

Print both sides



EAST AFR. PROT.
13389

G. O.
13389
REC'D
RECEIVED APR 14

Field Feb. 130
1914
11 Apr.
at previous Paper.
12/62

Railway
Kakum - Kasim paper

Unaware how funds will be provided, but it would appear that cost of survey should be defrayed from same source as cost of construction, not from annual capex. Therefore for the present do not propose to suggest any reallocations to provide for £2000

Sir J. Anderson

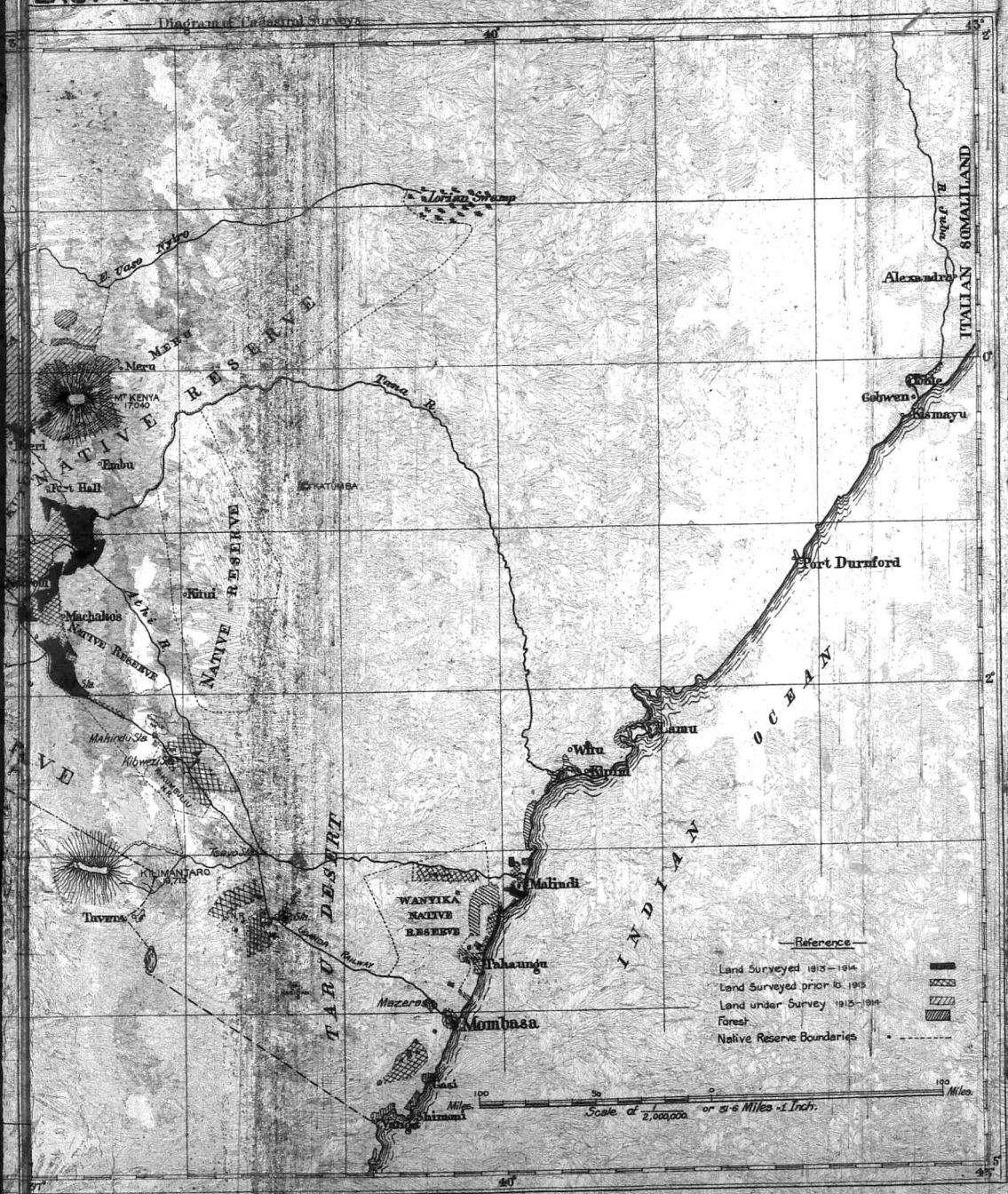
I attach copy of Sir G. Fiddes' letter to Sir H. Belfield of April 8th. It will be clear to Sir H. Belfield when he gets the letter that the line will be built on terms of 'bonuses & tender', so that it is not very material whether the cost of survey is refunded from the capital money when (or if) raised, or borne by the Protectorate itself.

There would not think to good reason for allowing the Prot. to bear the cost of survey out of balances if we have clearer as to the general financial position of the Protectorate. But the original estimates appropriated survey being of the anticipated revenue and

