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SURVEY OF KENYA ANNUAL REPORT 1967

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REPORT OF THE

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SURVEY OF KENYA ANNUAL REPORT 1967

1. REVIEW OF THE YEAR

The main activities of the department continued unchanged: that is, the making of accurate surveys of land boundaries and production of large-scale plans for registration of land titles; the production and revision of topographical maps in a full range of scales, for use in administration, defence, tourism, education, development planning, etc., and activities connected with the above, for example, aerial photography, technician training, etc.

The retirement of expatriates from the permanent staff continued and several new appointments and promotions of Kenya citizens were made. The shortage of qualified surveyors and certain other technical staff continues to be partly met by appointments (on 2½-year contracts) from countries other than Britain.

Internal and external training continued, including 15 students (of whom one graduated) reading for the B.Sc. (Eng.) (Survey) degree at University College, Nairobi, five reading for R.I.C.S. examinations at Waltham Forest Technical College (England), three for B.Sc. (Land Survey) at University of New Brunswick (Canada), and two training at Twickenham Technical College (England) in photolithography. One photogrammetrist returned from I.T.C. Delft and one photo-lithographer from a photography course at Ottawa. The courses in basic survey were transferred from this department to the Kenya Polytechnic.

The establishment of the department was increased by 72 posts to 847 to speed up land adjudication surveys. The expenditure estimates for 1967-68 reflected this increase, with a revised total of £K441,700.

The East African Land Survey Certificate Regulations were published and arrangements were put in hand to hold the first examinations in March 1968.

A rise of over 20 per cent in cadastral surveys was mainly due to increased development in towns.

Work continued on the production of large-scale base maps for planning settlement schemes. More new "towns" in the schemes were laid-out and surveyed. Progress of mapping for agricultural titles in the schemes was slow.

During the year, the implementation of the recommendations of the Lawrance Mission on Land Adjudication and Registration commenced. Some survey and cartographic staff were transferred from the Adjudication Department and the supervision of the work of all Land Adjudication Surveyors became a responsibility of Survey of Kenya.

Under S.C.A.A.P. (the Special Commonwealth Aid to Africa Programme), the Directorate of Overseas Surveys maintained field parties in Kenya totalling six surveyors. They continued their work first started in 1948, that is the fixing of control points required for topographical mapping at 1:50,000 and other scales.

Survey of Kenya continued to produce revised editions of topographical maps at various scales. A special map of the Masai Mara Game Reserve was published. Work continued on the new improved edition of the *National Atlas*.

The change-over to metric system in East Africa is due to begin in 1968. This department expects that all maps and plans published or approved after 1968 will carry both metric and English units for a "familiarization" period of several years. The necessary amendments to survey legislation and technical instructions have been drafted during 1967.

The department was represented at the Commonwealth Military Mapping Conference in London, the Commonwealth Survey Officers Conference in Cambridge, and the U.N. Conference on Standardization of Geographical Names at Geneva.

Once again I take this opportunity of acknowledging the continued loyal service of all grades of staff.

P. P. ANYUMBA,
Director of Surveys.

2. ADMINISTRATION

General

The department remained in the portfolio of the Minister for Lands and Settlement during 1967.

Four provincial survey offices were maintained in Mombasa, Nyeri, Nakuru, and Kisumu, and ten district survey offices in other towns.

Meetings and Conferences: a staff meeting was held on 16 and 17 June at Field Headquarters, attended by all heads of branches and sections, and for the first time by district surveyors. The agenda covered staff, finance, equipment, transport, training and technical methods.

The Director attended the tenth meeting of the heads of E. African survey departments held in Kampala 11 to 13 February. The agenda included mapping, levelling, international boundaries, air photography, training, staffing, electronic computing, and the U.N./W.M.O. hydrometeorological survey of the Lake Victoria basin.

The Director attended the Military Survey and Mapping Conference in London 8 to 11 August and the Commonwealth Survey Officers' Conference at Cambridge, etc., 14 to 25 August.

An Assistant Director attended the U.N. conference on the Standardization of Geographical Names held in Geneva 4 to 22 September.

The Director attended the second meeting of the East African Land Survey Examinations Board held in Kampala on 12 February and the third meeting in Nairobi on 11 October.

The many visitors to the department during the year included:—

Sir Edward Peck, British High Commissioner in Kenya.

