Bagamoyo or Dar es Salaam. A small group of workers that were identified as "notably capable and reliable" were assigned to the 'stringing' team to learn

[22] Sunseri indicates a figure of twenty thousand poles shipped from Zanzibari territory in 1859, a figure that he considers an underestimate. Sunseri, *Ax,* 30.

specialized skills like soldering the smaller cable coils into longer lengths.[23] Seventeen temporary camps were progressively established as the team proceeded along the survey line southwards, with local labour hired to progressively shift material from one camp to another. Localized arrangements were periodically made with African leaders to supervise small stores of material that could be quickly accessed to make repairs in a post-construction period.

There was considerable physical stress brought to bear on the construction team as it proceeded southwards and this stress mirrored that experienced on the northern route. The advance 'clearance' team, as always, took the brunt of the punishment. In addition to the privations of adverse weather, they were regularly attacked by bees and wasps housed in hollow trees that the workers were attempting to clear, as well as being afflicted by stinging material issued by other plants. The African workers were again impacted early in the project by malarial attacks which led to nearly ten per cent of the workforce being incapacitated and was instrumental in the deaths of two local workers. By October the malarial threat to

[23] The term 'stringing' is derived from the author's construction experience. It refers to the team that distributes the cable (the 'string') between the poles and then ascends the poles to permanently attach the cable to the insulators. The 'stringing' team is generally considered to comprise the elite technical workers (the 'linemen') within the whole technical crew.

African workers appeared to be receding, just as it began to impact the European supervisory staff. One German supervisor was removed to Kilwa for treatment and there were times when only two German supervisors were capable of working. There was retrospective praise for the African workforce faced with a variety of privations. "The fact that the construction progressed relatively quickly must be in part attributed to the diligence of the workers." [24]

The crossing of the Rufiji river was the equivalent of the passage of the Pangani in the north. It was approached in two phases. A temporary aerial construct had been established across the Rufiji some considerable distance from the delta area just to facilitate a rapid connection to Mohoro and then to Kilwa. Then, at the end of the main construction, a replacement fluvial cable was nudged up the Rufiji, initially by government steamer, then by a shallow draft sailing pinnace and finally by canoe and human intervention into its final resting place. The telegraph line at Kilwa was fully operational on 21 February 1894.

Approximately six months later, in September 1894, Kilwa came under pressure from a Yao warlord called Hassani bin Omari Makunganya.[25] The initial indication of hostility was

[24] *Ibid.,* 698

[25] An early recognition of the Mavuji Yao context is given in Gwassa, *Outbreak,* 80-1. An immediate description is contained in "Über den Verlauf der Expedition gegen Hassan bin Omari" *Deutsches Kolonialblatt* (*DKB)* 7, no.1 (1896): 6-8. The dynamic expansion of Yao entities in

an attack on the telegraph infrastructure stretching 20 km north of Kilwa. "Poles were uprooted, insulators were shattered, and the cable was cut in many places."[26] On 7 September 1894, under the leadership of Makunganya, a large force attacked the German fortifications at Kilwa itself but were beaten off after a fierce battle. Yet the over-extended resources of the *Schutztruppe* meant there was little possibility of an immediate counter-offensive. It took more than year before a coordinated campaign along the southern coast was launched against Makunganya. The Yao leader was finally captured on the November 1895. He was among sixteen individuals subsequently executed in Kilwa. This was not just a 'Yao' event. Prominent members of the local Kilwa administration and the local trading community were also implicated. Four prominent Indian traders were also

considered more widely in Edward A. Alpers, "Trade, State, and Society among the Yao in the Nineteenth Century." *The Journal of African History* 10, no. 3 (1969): 405–20; Terence Ranger, "European Attitudes and African Realities: The Rise and Fall of the Matola Chiefs of South-East Tanzania." *The Journal of African History* 20, no. 1 (1979): 63–82; Gwyn Campbell, "The East African Slave Trade, 1861-1895: The 'Southern' Complex." *The International Journal of African Historical Studies* 22, no. 1 (1989): 1–26; Felicitas Becker, 'Traders, "Big Men" and Prophets: Political Continuity and Crisis in the Maji Maji Rebellion in Southeast Tanzania', *The Journal of African History* 45, no.1 (2004): 7.