subsequent Paper.
1/4030

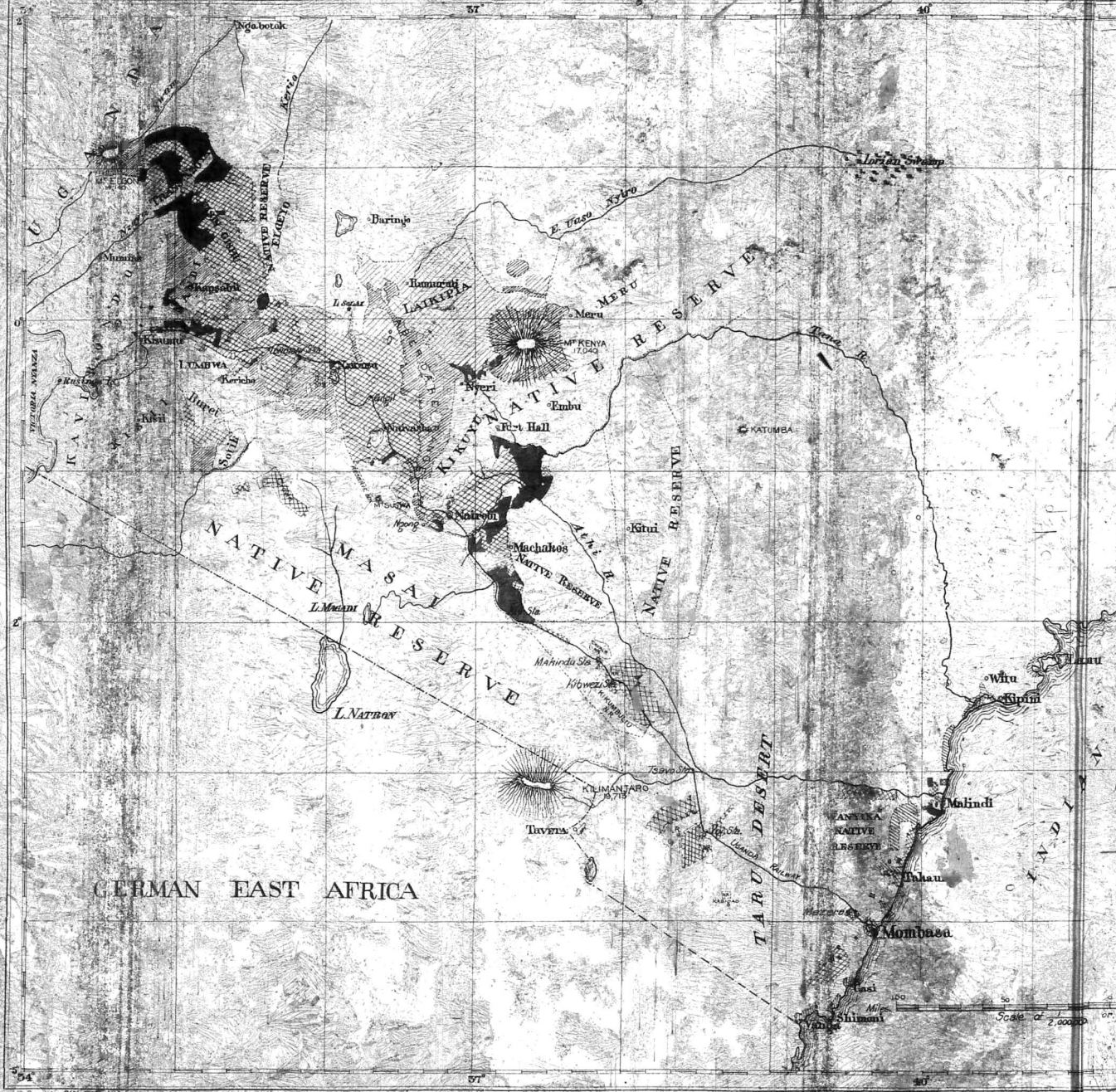
EAST AFRICA PROTECTORATE

Diagram of Coastal Surveys



EAST AFRICA PROTECTORATE

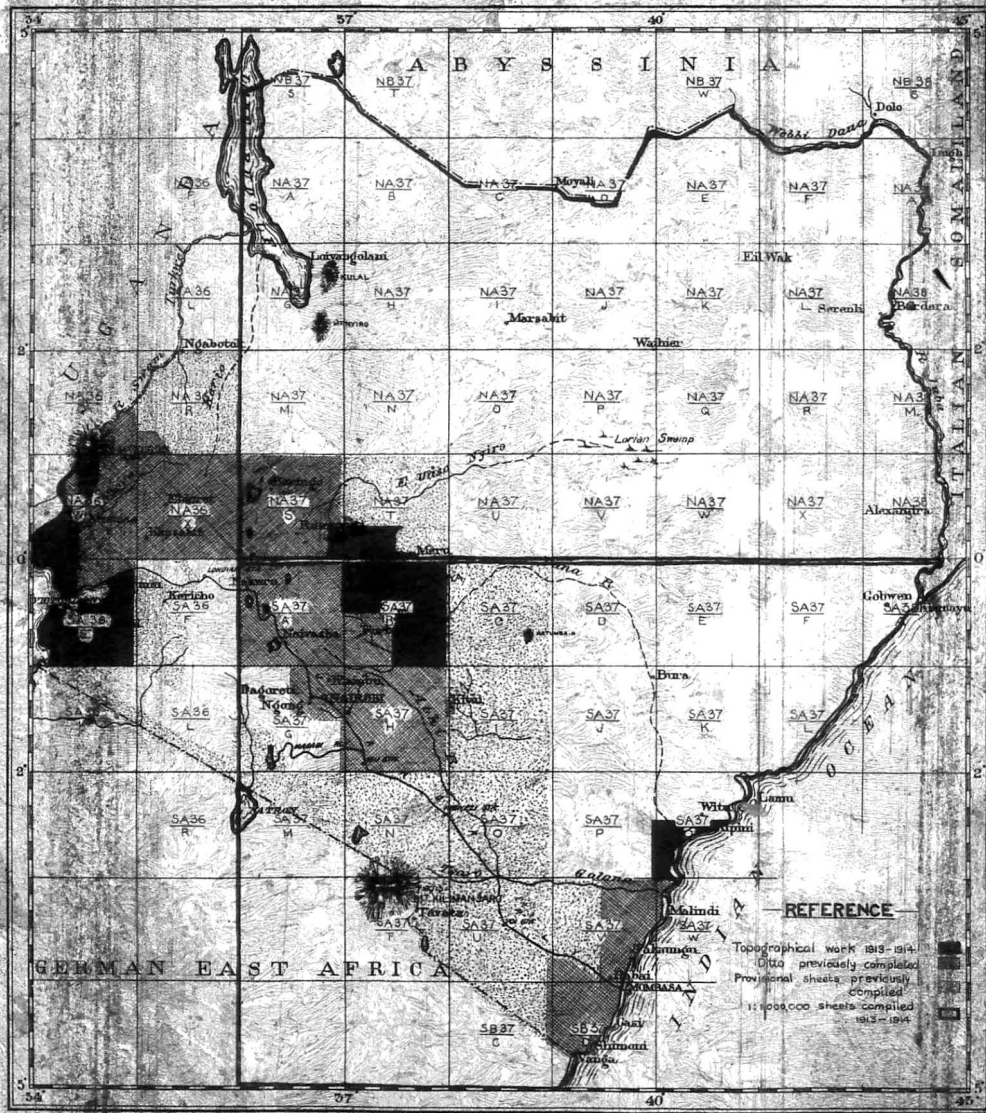
Diagram of Central Surveys



GERMAN EAST AFRICA

EAST AFRICA PROTECTORATE

Diagram of Topography

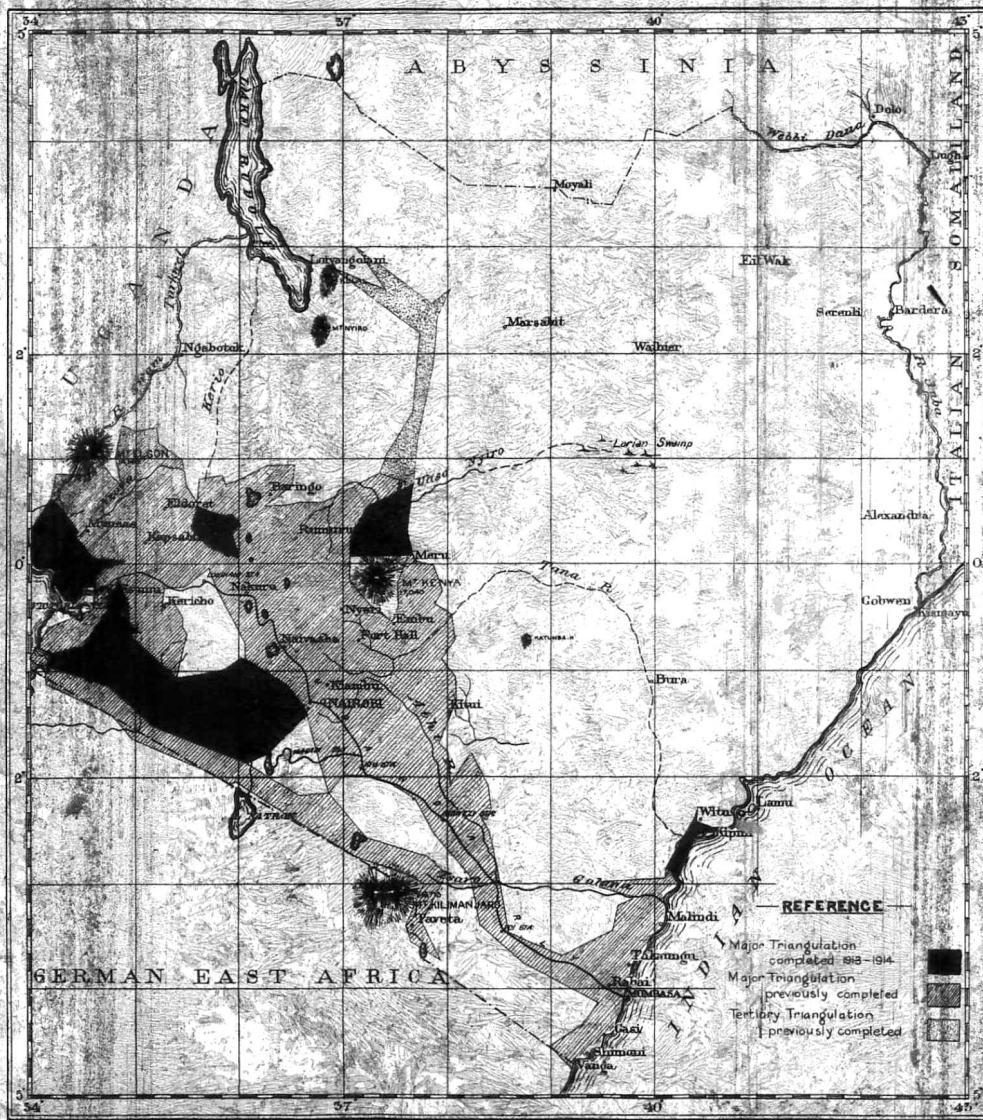


Drawn at Survey Office Nairobi, S.E.A.

Carto. League of Nations

EAST AFRICA PROTECTORATE

Diagram of Triangulation



Director of Survey Office, Nairobi, E.A.A.

Scale 54 Miles - 1 Inch

Colonial Survey Office, Nairobi



PUBLIC RECORD OFFICE.

Three

~~One~~ Document, being 1) - 3) E. Africa Protectorate:

- 1) Diagram of Triangulation.
- 2) " " Topography
- 3) " " Cadastral Surveys.

have been removed to MPG 1092

6.x.70

H. Anderson

TABLE X.

Miscellaneous maps and plans in 1914 issued during the year
ending 31st March 1914

with comparison with previous years.

	Number	Approx Value
<u>Conveyance and Occupation License Plans</u>		
1. To Conveyancer Land Office Deed Plans	1500	502
2. do do Occupation License plans	303	60
	1804	562
3. Recorder of Titles Deed plans	318	106
<u>Miscellaneous Maps and Cadastral Sheets.</u>		
1. To Government Departments	3436	376
General Public	1484	160
War Office Maps		
2. To Government Departments	205	50
General Public	151	29
Total 1914	6247	1325
1913	5850	1048
1912	4932	1058
1911	4183	816
1910	3856	659
1909	2223	526
1908	1703	548

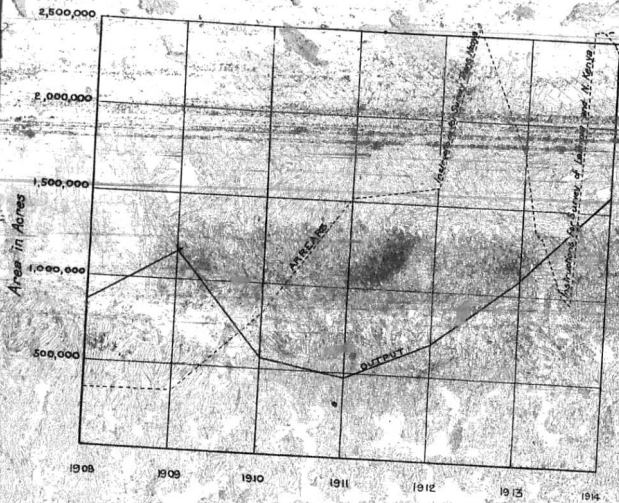
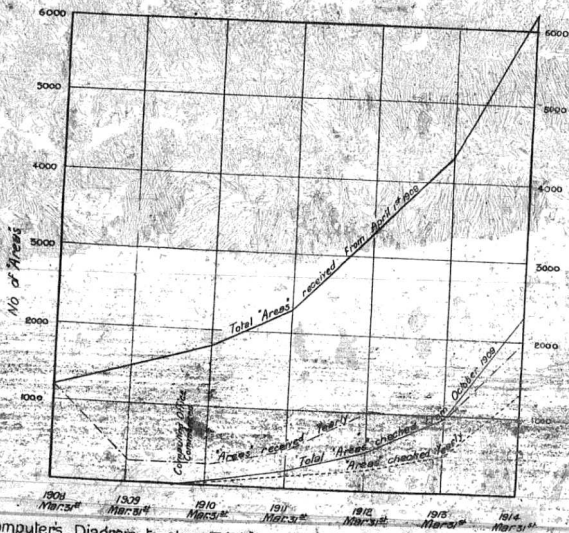


Diagram to illustrate Table IX



Computers Diagram to show Total Areas received and Total Areas checked from April 1st 1908 to Mar 31st 1914

APPENDIX
Comparative Annual Statement of Geological Surveys