Col. M. C. Sutherland Brown, External Aid Office, Canada.

Lt.-Col. D. Wilson, A. D. Survey, Near East Command.

Prof. P. Wilson, University of New Brunswick.

Prof. E. H. Thompson, University of London.

Dr. W. Mai, German Volunteer Service.

Mr. F. E. Shafer, Geographical Attache, U.S. Dept. of State.

Mr. R. A. Minchell, Commissioner for Surveys, Malawi.

Mr. Angaw Duguma, Imperial Ethiopian Mapping Institute.

Mr. D. E. Warren, Deputy Director of Overseas surveys.

Mr. L. P. Kirwan, Director, Royal Geographical Society, London.

Mr. C. D. Williams, Survey Department of Sierra Leone.

Establishment

In pursuance of Government policy to accelerate land adjudication and registration the total establishment of the department was increased on 1 July by 72 posts (mainly survey assistants, drivers, clerks, and field labour staff). Four new posts of senior survey assistant and one of senior photo-lithographer were created by up-grading existing posts. A post was also provided for an air photographic officer.

The Kenyanization of the department continued. Out of ten more non-citizens (including six on overseas terms of service) who retired, eight were on the permanent establishment.

Under technical aid agreements with various countries, three surveyors arrived from India, two surveyors and a photogrammetrist from Norway, and three photogrammetrists from Yugoslavia. Two surveyors returned to Norway on completion of their two-year assignments, and one volunteer (records officer) to Denmark.

The first African graduate from the B.Sc. (Eng.) (Survey) course at University College, Nairobi, was appointed staff surveyor. One African returned from a photogrammetry course at I.T.C., Delft, Netherlands. Details of other professional and overseas training are given in Section 7.

One assistant surveyor and one survey assistant unfortunately died in road accidents.

At the end of the year there were 37 vacancies in the total approved establishment of 847 which comprises seven directing staff, 27 professional officers, 294 technical officers, 64 executive/clerical staff, 94 drivers and 360 subordinate staff. There were 90 new appointments, 47 promotions and 63 retirements, etc.

Finance

In the financial year starting 1 July 1967, £K218,210 was provided from development funds for land adjudication surveys and £K83,100 for additional buildings, vehicles, and equipment required for these surveys. Funds were again provided by the Settlement Fund Trustees for base-mapping for planning settlement schemes, and for reimbursement of part of the cost of completed title surveys in the schemes. The revised recurrent expenditure estimate totals £K431,700.

Labour

The subordinate staff establishment was increased on 1 July from 350 to 360. All subordinate staff over the apparent age of 55 were retired to create vacancies for younger men. Other vacancies arose from deaths or promotions. A total of 34 casual labourers having more than three years' service were appointed to fill these vacancies.

The average number of casual labourers being paid was 140. A review of labour requirements was made in an attempt to reduce this total.

Stores

The total value of stores on department charge approximates £K1,250,000. New items value K£12,440 were purchased. Unserviceable and surplus stores sold by public auction realized K£218. Stores lost or negligently damaged totalled only K£74 of which K£35 was recovered from the officers responsible.

A large quantity of survey equipment no longer needed by the department was transferred to the Kenya Polytechnic which has taken over some survey training courses.

One hundred and sixty-seven Inventory holders held 6,117 items of stores, transactions totalling 5,593.

Transport

The transport fleet was increased by ten short-wheel-base Land-Rovers and two Mini-Mokes for land adjudication surveys.

The total fleet now comprises 111 units:—

Lorries, 3 ton	..	..	..	20	Mini-Mokes	..	..	..	8
Lorries, 1 ton	..	..	..	1	Staff car	..	..	..	1
Land-Rovers L.W.B.	..	..	..	65	Water trailers	..	..	..	3
Land-Rovers S.W.B.	..	..	..	10	Caravan	..	..	..	1
Vans, ½ ton	..	..	..	2					

Many of the above are no longer in an economical running condition and are due for replacement. The aggregate mileage was 680,000. Six vehicles were involved in accidents.

Buildings

The proposed removal of the Headquarters office (mentioned in the reports for 1965 and 1966) from its present site was again postponed.

Consequent on the accelerated land adjudication programme, plans were made for extensions to Field Headquarters and for new buildings in the districts to be erected in 1968.