[26] Wilhelm Puche, "Das Post- und Telegraphenwesen in Deutsch-Ostafrika vom Jahre 1890 bis 1899." *Mitteilungen des Sminars for Orientalische Sprachen* IV (1901): 11

condemned to death but their sentence was eventually commuted and they were deported in chains to Aden.

The Yao disruption emphasized the importance of having instant military communications along coast, yet there were other idiosyncratic reminders of telegraphic utility. On 3 May 1895 the President of the German Colonial Society arrived unannounced in Lindi, deciding on an impulsive whim to catch the coastal steamer on a touristic peregrination southward from Dar es Salaam. His arrival caught the local administration off balance.

> "It was an unexpected event for a small settlement, at that time off the global beaten path, and not yet connected by telegraph—called *Sim* by the Swahili—to Dar es Salaam."[27]

Given the various military and political developments unfolding in the immediate southern interior, that local administration might be forgiven for having its attention focussed elsewhere. In the immediate aftermath of the capture of the Yao leaders, a detachment of the Lindi *Schutztruppe* force marched northwards to Dar es Salaam

[27] Heinrich Fonck, *Deutsch-Ost-Afrika: eine Schilderung deutscher Tropen nach 10 Wanderjahren* (Berlin: Vossische Buchhandlung, 1907), 137. See "Besuch des Schutzgebietes durch Seine Hoheit Herzog Johann Albrecht von Mecklenburg-Schwerin," *DKB* 6 (1895): 296,320. The earlier elaborate preparations for royal entertainment in Tanga are documented in F. Mismahl, "Hoher Besuch in Tanga," *Deutsche Kolonialzeitung* 8, no.20 (18. May 1895):156-7.

specifically to demonstrate to local leaders the "inviolability" (*Unantastbarkeit*) of the telegraph infrastructure. [28]

The next (and final) stage of telegraphic construction was only initiated from Kilwa in April 1897 and was operational at its terminus in Mikandani on 24 September of that year.[29] Predictably, the format of construction in this final stage broadly reflected the format of the previous years, yet adjustments continued to be made based on past experience and local conditions. A slightly heavier cable was re-introduced to enhance resiliency. Wooden (mangrove) poles were occasionally substituted in conditions where saline deposits might possibly corrode the standard metal constructions. The hippopotamus rather than the giraffe was now seen as the probable animal threat to construction, and poles received extra reinforcement in known grazing areas. The river crossing for Lindi, based on fluvial cables, was simplified by taking the crossing point 4 km inland, dividing the cable across a well-established island.

The size and composition of the construction crew was similar to the first southern stage; a total of almost 90 people were deployed. Six European personnel were engaged, led again by *Obertelegraphenassistent* Preuss. The mention of three

[28] "Marsch der Schutztruppe" *DKB* VII, no. 2 (1896): 45
[29] The Kilwa-Mikindani construction is detailed in "Erweiterung der Telegraphenanlagen in Deutsch-Ostafrika," *APT* 26, no. 5 (March, 1898): 142-3.

African overseers introduces for the first time an intermediate layer of local management. The remaining 82 African personnel were again split across specialized operational teams. The largest proportion (45) were assigned to the advance 'clearance' team, a higher proportion than that deployed in the northern section. Some twelve were assigned to the 'setting' team that raised the poles and they were followed by a 'stringing' team of eight that deployed the cable between poles and then brought it into its final aerial position.[30] The remaining personnel were engaged in a continual shifting of components along the line of construction.