ordered and completed

Year ending March 31st	Surveys completed between April 1st and March 31st		Surveys ordered but not completed on March 31st
	No. of areas	Total acreage	Acreage
1908	1,182	853,760	350,000
1909	1,294	1,161,563	350,000
1910	1,268	553,261	813,000
1911	1,482	484,266	1,519,930
1912	1,034	690,985	1,606,787
1913	975	1,082,069	1,790,606
1914	2,045	1,606,313	2,456,475

T A B L E .VIII.
 Details of Cadastral Surveys

For year ending 31st March 1914.

Description	Number	Acres
Agricultural and Grazing Farms and Mining Concessions	509	1,150,676
Reserves	33	11,789
Re-Surveys	145	96,859
Township Plots	481	423
Road Surveys	14	262
Forest Surveys	3	89,396
Township Contour Surveys	6	1,663
Check Surveys	3	5,526
Private sub-division of farms into smaller plots	144	177,071
" " Township plots, and sub-division of township plots	271	1,281
Coast Land Surveys, Malindi shambas	238	10,440
" " " Reserves	8	17,701
" " " Mombasa Island	55	554
" " " Demarcations	137	10,563
	2,045	1,608,313

Note:- These figures are exclusive of Miscellaneous surveys shown in Table VIII.(2)

T A B L E .VIII.(2)
 Miscellaneous Surveys 1913-14.

Class of Survey	Area acres	Length Stations	Remarks
Triangulation	1,240,095		
Incidental traverses		15,348ft	
Plane table surveys (4)	830		Nairobi Township
Inspection and Sundry Surveys			Ten





Crossing Tala River near mouth



General view Itirya Alloment (Middle)



Observatory at Survey Office, Nairobi

The completion of this series of farm sheets is of great importance. It will form an excellent frame work for the rapid production of maps to a reduced and more serviceable scale. Moreover, the Meridional District System and Card Index Scheme are based on these sheets.