3. LAND SURVEYORS BOARD

The board continued to fulfil its statutory function in control of the private land surveying profession in Kenya.

Membership of the board comprises two licensed surveyors in Government service, and two in private practice, under the chairmanship of the Director of Surveys.

Six meetings were held during the year, and one new licence was awarded. Two other candidates were undertaking final trial surveys at the end of the year.

The East African Land Survey Certificate Regulations were published during the year after lengthy discussions between the territorial boards, and the Land Surveyors Board agreed to accept the East African Land Survey Certificate examinations in lieu of the Kenya licence examinations with the exception of the Final Examination Part II (Trial Survey). In consequence of this decision no Kenya Licence examinations were set in 1967, and candidates for the professional examinations were invited to sit the East African Land Survey Certificate examinations in March, 1968.

At the end of the year there were 22 registered Licensed Surveyors in Kenya: six in the Survey of Kenya, seven in private practice, two in University College, one at the Kenya Polytechnic, six in other organizations, and one in retirement.

4. CADASTRAL BRANCH

General

The volume of land transactions involving survey work by this branch was slightly higher than last year.

The Coast Province attracted most of the increase due mainly to the growing interest of developers, aware of the tourist potential of this area.

The retirement of a superintendent of surveys depleted still further the thinning ranks of experienced personnel available to the branch.

Cadastral Surveys

Five hundred and twelve surveys were submitted for examination, an increase of 22 over 1966, 64 of these being office compilations. The private licensed surveyors accounted for 183 surveys, a figure which reflects the increasing tempo of development. The checking office with less-experienced staff at its disposal was hard put to to keep pace with submissions; at the year's end 89 surveys awaited check. 59 Government surveyors contributed 265 title surveys during the year; needless to say, this does not represent their total output but reflects the department's policy of giving the field staff as much experience as possible in the various types of fieldwork they are called upon to do.

Settlement Mapping

The survey of settlement towns (these are new towns serving the settlement schemes) continued at a steady rate, 66 having been surveyed so far. Production of title mapping for the settlement schemes proved irritatingly slow, only 5,730 acres of this mapping being published. This slow rate of progress is due not so much to survey difficulties but more to administrative problems which are outside the control of this department. Much valuable experience has been gained which, it is hoped, will result in greatly increased production next year.

Topographical Base Mapping of 78,905 acres at a scale of 1:2,500 with 10 feet V.I. contours was produced for the Director of Settlement.

TABLE C.1—SURVEYS FOR TITLE IN 1967

Category	Farms and Farm Subdivisions		Township and Residential		Miscellaneous		Totals	
	Parcels	Acres	Parcels	Acres	Parcels	Acres	Parcels	Acres
Government	59	40,634	1,114	2,828	5	12	1,178	43,474
Private ..	184	35,557	314	1,036	—	—	498	36,588
Settlement Scheme Surveys ..	173	2,148	2,439	3,799	—	—	2,612	5,947
TOTALS ..	416	78,334	3,867	7,663	5	12	4,288	86,009

Computing and Checking

TABLE C.2

	No.	Man-days
Survey jobs examined and approved	427	1,109
Plans compiled	64	256
Survey data issued to field	297	89
Comments on subdivision schemes	353	62
Sets of deed plans examined and signed	1,038	97

The average number of staff employed in the checking section was:—

Staff surveyors	5
Assistant surveyors	1
Survey assistants	3
Plan examiners (cartographers)	2

Boundaries and Cadastral Fair Drawing Office

This drawing office consists of two sections—(a) Boundaries Section and (b) Cadastral Fair Drawing Section.

(a) Boundaries Section:

There were four cartographers in this section engaged in the preparation of boundary plans and drafting of boundary schedules, checking of boundary plans and schedules from the Forest Department, checking of administrative boundaries on maps for revision of 1:50,000 and 1:250,000 scale topographical maps, colouring of boundary plan prints and miscellaneous drawing jobs. The analysis of work in this section during 1967 is given in Table C.3.