On the northern Tanga section, the question of food provisioning had been paramount. In the final construction southwards from Kilwa, drinking water was the most significant issue. The availability of potable water during the dry season was a powerful factor in the economic life of the South.[31] The considerable caravan traffic that arrived and departed from Kilwa had to factor in a proportion of water carriers to survive the journey westwards across the colony. Many villages in the hinterland of Lindi routinely fetched

[30] The team designations in apostrophes derive from the author's personal construction experience. See n.15.

[31] The ubiquitous concern with water in the Lindi hinterland is considered more generally in Lorne Larson, "Conversations on the Mbwemkuru: Foreign Itinerants and Local Agents in German East Africa," *Itinerario* 46, no. 1 (2022): 61-83.

clean water during the dry season from known springs in more elevated areas. This was considered the work of women and children locally and it was this institutionally recognized procedure that was adopted by the telegraph crew. Teams of women and children were hired to deliver up to 40 loads of water to

the crew on a daily basis, sometimes shifted over a distance of four hours on foot.

The impact of malaria was as severe on the Europeans was as it had been on the previous stages. Preuss contracted malaria of a severity that eventually had him sent on an ocean convalescent trip, probably to South Africa like his predecessor. His subsequent return was considered operationally critical since it was agreed that only two of the six European supervisors were fit for service at any point in time; the rest were side-lined with malarial attacks. All survived to see the operational implementation of the telegraph operation.

**4.0 Cultural Continuities and Adjustments**

The completion of the telegraph along the coastal strip led to a change of communication culture, but that change was not immediate nor was it uniform. Fanny Dufétel-Viste has considered some of those differential issues of usage across

the entire German colonial terrain.[32] From the perspective of Dar es Salaam, there was considerable interest in the culture of ethnic usage in the immediate months following the opening of the northern line on 8 October 1892. The use of the telegraph was assumed among the European population, not only by the military and administrative cadres but also by the European trading houses; it was a commonplace feature of the metropolitan communications landscape. The northern line, almost coincidentally, connected the greatest concentration of European inhabitants.[33] However, it was actually the parallel telephonic capabilities of the coastal line that initially most excited the Arab and Indian inhabitants along the East African coast.

> Most of the Indian and Arabic merchants lack the knowledge of a latinized script, essential for the composition of telegrams. They prefer to avoid potential confusion surrounding the construction and delivery of the telegram, and they do so by using the alternative of the telephone. This instrument also facilitates the more interactive form of

[32] Fanny Dufétel-Viste, "Télégraphe et telephone dans les colonies allemandes: entre concurrence et complémentarité." *Flux* 78, no.4 (2009): 76-83. For a slightly wider postal perspective by the same author see Fanny Dufétel-Viste, "Maîtriser l'espace: l'action de la Reichspost dans les colonies allemandes", *Revue de l'IFHA* 1 (2009): 187-93.
[33] Jürgen Becher, *Dar-es-Salaam, Tanga and Tabora: Stadtentwicklung in Tansania unter deutsche Kolonialherrschaft (1885-1914)* (Stuttgart: F. Steiner, 1997): 163.

> commercial negotiation favoured by coloured participants, one which is not restricted to a few precise words.[34]

The set cost of one rupie for five minutes conversation was considered economically viable in the commercial sector and in the first months of 1893 non-European usage in Dar es Salaam started at 90 telephonic conversations in January, climbed to 131 in March and then 147 in April. For the year 1913 the number of localized telephone calls being made (304,170) roughly equated to the number of localized telegrams. There was also a wider financial conservatism at work among the non-European trading community. The sending of written messages by dhow (around the Indian Ocean) was estimated to be roughly half the cost of the new maritime methods now provided by the German colonial postal system. It took a number of years before the advantages of speed and guaranteed regularity started to shift usage patterns.