(1). A time and labour saving device which has been adopted with success is that of utilizing extracts from lithographs, specially prepared on parchment paper, of general allotments, as deed and license plans and township deed plans.

This device has served to alleviate somewhat the sudden strain engendered by the periodical demand for large numbers of license and auction plans, due to the present system of sale of farms by auction.

(e). One draughtsman is in charge of the new Record Room, which contains some 10,000 valuable survey records. A card index system has been carefully worked out in detail; this will be in charge of the Records clerk allowed in Estimates 1914-15, and when he is obtained, the draughtsman will be set free to perform his proper duties.

(f). Throughout the year one draughtsman has been engaged on the drawing up of deed and general plans in connection with the Coast Titles.

Compass Levelling and miscellaneous coastal work has kept another draughtsman fully employed.

(g). The staff of the drawing office has been fully occupied throughout the year in the preparation of auction, deed and license plans and cadastral sheets and the preparations of general plans has in consequence been retarded.

(h). The work of preparing the new 15 minute 1/62,500 Cadastral Sheets has been progressing slowly. This series will form a complete record of all survey data. 106 sheets have been plotted in skeleton during the last two years. This leaves a further 20 sheets to be dealt with, when the whole of the settled districts will be covered.

During the year licensed surveyors have increased their number and are now employing many more assistants, so that their output is becoming out of all proportion to their actual numbers. Further, surveys of private subdivisions have to be checked for registration purposes. In consequence work of the computing staff has fallen into arrears; actually during the year 2000 areas have been received for checking and only 1450 checked.

In order to relieve this congestion it was found necessary at the end of the year to transfer two surveyors from the field to the computing office temporarily.

11. Drawing Office.

(a). During the year many changes have taken place in the personnel of the Drawing Office, but the vacancies caused by resignations and transfers were promptly filled.

(b). The establishment of draughtsman and tracers has not been changed.

(c). The output of plans, as shown in table X exceeds that of any previous year.

(d). The duties of the draughtsman in charge of the public map office do not allow him to assist in actual drawing work. Besides attending to the public, he keeps register of surveys, prepared and miscellaneous plans, issues of maps, and prepares the departmental survey returns.

prepares

(h). Field inspections of a proportion of the work systematically chosen combined with the present rigorous office checks ensure that nothing but reliable work is passed. These field inspections by senior surveyors have been more extensive this year than previously; but the proportion of work checked is still too small.

10. Computing Branch.

(a). The staff for the year has consisted of a chief computer and 6 computers, being three more than last year. Two of these were transferred from the drawing office; but owing to stress of draughtsmen's work the transfers could not be effected at once. The working capacity of the computing office for the year has in consequence been equal to 8 men instead of 7.

(b). An average of 2 plans out of every 5 have to be returned to surveyors for correction. In some cases work has had to be returned, which was unsystematic and not in accordance with the official methods in vogue.

On the whole however it is satisfactory to note that the general work submitted has shown great improvement during the year.

(d). In order to enable the field work and office checking to proceed pari passu, it is necessary to maintain a proportion of 1 computer to 3 surveyors.

Eburu allotment, Kiu farms, Kibi-ori- Muhoroni
 block, Kaimosi Coffee lands, Mwachhi Dairy
 farms, completion of Trans Azova and Basin 513 W
 allotments, resurvey in Kikuyu, Eldoret and
 Kinangop Districts, Malindi Coast surveys and
 Mombasa Island surveys.

The surveys of the backland and North
 Kenya allotments is also in hand; these last two
 allotments alone will amount to some 370 farms.

(F). The coast lands surveys are making
 steady progress. On Mombasa Island all the
 shambas have been demarcated and are being
 finally surveyed, and the work is now being
 carried into the native town.

The Malindi surveys have continued
 without interruption. Survey of Mazrui Reserves
 has been completed; very heavy bush cutting has
 been the main feature of this work.

Demarcation has been started on the
 Tana River near Kipini and on the Coast belt
 south of Mombasa. A demarcator has been estab-
 lished, the Arbitration Boards in each of these
 areas.

(G). The standard of work has been well
 maintained and is satisfactory.

way the Government surveyors are enabled to devote their attentions to the urgent non-remunerative work, especially townships and re-surveys.

(d). It has been necessary lately to subdivide a few of the farms which were surveyed before the main trigonometrical control was established. The survey of these subdivisions has brought to light the fact that no reliability can be placed on surveys executed independently of the main control and before the present system of field and office check was instituted. It is now certain that it will be necessary to re-survey a great number of farms in the Kikuyu and Limuru Districts. This work is now in hand. It is of a non-remunerative character and can only be done by Government surveyors. Further since the subdivisions of these farms are increasing in number and urgency, the staff of Government surveyors is experiencing difficulty in keeping pace with the demand.

(e). Cadastral Surveys during the year have been scattered over the whole Protectorate; the large blocks surveyed have been Ithanga and Sapuk allotments, Mukanya farms, Nyari extensions

Surveyors.

(a). The arrears on 1st April 1913 were 1,750,008 acres. These arrears were reduced in October to 985,610. In November instructions were received for the survey of farms on Laikipia and North Kenya. This increased the arrears to 2,550,448 acres. At the close of the year the arrears had been reduced to 2,456,470 acres.

From this it will be seen that the Survey Staff are capable of dealing with the normal amount of new work ordered and are able to overtake arrears slowly. It is not expected that other large areas will be opened for settlement in the future as most of the land available for white occupation is now being dealt with. Under these conditions it will take the survey staff some years to reduce the arrears again to manageable proportions.

(b). The development of the country (during the year) has increased the demand for township and subdivisional surveys; a great deal of the surveyor's time is being taken up with this work which is slow and laborious.

(c). The actual number of farms surveyed which have not yet been taken up amounted on 31st March 1914 to 505, thus satisfying the demand for some considerable time. Licensed Surveyors have been extensively employed to survey large blocks of farms; and in this

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The slight rise is accounted for by the fact that a more extensive and rigorous field check is being insisted on. This field inspection combined with the computing office check now prevents the possibility of any doubtful work being passed.

7. The survey accommodation has proved totally inadequate for the increased staff. Several temporary grass huts have been erected to accommodate the overflow, and at times surveyors, computers and draughtsmen have been obliged to work in tents. The additional accommodation provided for in estimates 1914-15 is being anxiously awaited; and, it is hoped, will relieve the congestion temporarily. But the computing and drawing staff cannot carry on their work to the best advantage until provided with suitable offices.

8. Clerical Staff. The duties of the clerical staff have been badly distributed; and this has resulted in delays with correspondence, errors in accounts and inefficient store-keeping.

The staff should be sufficient to perform the work required of it. It is hoped be a re-arrangement of duties to obviate these mistakes in future.

9. Surveyors.

Mr. Morris Draughtsman Invalided home.
 Mahomed bin Indian Surveyor dismissed.
 Bhai Singh Indian Surveyor resigned.
 Mohamed Abbas Tracer resigned.

At the end of the year the cadastral staff was up to strength with exception of 2 Assistant Junior Staff Surveyors. Certain time was necessarily lost in effecting the above mentioned changes.

3. The health of the staff has on the whole been good; though as usual the surveyors while employed on the coast have suffered from a good deal of fever.