TABLE C.3

Boundary plans prepared	23
Boundary schedules drafted and checked	42
Forest boundary plans checked	23
Administrative boundaries checked on topographical maps	62
Colouring of new boundary plan prints	310
Colouring (maps and prints) other	142
Miscellaneous drawing jobs	123

(b) Cadastral Fair Drawing Section

There were five cartographers in this section engaged in registry index mapping at a scale of 1:50,000 (series SK. 49) of rural areas, 1:10,000 (series SK. 21) of Mombasa and Coast, 1:2,500 (series SK. 50) of settlement scheme towns and 1:2,500 (series SK. 64) of Nairobi blocks. During the year six sheets of the Coast cadastral series (SK. 21) were revised and changed from lithographic maps to durafilm (for dyeline printing), and a cadastral plate for the new topo-cadastral map "Nyeri 1:5,000" was prepared. The analysis of work in this section during 1967 is given in Table C.4.

TABLE C.4 REGISTRY INDEX MAPPING

<i>Scale</i>	<i>No. of Sheets</i>
1: 50,000 (series SK. 49)	3
1: 10,000 (series SK. 21) (Mombasa and Mtwapa)	8
1: 2,500 (series SK. 50) (24 towns)	42
1: 2,500 (series SK. 64) Nairobi blocks	12
Miscellaneous jobs (including plotting of cadastral boundaries on machine plots and the new topo-cadastral map "Nyeri 1:5,000")	13

Records Drawing Office

The staff strength continued with an unchanged average of 15 cartographers.

The principal tasks of this office also continued unchanged, that is:

- (a) Charting on cadastral record plans: any transaction (e.g. offer of new grant, subdivisional approval, survey, registration) which may or does create or alter a registered boundary is noted on the record plan of the land affected. Any change in registered boundaries is also charted on the relevant registry index map tracing.
- (b) Preparation of deed plans from cadastral survey plans (other than subdivisional plans) in support of the registration of new grants, etc., of Government land.
- (c) Tracing of survey plans (so that dyeline prints can be made from the tracing).
- (d) Preparation of various special plans to illustrate, e.g. applications for subdivisional approval, applications to Water Board, location of plots advertised for alienation, etc.
- (e) Plotting of survey plans from surveyors' computations, etc.
- (f) Checking of all the above plans.

The total jobs in these various categories are given in Table C.5:—

TABLE C.5

Plans charted	2,701
Deed plans compiled	642
Survey plans traced	363
Special plans compiled	161
Survey plans plotted	69
Plans checked	1,571
Miscellaneous	1,270

Survey Records Office

This office continued to be responsible for the custody, indexing and referencing of original survey plans, tracings, deed plans, etc., relating to all surveys under the Registration of Titles Act and an increasing number under the Registered Land Act. It also supplied dyeline prints of such plans.

TABLE C.6

<i>Transactions during:—</i>	1966	1967
Survey plans outstanding	—	—
Survey plans received	373	465
Survey plans registered	373	452
Survey plans awaiting registration	—	13
Miscellaneous surveys (without plans) received	63	70
Miscellaneous surveys (without plans) registered	63	70
Resubmissions received	—	20
Resubmissions registered	—	20
Deed plans numbered	673	922
Deed plans received	818	1,038
Deed plans issued (despatched)	819	995
Deed plans signed	804	1,038
Township layout plans registered	82	100
Approved subdivisional schemes	137	175
Prints issued	13,823	13,808
Miscellaneous jobs	75	59

TABLE C.7—NEW CADASTRAL SURVEYS REGISTERED IN 1967

DESCRIPTION	BY GOVERNMENT		BY PRIVATE SURVEYORS		TOTAL	
	Parcels	Acres	Parcels	Acres	Parcels	Acres
Farms—New alienations	38	30,920	41	12,370	79	43,290
Farms—Subdivisions	21	9,714	143	23,181	164	32,895
Township Plots—New	1,103	2,744	96	314	1,199	3,058
Township Plots—Subdivisions	14	85	218	722	232	807
Resurveys and revisions	5	12	—	—	5	12
Trig. and Standard Traverse Charts	4	2,148	—	—	4	—
Settlement Scheme Surveys						
Farms	173	2,148	—	—	173	2,148
Settlement Scheme Surveys						
Towns	2,439	3,799	—	—	2,439	3,799
Miscellaneous Compiled Plans	51	—	2	—	53	—
TOTALS	3,848	49,422	500	36,587	4,348	86,009

Triangulation and standard traverse charts are included in the total number of surveys.

5. MAPPING AND TECHNICAL BRANCH

Triangulation and Traversing

The Kenya party of the Directorate of Overseas Surveys completed the fixation of a secondary net covering the Masai, Machakos and Kitui Districts.