The Swahili language is sometimes mentioned in the context of non-latinized scripts. This may indeed have been the case among groups of African coastal traders. This should not detract from the fact that Swahili was being made available in a latinized form as early as the 1870s, initially for purposes of Christian proselytization but then for a general German

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34 For this immediate northern post-implementation perspective see "Benutzung der Telegraphenleitung Bagamoyo-Tanga zum unmittelbaren Verkehr des Publikums," *APT* 21, no. 13 (1893): 469-70. For a similar perspective on cultural usage see Scheunemann, "Erweiterung", 700

audience that needed to communicate with the local population. There was an early educated African cadre that could communicate in latinized scripts and they were quite quickly inducted into the postal service as telegraph operators; they are certainly operative in Kilwa in 1901.[35] There is a frustrating lack of written knowledge about where African employees received their education; the probable avenue would be through the government educational network that was inaugurated in Tanga in 1892. There were eventually government schools at all the coastal locations mentioned in this essay, with the exception of Mikindani. Additionally, Lindi had a highly respected technical school. By mid-1911 there just over 4,000 students in schools under direct government control.[36] In addition to the more centralized position of telegraph operator, there existed other African roles. Special stevedores (*Ruderer*) moved postal objects off and on steamers across coastal beaches. And the position of maintenance lineman (*Leitungsaufseher)*, routinely patrolling the line, rapidly became a solely African function.[37]

In addition to the line of cable communication and coastal steamer connections, a third stream of postal communication

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[35] An important visual coverage is presented in *Der unterbrochene Draht: Die Deutsche Post in Ostafrika – Historische Fotografien* (Heidelberg: Schenk, 1989). The Kilwa photograph is located at pg. 109.
[36] Martin Schlunk, *Das Schulwesen in den deutschen Schutzgebieten* (Hamburg: L. Friedrichsen & Co, 1914), 34.
[37] These functions are again illustrated in *Historische Fotografien* on pgs. 85,113,115,129-131.

developed. It was a system that could be both structured and unstructured. It materialized in an environment where there were initially no railways or maintained roads that could be used by animal-drawn carriages. It drew on an existing long tradition of human porterage. A *Postboten* (or *Feldboten*) unit typically consisted of an armed uniformed individual accompanied by approximately five porters.[38] It was an African unit. From the perspective of Kilwa, such delivery units were useful for shifting material between Kilwa and Mohoro, the latter an administrative centre that did not have easy access to a coastal port. But they also offered an operational flexibility that complemented the rigidity of coastal steamer departures and arrivals. Consequently, Lindi might also shift postal objects by land to Mikindani as the need arose.

There were also structured lines of communication between the coast and the interior that had existed long before the German period, linkages that had no obvious economic rationale. Christian missionary societies were an obvious example. Although the earliest missionary societies in German East Africa were largely French or British in origin, the gradual emergence of German missionary societies started to provide a subtle metropolitan impetus to the way communication services were deployed in the colony. In 1891

[38] For a photograph of arguably the first trans-territorial *Postboten* initiative in 1892, see *Historische Fotografien,* 110.

the first German evangelical missionaries arrived to establish services in the densely populated African communities at the northern end of Lake Nyasa.[39] They travelled there via the circuitous Zambezi-Shire route that ran through Portuguese and British territory. In the following year the components of a lake steamer (financed by public subscription and christened the 'Hermann von Wissmann') were transported by the same route to Lake Nyasa and re-assembled in British territory in early 1893; the maiden arrival of the ship at the northern end of the lake took place on 21 September 1893. To facilitate postal services to these more remote early German settlements, reciprocal service arrangements were made were made with both British and Portuguese colonial authorities from the middle of 1894. The average delivery time for outward postal shipments from Dar es Salaam to Langenburg (current Matema) at the northern end of Lake Nyasa took 50 days, the reverse journey 62 days. Steamships of the DOAL would drop mail at the coastal port of Chinde at the mouth of the Zambezi. River steamers of the African Lakes Company would then take responsibility for transport up the Zambezi and Shire rivers then transfer responsibility to the land postal services of British Central Africa, who would provide land-based transport to the southern end of Lake Nyasa. The

[39] The classic study of the Protestant evangelical initiative in this region is Marcia Wright, *The German Missions in Tanganyika, 1891-1941: Lutherans and Moravians in the Southern Highlands* (Oxford: OUP, 1971).