4. Seven qualified surveyors have taken out licenses during the year to survey in East Africa.

5. There has been an excess on the cadastral vote of £768. This over expenditure is principally on the Local Transport and Labour vote. A great deal of travelling to execute isolated surveys had to be done. This proved costly but was unavoidable. It was also found necessary to employ an increased number of labourers on bush cutting for coast surveys.

6. The cost per acre of cadastral surveys is 6.00 pence as compared with 4.01 pence last year and 5.66 the year before.

CADASTRAL BRANCH

1. The extent of cadastral surveys has exceeded that of any previous year. Licensed Surveyors have been employed to a great extent on the survey of large blocks of land for alienation.

2. The following promotions have taken place:-

Mr. J.O. Gilbert to District Surveyor
Messrs A.C. Fraser, F.S.D. Melony and
E.K. Boilsaw to Senior Staff Surveyors.
Messrs S.H. Ramsey and C.E. Taylor to
Junior Staff Surveyors.

The following appointments have been made:-

Mr. E.W. Nelson Junior Staff Surveyor
Messrs W.M. Hayes } Assistant Junior
and F. Alous } Staff Surveyors
Messrs F.J. Gosden, T.B.L. Nestor and
L.C. Wright computers.

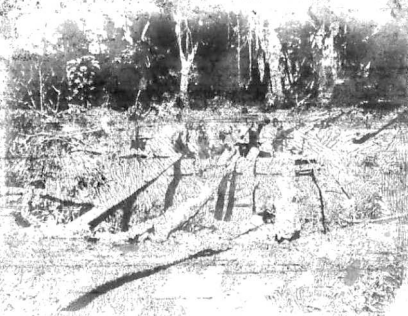
Messrs A.C. Stevens, C.V. Hall, H.V. Theakstone
and H.C. Walsh draughtsmen.
Kabir Shah and Mahomed Din Indian Surveyors
Ami Chand Tracer.

The following have left the department:-

Mr. H. Anderson Junior Staff Surveyor

RESIGNED.

Mr. E. J. Bent Assistant Junior Staff Surveyor
transferred to Administration.





Bridge Building - Laikipia



Culling Line, Soroti, Uasin Gishu



Turvey Safari embarking in Canoes, Lake Victoria

T A B L E. VII. continued.

Note:-

The following sheets are also being printed:-

1/250,000 South E.37 Mombasa Provisional
D

South A.37 Machakos Road-Malindi Provisional
V and W

North A.36 Seker Provisional
R

South A.37 Machako's
H

North A.36 Mumia's
B

and 1/1,000,000 North A.37 and South A.37.

List of Published Topographical Maps.

Date	Scale	Description
1897	1/120,000	Map of Uganda
1898	1/250,000	Reconnaisance duova Katik
1899	1/62,500	Five maps Uasin Gishu
	1/62,500	Nairobi Sheet
	1/125,000	Sheet <u>South A.37</u> Nairobi
1911	1/62,500	Malindi Sheet
	1/125,000	<u>South A.37</u> Langaa V.2.
	1/125,000	<u>South A.37</u> Takaungu V.4.
1912	1/125,000	<u>South A.37</u> Niandarawa A.4.
	1/250,000	Provisional <u>South A.37</u> Voi U
1913	1/125,000	<u>South A.37</u> Nakuru A.1.
	1/125,000	<u>South A.37</u> Fort Hall B.3.
	1/125,000	<u>South A.37</u> Nyeri A.3.
	1/250,000	Provisional <u>North A.37</u> Meru P
	1/250,000	Provisional <u>South A.37</u> Kenya E
	1/250,000	Provisional <u>South A.37</u> Mandala O
	1/250,000	Provisional <u>South A.37</u> Machakos G
	1/250,000	Provisional <u>South A.37</u> Kitui I
	1/250,000	Provisional <u>South A.37</u> Makindu H
	1/250,000	Provisional <u>South A.37</u> Yatta Plateau Q
1914	1/250,000	<u>South A.37</u> Nakuru and Naivasha A
	1/250,000	<u>North A.37</u> Baringo
	1/250,000	<u>North A.37</u> Elgon
	1/250,000	<u>North A.37</u> Uasin Gishu

TABLE VI.
Comparative Annual Statement of Topography

Year ending 31st March	Scale	Scale	Scale	Remarks
	1/125000	1/125000	1/125000	
	sq. miles	sq. miles	sq. miles	
1907	...	...	2393	Lumbwa, good reconnaissance only
1908	447	...	...	Basin Gishu, good reconnaissance only
1909	631	...	...	do do do do
1909	743	...	...	Nairobi
1910	450	...	...	Malindi
1910	...	6342	...	Kinangop, Mangan and Takungu
1911	658	...	...	N. of Nyeri. Published on 1/125000 scale
1911	...	2567	...	Nakuru, S. of Nyeri and Fort Hall
1911	...	...	2575	Rumuruti and Naivasha; and 4900 sq. miles reconnaissance N. of Kenya
1912	...	2060	...	Coast, Trans Azoos and 500 sq. miles reconnaissance in Maragwet
1912	...	...	3340	Coast S. of Mombasa, Elgon and Basin Gishu.
1912	...	1188	...	Ol Doinyo Sapuk
1913	...	...	10500	Maobako's, Maringo, (north sheet), Basin Gishu (2 sheet), Mumi's (3 sheet) and 1000 sq. miles reconnaissance N. of Kibwezi
1913	...	890	...	North Kenya
1914	...	750	...	Coast, Azoos and River
1914	...	...	5000	Nairobi, Kisumu and Kenya

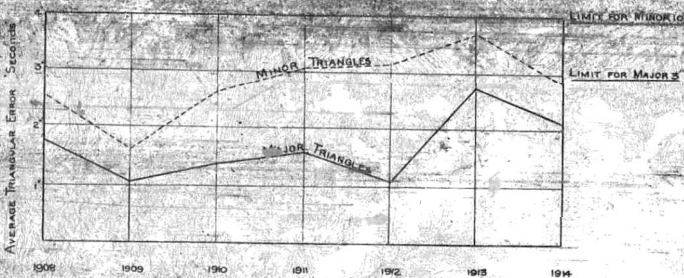


Diagram to illustrate Table V.

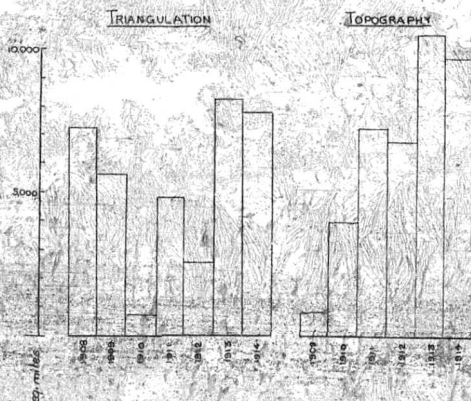


Diagram to illustrate Table V. Table VI.