During the year, the party carried out photo-control work for the Nyanza-Kericho block and part of the Turkana block. Photo-control work was also carried for the Survey of Kenya in the Machakos and Kericho areas.

Departmental surveyors completed a number of tellurometer and triangulation schemes for control of adjudication and settlement air-photo mapping.

The observations for the tertiary breakdown in the north-western part of South Nyanza District were completed and the scheme computed.

Geodetic Levelling

Re-levelling was undertaken of the Mau Summit-Kisumu line and the gross error located. Checking and abstracting of observations continued throughout the year.

Aerial Photography

The Directorate of Overseas Surveys let a contract for small-scale aerial photography of the Nyanza-Kericho mapping block. The Royal Air Force on a training exercise in Kenya completed 75,000 square miles of small-scale aerial photography for map revision.

Large-scale photography for use by the Survey of Kenya and other Kenya Government departments was obtained during 76 sorties giving a total of 240 flying hours. The areas photographed were as follows:

For Settlement schemes title surveys: Lessos complex, Gelegele complex, Uplands/Escarpment, Ol Kalou West complex.

For Adjudication (P.I.D.s and base mapping): Cherangani (Elgeyo), C. Nyanza (Sakwa), Bungoma (Kimilili), Bungoma/Busia (Malakisi/Teso), Makueni, Kakamega (Kabras/Isukha), C. Nyanza (Seme/Gem), Kirinyaga (Rukanga), Tugen Hills, Meru (Tigania), Meru (Liliaba), S. Nyanza (Suna).

For Settlement schemes base mapping: Burnt Forest, Marmanet/Podo Park, Londiani, Kiminini, Kipkabus, Ol Arabel.

For Coast Land Titles: Lamu Island.

For Ministry of Works: Roads: Kinango/Kilifi, Narok/Sotik Post, Nyeri/Kinganjo, Nunguni/Kiu, Londiani/Fort Ternan, Kimilili/Kiminini,

For East African Railways and Harbours Administration: Voi/Mackinnon Road alignment.

For Forest Department: Kipkabus Forest.

For town planning, etc.: Mariakani, Nakuru, Naivasha, Migori, Rumuruti, Kisumu, Embu, Kangundo, Meru, Garissa, Kisii, Thika, Eldoret, Kitale, Kakamega.

For small-scale topographic mapping: Contract 92 Extension.

Air Survey

Mapping of the following was carried out by the Air Survey Section during the year:—

Settlement schemes, etc. (topographic mapping at 1:2,500): 93,000 acres covering Cherangani, Burnt Forest, Marmanet/Podo Park.

Settlement schemes (cadastral mapping at 1:2,500): 61,000 acres covering Mweiga, Sagana/Chieni, Uplands/Escarpment, Ol Aragwai, Lessos Complex, Naro Moru, Gelegele complex.

Trust Land (cadastral mapping at 1:2,500): 10,000 acres covering South Tetu.

Adjudication (topographical mapping at 1:5,000): 57,000 acres covering Loitokitok, Kirinyaga (Rukanga), Meru (Tigania), Meru (Liliaba).

Towns (topographical mapping at 1:2,500 and 1:5,000): The following towns were mapped: Mbale, Mazeras, Tala, Migori, Mombasa, Nairobi (part), Rumuruti, Kangundo, Meru, Garissa, Embu, Kisumu, Thika, Lodwar.

Special purposes (topographical mapping) 1:25,000 mapping of Nairobi National Park, 1:2,500 mapping of Mombasa Airport, 1:1,250 mapping of Nairobi Station Yard.

Computing Office and Records

Continuing use was made of electronic computer facilities in Nairobi.

Calibration of measuring bands and geodetic levelling staves continued throughout the year.

Mapping

Basic Mapping: The D.O.S. completed the compilation of the "Turkana block" of 1:100,000 mapping and the pencil compilations were received and returned during the year. When published this will complete the basic planimetric medium-scale mapping of Kenya.

Contouring: Work continued on new contoured editions of 27 sheets (the "North Nyanza block") of the 1:50,000 series Y. 731 at D.O.S., and work started on eleven more sheets (the "Kericho block"). Negotiations with the Canadian Government for the contouring of 38 sheets (the "Kajiado block") were continued.