German steamer 'Herman von Wissmann' would then enable transport to German jurisdiction northwards.

This arrangement was always seen at the metropolitan level as interim, if for no other reason than it was not under complete German control. In 1898 a replacement structure was put in place that was primarily land-based. It reflected the increased confidence of a colonial administration that considered it had now consolidated its civil and military power in the area assigned to it. Kilwa rather than Chinde was now the pivotal transfer point on the Indian Ocean, inaugurating a scheduled monthly *Postboten* transfer that crossed by land to Songea, then to the Lake Nyasa deepwater port of Wiedhafen (today called Manda) to connect with a steamer connection to Langenburg. The outward route was scheduled to take 33 days, the reverse journey 26 days. In short, it sought to halve the transmission time of postal products across the southern interior. This increased importance of Kilwa can be seen in the telegram statistics for 1898/99. Kilwa received 1,891 telegrams, sent 1,997 telegrams but it also acted as a transit point for 1,527 telegrams destined for points further westwards, third only to Dar es Salaam and Bagamoyo. The same source of statistics indicates that the destination of Langenburg was second only to Tabora in terms of letter turnover for inland postal agencies and rated first in

terms of unregistered packages.[40] Within the space of two years the function of Kilwa as a southern transit hub to the southern interior was transferred to Dar es Salaam. The trigger event for this change was most probably the creation of the Mahenge military district in 1899 and the establishment of a district headquarters in the Mahenge Highlands. The new route moved in a diagonal line through Kisaki to Mahenge and Songea before following the previous route to Langenburg. The outward delivery duration was a comparable 30 days.[41] This southern delivery route would change yet again as the construction of the Central Railway progressed across the colony; Kilosa would then become the key transit point for postal objects moving southwards.

The extension of *Postboten* units from opportunistic coastal devices to scheduled trans-territorial services was not just a question of dealing with distance. The seasonality of the rainy season affected not only the physical terrain but also the supply of food and water.[42] The number of people attached to a postal delivery unit could dynamically expand and contract

[40] Wilhelm Puche, "Das Post- und Telegraphenwesen in Deutsch-Ostafrika vom Jahre 1890 bis 1899." *Mitteilungen der deutschen Orient-Gesellschaft* 4, no. 3 (1901): 1-36. This analysis is one of the best territorial coverages for the 1890s. The statistical tables are on pg. 25.
[41] Herzog, "Deutsche Post", 37. Also see map on previous page.
[42] The accelerated acquisition of topographical knowledge by Germans in the 1890s is discussed in Lorne Larson, "Conversations along the Mbwemkuru. Foreign Itinerants and Local Agents in German East Africa," *Intinerario* 46, no. 1 (2022):62-8.

during a journey. At certain times of the year, it might attach itself synergistically to a commercial caravan. Waterproof packaging had to be designed for the rainy season. The duration difference in delivery schedules eastwards and westwards stated above may seem puzzling but it has to be partially understood in the knowledge that bulkier packages only flowed westwards. Units bound for the coast could therefore move faster with lighter loads and also shed auxiliary support personnel.