Comparative Annual Statement of Transmission

Year	Major Triangles			Minor Triangles		
	Average triangular error, seconds	Area in square miles	No.	Average triangular error, seconds	Area in square miles	No.
08	1.77	7520	103	3.51	510	10
09	1.11	5834	8	1.84	600	10
10	1.45	738	30	2.68	1117	10
11	1.59	4231	75	3.03	437	10
12	1.06	2325	53	3.1	761	10
13	2.72	2301	36	3.72	1347	10
14	2.16	7523	38	3.79	2360	10

6. Drawing and Compilation for Printing.

(a). The following sheets have been sent to the War Office for printing during the year:-

1/50,000 - S.A. 37 Machako's (Final sheet)

1/50,000 - S.A. 36 Mumi's (Final sheet)

1/1,000,000 North A. 37 (Provisional)

1/1,000,000 South A. 37 (Provisional)

(b). Also the 1/125,000 maps of the North Kenya District and Coast Strip Tana River have been reproduced locally.

(c). The 1/1,000,000 Africa International Series sheet North A. 37 was compiled in East Africa from maps, sketches and traveller notes by the topographical survey section, King's African Rifles officers, administrative officers and traveller. This information was fitted to a frame work composed of the main Protectorate triangulation, Mr. Archer's Northern Frontier triangulation, Major Wynn's Abyssinian boundary work and Captain Williams's traverse of Juba River.

The 1/1,000,000 Africa International Series sheet South A. 37 was partly compiled at the War Office from topographical work recently sent home, and was completed in East Africa with the latest geographical information obtainable.

Sheet Kisumu - Kisii
 three quarters of sheet Kenya

(b). A map of the North Kenya District was required in a hurry in order to lay out a scheme of farms for which there is a pressing demand.

The country was well suited for plane tabling and the work was done well and quickly.

The western portion of the Rumia's sheet and part of the Kisumu-Kisii sheet covered the low-lying country on the shores of Lake Victoria, and was hot and unhealthy, but on the whole easy to plane-table.

In the Kenya sheet the topographers were much delayed by fog on the slopes of the mountain; the country is also very broken and intricate. The impertinent curiosity of wild beasts further disturbed the work; the efforts of a rhinoceros and a buffalo being directed towards the destruction of a plane table, clinometer and lamp.

(c). The results of the topographical work are most satisfactory. The maps are thoroughly good and reliable, and a rapid rate of progress has been maintained. The average rate of work on scale 1/100,000 has been 6.5 square miles per day, and on scale 1/250,000 it has been 5.5 square miles per day.

distance of 500 miles, and in order not to alter the coordinates of points of the old work, on which a great deal of cadastral survey now depends, it was decided to throw the whole error into the new work, i. e. into a distance of 500 miles. In order to adjust this error it was necessary to make a correction in azimuth to the new series of $- 12.70''$ and a correction in scale of $+\frac{1}{120,000}$.

Notwithstanding great scarcity of water and difficulties in obtaining supplies, the work was very rapidly and thoroughly done.

(3). The average triangular error for major work this year is 3.16 seconds. This is a distinct improvement on last year. The errors in the Lake and Coast triangulations are larger, compared with those in the Highlands, but are still within desirable limits.

3. Topographical work.

(a). The plane tables were employed in the topographical survey of 500 square miles of farm land on scale $1/125,000$ in the North Kenya District. A provisional map on the same scale was made of the Coast strip from Malindi to Kisumu and also the following sheets have been surveyed on scale $1/250,000$:-

Eastern half sheet

sheet

River.

The base line of 15,272 feet, run along a flat straight road in the East Africa Syndicate plantation on the Tana River, 3 measurements were made with invar tape, and gave a probable error of $\pm 106,000$.

The base extensions were good, and triangulation was carried over the adjacent country. This triangulation was connected to the main trigonometrical control north of Malindi with great difficulty. The country, low undulating and bush covered, was very unsuitable for triangulation. And an exceptionally high flood of the Tana River this year rendered marching an amphibious performance. These difficulties were enhanced by exceedingly thick weather and a strong monsoon. However the observations were made successfully on heliograph when the bad weather conditions rendered the ordinary non-luminous beacons invisible.

Captain Cook and Lieutenant Maxwell carried out the reconnoissance, beaconing and closing of the triangulation from Kisumu to the Rift Valley. This work was connected to the Anglo-German boundary triangulation at 5 points. It connects also the original work between Kisumu and the Rift Valley in a new (southerly) direction. The errors found at the points of junction in the Rift Valley amount to 35 feet in latitude and 43 feet in longitude. This error is over a total

distance

Triangulation work was carried out in the North Kenya District during the year over the following areas:-

(i) Eastern half of the North Kavirondo District.

(ii) Small area to complete Basin Gishu triangulation.

(iii) North Kenya District.

(iv) Coast Belt from Malindi to Tana River.

(v) Country lying between the Uganda Railway and Anglo-German boundary from Lake Victoria to the Rift Valley.

(b). The total area covered by major triangulation during the year amounted to 27,300 square miles.

This output was slightly less than that of the previous year.

The western half of the North Kavirondo District was completed by Lieutenant Maxwell. Conditions for observing were bad, owing to the smogs and haze near the lakes.

The country was extremely unhealthy.

The trigonometrical work in the North Kenya District was carried out by Captain Williams. The country is more triangulated and a better condition than almost anywhere else.

Captain Leathorne, assisted by First and Second Lieutenants Turner, did the reconnaissance and beaconing of the coast work from Malindi to Tana River. Captain Williams followed to assist in the observing and measurement of a base on the

SUPERINTENDING STAFF.

The Director of Survey was in the field for 27 months during the year. Of these 9 months was spent in major triangulation in the North Kenya District, 12 months in major triangulation on the Coast Belt near the Tana River and 1 month on triangulation in connection with Mombasa Island surveys. The remaining 10 months were spent inspecting cadastral surveys on the coast and in Baikipia.

TRIGONOMETRICAL AND TOPOGRAPHICAL SEARCH.

1. The Deputy Director (Captain Scott, R.N.) did not complete the work of the Amari boundary until 30th June; and Captain Kempthorne was on leave from 2nd November.

This amounted to the loss of the services of one officer for 6 months.

2. And Corporal Thornton, R.N., was on leave for 6 months from March 1916 on termination of his tour of service.

Lance Corporal Bird, R.N., joined in November to complete the establishment.

3. And Corporal Turner was on leave for 11 months from March 1916 to September 1917.

4. Officer in Charge of the Survey was on leave for 11 months from March 1916 to September 1917.

TABLE IV.

Comparative Annual Statement of Cost of Survey.

Year ending from 1st	triangulation Shillings per sq. mile	Topography Shillings per sq. mile	Cadastral Survey pence per acre
1908	14.3	...	3.71
1909	11.0	...	3.73
1910	14.6	18.2	5.81
1911	6.6	6.5	3.31
1912	19.4	11.0	5.96
1913	6.6	8.0	4.51
1914	7.2	10.4	6.06

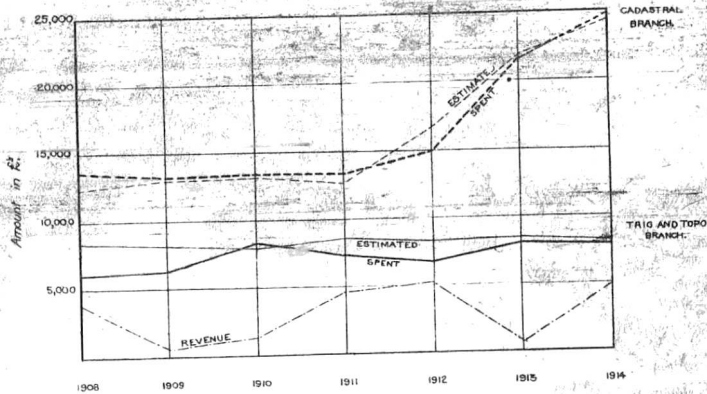


Diagram to illustrate Table III.

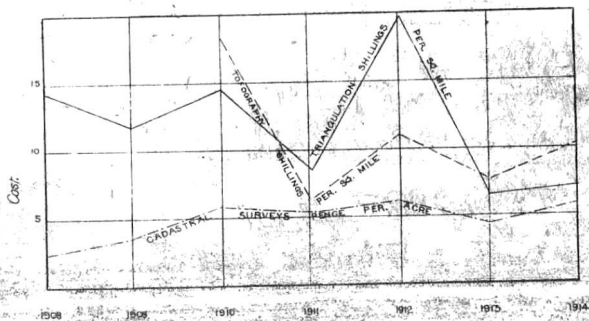


Diagram to illustrate Table IV.

APPENDIX III.
Expenditure and Revenue

Year ending March 31st	Rice and Poppo Branch		Cadastral Branch		Revenue
	Estimated Expenditure	Actual Expenditure	Estimated Expenditure	Actual Expenditure	
1908	8,506	8,087	15,847	15,885	7,908
1909	8,416	8,427	15,048	15,177	860
1910	8,003	8,571	15,064	15,181	1,496
1911	7,797	7,446	15,735	15,460	4,757
1912	8,000	8,750	16,260	15,865	5,250
1913	8,925	8,075	16,065	15,667	1,102
1914	8,581	7,888	15,105	14,873	1,932

* Detail of Revenue 1914.

Survey fees	4,754
Sale of Maps	164
Sale of War Office Maps	15
	<u>5,933</u>

COST OF SURVEY DEPARTMENT
for year ending March 31st, 1914.

	Estimates	Expenditure
PERSONAL EMOUMENTS		
Superintending Staff	1190	1190
Trigonometrical and topographical Branch	3403	3311
Cadastral Branch		
Deputy Director's Office	1855	1885
Surveyors	8168	7775
Draughtsmen	1968	1753
Computers	2327	2459
	14416 (1)	11875 (1)
Total Personal Emoluments	15017	15076
OTHER CHARGES		
Trig and Topo Branch	3690	3694
Cadastral Branch	568	11186 (2)
	13578	15082
Grand Total	33596	33138
Comparative Annual Accounts		
for year ending 31st March		
1913	50,800	49,785
do do 1912 (6)	54,806	51,827
do do 1911	52,850	50,756
do do 1910	51,751	51,752
do do 1909 (3)	51,753	49,604
do do 1908	47,855	48,872

(1). Includes 24453 Coast Land Settlement

(2). " " 760 " "

(3). " " 25212 " "

(4). " " 777 " "

(5). Topographical section of one officer and 4 non-commissioned officers added to Department.

(6). Special surveys for title registration started.

TABLE I. (B). contd.

Name	Date
J. C. Smut	December 31st, 1912
H. A. Leonard	March 27th, 1913
G. P. Zignelli	March 27th, 1913
W. St. C. Brockway	April 26th, 1913
J. Gannell	April 26th, 1913
H. S. Backman	April 28th, 1913
F. H. Sainsbury	August 1st, 1913
J. Spence	August 19th, 1913
P. C. E. Flint	September 5th, 1913
F. K. Gebber	October 6th, 1913

List of qualified surveyors who have obtained
 license to survey in the East Africa Protectorate

Name	Date of license
P. van Braam	March 28th, 1902
J. H. Gailay	-
A. G. Roberts	-
J. A. Coryell	May 12th, 1902
A. S. Prev	April 24th, 1906
A. A. Ortlipp	April 30th, 1906
H. A. O'Leary	July 24th, 1906
T. D. Jordan	August 31st, 1907
A. S. Abber	October 4th, 1907
F. W. Lind	June 3rd, 1910
H. J. Quintinale	May 1st, 1911
J. S. Murray	November 10th, 1911
J. C. Coverdale	December 13th, 1911
A. S. Shaw	March 27th, 1912
A. W. Richter	April 23rd, 1912
A. S. Kelbo	August 14th, 1912
A. F. Duncan	September 17th, 1912
A. S. Gailay	December 1st, 1912

TABLE I. (Contd.) Districts - Administrative Branch

Office	Name	Salary	Allowance	Date of 1st appointment	Date of present rank	Remarks
COAST LAND SETTLEMENT SURVEYORS						
Junior Staff Surveyor	W. J. Bates	{ 250 by 15 }	{ H.A. 40 } { H.A. Rs. 4 }	15.10.11	15.10.11	
do	W. J. Thornhill	{ 280 }	{ p.d. }	12.10.11	12.10.11	
do	W. J. Piers	do	do	14.6.10	16.7.12	
do	W. J. Halliday	do	do	13.8.12	12.8.12	
do	W. J. Wilson	do	do	28.8.12	28.8.12	
do	W. J. Wilson	do	do	9.4.13	9.4.13	
Asst. Junior Staff Surveyor	W. J. Tappin	120	{ H.A. 40 }	14.9.11	14.9.11	
do	W. J. Tappin	do	{ H.A. Rs. 4 }	10.11.13	10.11.13	
COMPUTERS						
Computer	W. J. Swan	{ 250 by 20 }	H.A. 40	20.12.11	20.12.11	
do	W. J. Swainston	{ 350 }	do	24.10.12	7.4.13	
DRAUGHTSMEN						
Draughtsman	W. J. Swainston	{ 100 by 15 }	H.A. 40	15.8.13	15.8.13	
	W. J. Swainston	{ every 5 year }	do	10.9.13	10.9.13	

Notes: Salaries from 1st April 1911 will be as follows:-
 District Surveyors 2400 or 240 to 2450 Travelling allowance Rs. 4/ per diem
 House Allowance 250 p.a.
 Senior Staff Surveyors 250 by 15 to 2400 do do
 Junior Staff Surveyors 250 by 10 to 2350 do do
 Asst. Junior Staff Surveyors 150/- Travelling allowance Rs. 2/10 per diem
 House Allowance 40 p.a.