Communication across the colony also needs to be seen in terms of the long-term development of what Greiner has called a 'vernacular infrastructure', in other words the expansion of roads with animal-drawn transport.[43] In 1894 a German merchant called Wehlan was given a government subvention to improve the road surface from Kilwa to Lake Nyasa. His initial emphasis was on the section that ran from Kilwa to the military post at Barikiwa (later Liwale) on the western border of that district and it was in that western outpost that he established his operational base. The

[43] Andreas Greiner, "Colonial Schemes and African Realities: Vernacular Infrastructure and the Limits of Road Building in German East Africa." *The Journal of African History* 63, no. 3 (2022):328-347. Greiner's coverage is somewhat incomplete for the southern part of the colony. In a general circular in mid-1900 Governor von Götzen names Alfred Pfüller as one of the key contractors undertaking investigative work on animal-driven transport infrastructure. The governor stresses to his subordinates that these investigations are in an "experimental stage". BArch, R 1001/48, pg. 120.

additional component of his contract was to experiment with the introduction of oxcarts based on the South African model. He was said to have improved the road to Kilwa from a narrow path to a 10m wide thoroughfare. His draught animals died of disease, he died of severe malaria in 1898 and his abandoned oxcarts were acquired by the military post at Barikiwa.[44] His work was taken up around 1900 by a young entrepreneur called Alfred Pfüller, who acquired his initial experience trying (unsuccessfully) to establish an all-weather road surface for animal-drawn vehicles stretching from Dar es Salaam to Kilosa.[45] He then shifted his attention southwards trying to build on the legacy of Wehlan, largely by expanding the repertoire of draught animals, including camels. He was equally unsuccessful. A proposed government initiative to build a railway across the same terrain then prompted his decision to become a settler at the exact centre of that proposed route, in order to potentially exploit a variety of supply opportunities.

In June 1904 a group of German evangelical missionaries left Kilwa heading for their base at the northern end of Lake Nyasa.[46] It was the first time that this organization felt that

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[44] Kurt Pfund, *Kreuz und quer durch Deutsch-Ostafrika* (Dresden: Privately published, 1912): 65. Pfund was in Barikiwa in 1899 en route to Songea.

[45] *Deutsch-Ostafrikanische Zeitung* III, 16 (28 April 1901): 3.

[46] "Zum erstenmal von Kilwa nach Wiedhafen: Ein neuer Zugang zum Nyassagebiet," *Missionblatt aus der Brüdergemeinde* (February, 1905): 49-54.

the conditions were adequate to navigate personnel across the direct route from Kilwa. They acquired a mule in Kilwa that accompanied them on their journey. To that animal they added an oxcart in Liwale that had been abandoned years previously by Wehlan. They passed a military officer riding a bicycle from Songea to Kilwa. They talked to Alfred Pfüller and visited his new settlement several days eastwards of Liwale. They completed the journey to Langenburg without any major incident in 36 days. Their departure from Kilwa had been on 10 June 1904. Some five weeks later, another expedition departed Kilwa, financed by the Colonial Economic Committee, and headed by Paul Fuchs.[47] It was tasked with constructing a feasibility study for the construction of a southern railroad running from Kilwa to the lake port of Wiedhafen. Fuchs also spent some time talking to Alfred Pfüller. At that time, he noted that: "Talk about the possibility of wagon traffic on this route must be considered as idle fantasy; all previous attempts in this direction have failed miserably."[48] His technical assessment was probably broadly correct but it ignored the fact that, weeks previously, a crew of missionaries had haphazardly done exactly that! [49]

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[47] Paul Fuchs (with John Booth), *Die wirtschaftliche Erkundung einer ostafrikanische Südbahn* (Berlin, E.S. Mittler, 1905). John Booth, a prominent Songea settler, contributed five out of the twenty chapters.
[48] *Ibid*., 30
[49] The military doctor in Songea, Otto Panse, was so astonished to see the arrival of the missionary mule that he insisted on taking blood samples for his tsetse-related research. A relevant academic article would appear

Both of these 1904 journeys also demonstrated a measured response to the changes in technical knowledge regarding the malaria that had plagued the telegraph construction crews. The missionaries specifically reference the recent travel guidance of Friedrich Plehn and were taking prophylactic doses of quinine for the entirety of their journey; they had no medical incidents for the duration of the trip. Paul Fuchs also specifically referenced new malarial knowledge and took similar ameliorative action in his longer and more circular route. He also had no problem with malaria. The question may also be asked why the evangelical missionaries were not taking the more diagonal route to the interior now utilized by the *Postboten*. The answer to that is partly logistical (more rugged terrain and river crossings) but it may well involve the longstanding reputation of the Kisaki route for malarial infection. Indeed, one of their observations in Liwale was the death by malaria of a young woman who had just arrived to join her merchant husband, a woman who appears to have travelled by that more diagonal route.

## 5.0 Attacking the Line (Again): 1905-07

This essay has led to the point where we might consider (again) the impact of conflict on communications.[50] The

in December of that year. Otto Panse, "Trypanosoma Theileri (?) in Deutsch-Ostafrika." *Zeitschrift für Hygiene und Infektionskrankheiten* 46 (1904): 376–8.

[50] This section relies heavily on "Einwirkung des Aufstandes in Deutsch-Ostafrika auf die Betriebsfahigkeit der Telegraphenlinie." *APT* 34, no.23

armed uprising in the south of the colony known as Maji Maji had no centralized leadership and no single geographical focus.[51] It could not be stemmed by sending troops to apprehend one individual as had happened with Hassan bin Omari Makunganya. Hard decisions had to be made by the colonial government concerning the allocation of the technical and military resources under their control.

Almost exactly a year after the uneventful promenade of evangelical missionaries across the southern landscape, the situation changed abruptly. A Roman Catholic missionary caravan was destroyed by local insurgents as it approached Liwale. The commercial and military individuals mentioned in the 1904 missionary publication also died in a subsequent attack on Liwale. An exception was Alfred Pfüller, whose more westerly position gave him sufficient warning to escape to Songea. He subsequently returned to Germany via the Zambezi route to meet his family who had been on holiday. His escape route was indicative of the temporary

(1906):740-44. Also consider Thilo, "Deutsch-Ostafrika," 256, as well as additional details in *Deutsch-Ostafrikanische Zeitung* VIII, 26 (30 June 1906): 2.

[51] The modern scholarship surrounding Maji Maji is extensive. For a representative sample that cuts across our area of geographical interest see Lorne Larson, 'The Ngindo: Exploring the Center of the Maji Maji Rebellion' in J. Giblin and J. Monson (eds.). *Maji Maji: Lifting the Fog of War* (Leiden: Brill, 2010): 71-116; Thaddeus Sunseri, 'Reinterpreting a Colonial Rebellion: Forestry and Social Control in German East Africa 1874-1915," *Environmental History* 8, no.3 (2003): 430-51; as well as Becker, "Traders", 1-22.

reinstatement of the flow of people and postal objects through British and Portuguese territory.

A technical telegraph team consisting of two individuals arrived in Kilwa on 4 August 1905. One technician headed northwards with a military escort finding evidence of cut cables, uprooted poles and shattered insulators. Basic repairs were done quickly to bring the Kilwa-Dar es Salaam connection back into operation by 7 August. A technician was based at the temporary military post of Samanga, opposite the Matumbi Hills, and made daily inspections for damage and relaying telegraphic messages to and from troops in the field. Samanga was progressively reinforced with military personnel, as well as being connected to the main telegraphic line and a heliograph unit in the Matumbi Hills. Although this segment of the line was kept operative, it was under continuous insurgency pressure for months. The removal of the temporary telegraph extension to Samanga on 29 January 1906 signalled a dramatic reduction of military pressure. Gilbert Gwassa was to conduct field research in this geographical area in 1967. He collected oral evidence of the development of specialist messenger units on the insurgency side delivering intelligence reports known as *simu za midomo* (mouth telegrams).[52] This description may have been seen by later historians as an isolated curiosity but in the context of

[52] Gilbert Gwassa, *The Outbreak and Development of the Maji Maji War 1905-1907* (Cologne: Rüdiger Köppe, 2005), 130-1.

the discussion in this essay, it now arguably assumes a more integrated significance, a local imitative response to the colonial communications structure.