Office	Name	Salary	Allowances	Date of last appointment	Date of present rank	Remarks
<u>COMPUTERS</u>						
Chief Computer	A. Williams	{ 500 by 3 } to 150	1. A. 3.00	12. 3. 55	1. 3. 10	
Computer	A. Williams	{ 150 by 3 } to 450	do	1. 11. 11	1. 11. 11	
	A. Williams	{ 150 by 3 } to 450	do	1. 1. 12	1. 1. 12	
	A. Williams	{ 150 by 3 } to 450	do	1. 1. 13	1. 1. 13	
	A. Williams	{ 150 by 3 } to 450	do	1. 1. 14	1. 1. 14	
<u>STENOGRAPHERS</u>						
Chief	A. Williams	{ 200 by 10 } to 200	do	12. 3. 00	12. 3. 00	
Steno. Clerk	A. Williams	{ 100 by 1 } to 100	do	1. 1. 10	1. 1. 10	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 11	1. 1. 11	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 12	1. 1. 12	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 13	1. 1. 13	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 14	1. 1. 14	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 15	1. 1. 15	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 16	1. 1. 16	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 17	1. 1. 17	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 18	1. 1. 18	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 19	1. 1. 19	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 20	1. 1. 20	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 21	1. 1. 21	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 22	1. 1. 22	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 23	1. 1. 23	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 24	1. 1. 24	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 25	1. 1. 25	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 26	1. 1. 26	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 27	1. 1. 27	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 28	1. 1. 28	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 29	1. 1. 29	
do	A. Williams	{ 100 by 1 } to 100	do	1. 1. 30	1. 1. 30	

* Period of appointment

Office	Name	Salary	allowances	Date of 1st appointment	Date of present rank	Remarks
Senior Staff Surveyor	A. Fraser	{ 300 by 20 } to 340	{ A.A. 100 } { C.A. 100 }	21. 7.11	1. 2.12	
do	A. Bentley	do	do	23. 1.12	1. 3. 12	
do	F. W. Gailbau	do	do	1. 2.07	13. 4.13	
Junior Staff Surveyor	A. Arango	{ 250 by 10 } to 280	do	1. 4.07	1. 4.07	
	A. Gilar	do	do	17.12.06	14. 9.08	
	A. Donald	do	do	14. 9.11	14. 9.11	
	A. Gyle	do	do	2. 8.12	2. 8.12	
	A. Gies	do	do	7.13.11	3.12.12	
	A. Gies	do	do	13. 8.12	1. 2.13	
	A. Gies	do	do	1. 8.10	16. 1.14	
Asst Junior Staff Surveyor	A. S. Morris	120	{ A.A. 20 } { C.A. 10 }	14. 8.11	14. 9.11	
	I. Davidson	do	do	1. 2.11	1.1.11	
	A. Low	do	do	1. 3.07	7.10.12	
	A. Gies	do	do	13.10.11	1.10.11	
Indian Surveyor	M. ul. B. G. Khan	60 to 120	H.A. 20	27. 8.07	27. 8.07	
	M. ul. B. G. Khan	do	do	28.11.13	28.11.13	
	M. ul. B. G. Khan	do	do	10.10.13	16.10.13	
Native Asst Surveyor	M. ul. B. G. Khan	50		1. 5.11	1. 5.11	

Office	Name	Salary	Allowances	Date of 1st appointment	Date of present Rank	Remarks
CADASTRAL BRANCH						
Deputy Director	A. E. Townsend	500	Duty 200 P.A.Rs. 4 p.d.	12. 7. 05	28. 12. 08	3 1/4 quarters
Asst. Director	C. H. Galorain	405	H.A. 200 P.A.Rs. 4	18. 7. 06	28. 12. 08	
Chief Clerk and Acct.	J. Chalk	150 by 10 to 300	Duty 125 H.A. 240	11. 10. 08	7. 7. 11	
Clerk and Acct.	F. West	120 by 10 to 180	H.A. 140	4. 7. 08	4. 7. 08	
Clerk	A. J. Shoaschi	150 by 10 to 200	do	9. 11. 11	9. 11. 11	
do	A. H. Palmer	do	do	31. 7. 12	31. 7. 12	
3rd grade Clerk	A. J. Desjardis	100 to 130	Nil	1. 12. 06	1. 4. 12	
SURVEYORS						
District Surveyors	A. G. G. G. G.	350 by 20 to 400	H.A. 250 P.A.Rs. 4	12. 9. 06	1. 7. 10	
do	A. J. J. J.	do	do	26. 8. 07	12. 4. 12	
do	C. G. G. G.	do	do	16. 9. 13	12. 9. 13	

* Pensionable appointment

List of officers of the Department. March 31st, 1914.

Office	Name	Salary	Allowances	Date of 1st appointment	Date of present rank	Remarks
SUPERINTENDING STAFF						
Director	Captain S. Williams	800	Nil	5. 11.08	17.7.13.	reg quarters
Office Manager	A. Kane	170	Nil	4. 1.06	1.1.08	do do
Clark	133 J. Kane	93	Nil	1. 1.08	1.1.08	pensionable
TRIC AND TOPographers						
Deputy Director	Captain G. J. O'Connell	607	Nil	22. 3.05	17.7.13	reg quarters
Asst Director	Major G. J. O'Connell	525	Nil	8.12.11	8.12.11	do do
Do do	Lieut. P. Maxwell	323	Nil	8. 6.12	8. 8.13	do do
Surveyors	1st Lt. J. L. Boston	500	H.A. 25	22. 2.11	18.12.11	
"	2nd Lt. J. L. Boston	300	H.A. 25	15. 8.12	15. 8.12	
"	3rd Lt. J. L. Boston	210	H.A. 25	13. 7.08	13. 7.08	
"	4th Lt. J. L. Boston	110	H.A. 25	17. 1.12	17. 1.12	
"	5th Lt. J. L. Boston	815	H.A. 25	24. 1.13	24. 1.13	
"	6th Lt. J. L. Boston	315	H.A. 25	13.10.13	13.10.13	

* Pensionable appointment.

Note. H.A. = house allowance.

T.A. = travelling allowance.

checking of all private subdivisions and surveys
for registration purposes. This branch also prepares
and prints special plans required for official use
and also for sale to the public.

General

The organization of the Bureau is as follows:

Director, and Chief Clerk.

(A). The Agricultural and Commercial Branch:

Director, with two Assistant Directors and Chief Clerk.

This branch, with the exception of one Assistant Director, who is on the permanent staff, is composed of officers and non-commissioned officers of the Royal Engineers. It is responsible for the administration of the Agricultural and Commercial Branch for the production of the Agricultural and Commercial Branch.

(B). The General Branch:

Director, Chief Clerk, and two Assistant Directors.

Two draughtsmen, two clerks, two surveyors, two surveyors, and a draftsman, are also attached to this branch. The surveyors are held liable to service in the Royal Engineers, and are also held liable to service in the country at present.

The duties of the General Branch are the management of all affairs, loanships, Government, and the preparation and working of the Agricultural and Commercial Branch.

NAVY DEPARTMENT

OFFICE OF THE SURVEYOR GENERAL

ANNUAL REPORT

BY

Captain C. C. Williams, U.S.N.,

Director of Surveys

for the year ending March 31st, 1916.

GOVERNMENT HOUSE,
NAIROBI,
BRITISH EAST AFRICA.

EAST AFRICA PROTECTORATE.

No. 339.

April 9th, 1914.

15993
9 MAY 14

Sir,

I have the honour to transmit herewith
the Annual Report of the Survey Department for
the year ending March 31st, 1914.

Report

2. I am addressing a separate communication
to you respecting the arrears and the proposals
put forward for dealing with them.

I have the honour to be,

Sir,

Your humble, obedient servant,

A. Lawson Beyers

GOVERNOR.

THE RIGHT HONOURABLE
LEWIS HARCOURT, P.C., M.P.,
SECRETARY OF STATE FOR THE COLONIES,
DOWNING STREET,
LONDON, S.W.