It became immediately clear in Kilwa that even more extensive damage was being inflicted southwards. A team was sent in that direction under the supervision of the second technician. An area was immediately repaired, roughly comparable to the distance between Kilwa and Samanga but it soon became obvious that protecting (and repairing) the entire length to Lindi would require six times the military resources deployed north of Kilwa. The decision was rapidly made to temporarily abandon maintenance of the line and assign existing military resources to a more general offensive role. As a result, that particular section became inoperative for ten months between 27 August 1905 and 26 June 1906. Communication functions between Kilwa and Lindi reverted to a government steamer.

Requisite repairs south of Kilwa were resumed in May and June 1906. Technicians encountered destruction that "exceeded all expectations".[53] There were fourteen discernible sections of damage, the most significant covering fifty kilometres. Insulators had been comprehensively shattered in these areas; 459 poles had been uprooted of which 359 were soon located. Over a longer period, poles were eventually found in a variety of locations at a variety of distances from

[53] Thilo, "Deutsch-Ostafrika," 256.

the line, at times revealed by seasonal bush fires. Metal components had often been fashioned into weapons, although the core metal pole structure remained impervious to manipulation.

At some point we may want to speculate on why telegraph lines were seen as strategic targets by African insurgents. In the absence of contemporary explanations from those who did the destruction, we may want to engage in some speculation, and start that by looking at another global environment. In 1872 the British satirical magazine *Punch* published a cartoon of two farmers perusing a newly erected telegraphic line in a rural area of England.[54] The first farmer asks his companion about the purpose of the poles. His companion suggests the poles are there to carry the wires. The first farmer then asks about the purpose of the wires, which elicits the reply that the wires are there to support the poles! What is absent from the British scene, and very evident in the East African milieu, is the repetitive public lecturing about the "inviolability" of the telegraph infrastructure. It is not necessary for insurgents to know the precise functionality of the poles and wires. It is only necessary to know that the colonial administration publicly affirms it to be critical infrastructure!

Coincidentally, the attacks on the telegraph infrastructure of the southern line also had consequences for the structure of the northern line. The experienced telegraph maintenance

[54] Wenzlhuener, *Connecting*, 249-51.

crews, waiting to put the new tower structure into place on the Pangani crossing, were abruptly called southwards to help with the maintenance of the line south of Dar es Salaam. This northern erection work on the Pangani was only revisited and completed in February 1906 and, even then, depleted technical teams had to be supplemented with local police personnel and prison labour.[55]

## 6.0 Conclusions

This essay has attempted to publicize an important early component of communications infrastructure, the telegraph. It has further explored its connection to military insurgency, a connection that would make perfect sense to metropolitan military planners of the time. The earliest survey of Maji Maji, published in 1909 would make forty-nine distinct references to the telegraph. It would even imply that the telecommunications infrastructure (particularly the telephone) may have been actively used on occasion to initially plan and coordinate the insurgency.[56] John Iliffe's comprehensive coverage of the Tanzanian historical space published in 1979 has a single textual reference to telegraph

[55] These later architectural changes are discussed in "Schwierigkeiten bei Umlegung der Telegraphenlinie bei Pangani," *APT* 34, no. 17 (September 1906): 545-9.

[56] G. A. von Götzen, *Deutsch-Ostafrika im Aufstand (*Berlin: Dietrich Reimer, 1909). The claim for counter-intelligence usage is proposed on pg. 249.

construction.[57] This essay has made a targeted attempt to negotiate between those two observational positions, an attempt that hopefully offers some understanding of the initial development of the Tanzanian communications infrastructure.

[57] John Iliffe, *A History of Modern Tanganyika* (Cambridge: CUP, 1979), 119. There is a second general mention of the telegraph (pg. 181) in a paragraph that invokes the generally chaotic aspect of information transfer during the Maji Maji conflict.