Revised Mapping: 1:50,000 scale (series Y. 731): 21 new editions were published; 34 sheets were printed of Series SK. 61, a violet overprint on the 1:50,000 (series Y. 731) showing boundaries of administrative districts, divisions, locations, and sub-locations. Sheets now published total 52.

Popular Mapping: A map of part of Masai Mara Game Reserve (Keekorok area) was published as Series SK. 69, scale 1:50,000. A special overprint on the oblique map of East Africa was published to show the route and control points for the 1967 East African Safari Motor Rally. A new single-sheet township map of Nyeri was published as series SK. 67, scale 1:5,000.

Small-scale Mapping: A compilation of sheet NA-37 of the International World Map, scale 1:1,000,000 (series 1301) was received from D.O.S. for checking and return. The publication of sheet SA-37 is expected in 1968. A new edition of the south sheet of the Kenya 1:1,000,000 (SK. 57) was printed at the end of the year.

Kenya Atlas: About one-third of the work needed to publish a third edition of the *Kenya National Atlas* was completed.

Map Catalogue: A 1967 edition of the Kenya Catalogue of Maps was published.

Special Mapping: Eight sheets out of 25 covering western Nairobi have been printed as a provisional edition at 1:5,000 (series SK. 66) for Nairobi City Council.

Five 1:3,000,000 diagrams were produced for the 1966 Annual Report.

Landing and Instrument Approach Charts were produced for the Directorate of Civil Aviation. Map exchange agreements with Tanzania, Uganda, and Great Britain continued to operate usefully.

Territorial Waters Chart: Following the Tanzanian declaration in March of territorial waters to 12 nautical miles, the latest nautical charts and other maps of the Kenya coast were assembled and studied in anticipation of the need to produce a chart illustrating Kenya territorial waters.

Photo-Lithography Section

The figures in Table R.1 show a big reduction in 1967 in the volume of map-sheets printed. This was mainly due to the revision of the Map Exchange Agreement with the Director of Military Survey (U.K.) which became effective at the beginning of the year. The D.M.S. ceased to supply printing paper in exchange for printed maps and therefore the standard run for each edition was reduced from 5,300 to 1,500 copies.

Air photo production, on the other hand, again increased sharply. 138 rolls of film were processed, 103 of these being for the R.A.F. (1:50,000 revision photography) Alternate shifts were worked by departmental and R.A.F. staff during the flying season January-March. The number of contact prints made in 1967 exceeded the combined total for 1965 and 1966.

Two recruits of Higher School Certificate standard were selected to go to Twickenham Technical College, London, on a three-year training course. Internal training was at a standstill due to lack of time and staff available to give instruction; however, in the annual Occupational Tests six candidates obtained passes and promotions (see "Training").

TABLE R.1—COMPARATIVE PRODUCTION

	1965	1966	1967
<i>Studio:</i>			
Film negatives and contacts	1,639	2,755	3,816
Bromide contacts	27,789	25,240	58,831
Bromide enlargements	794	2,620	4,297
Diapositives	2,345	877	1,642
Photostat copies	9,404	12,798	12,844
Monophoto type-setting	234	182	442
Dyeline prints	28,612	22,887	32,762
Autopositive	448	586	74
<i>Printing Down:</i>			
Machine plates (double-demy and Gestetner)	497	825	769
Artrafoil prints made	1,809	2,703	2,881
Astrafoil full sheets used	—	—	543
<i>Press Room:</i>			
Sheets of type	432	586	570
Colour impressions	1,843,110	1,536,706	675,792
Gestetner impressions	—	122,458	231,832
Dufa press	—	6,349	6,883
Printing orders	—	208	166

Map Sales and Issues

During 1967 the sale of publications realized K£8,929 as shown in Table F.2. A discount of 50 per cent was allowed to all schools and similar institutions approved by the Ministry of Education.

The value of documents issued free to Government departments (including Survey of Kenya) is also shown:

TABLE F.2

	<i>Survey Headquarters</i>	<i>Field Headquarters</i>	<i>Public Map Office</i>	<i>Free Issues</i>
	K£	K£	K£	K£
Topographical Maps	—	127	5,550	5,373
Cadastral Maps	—	—	103	76
Atlases	—	14	87	—
Dyeline prints	430	289	24	1,814
Photostat copies	—	8	—	96
Air photographs	—	575	—	486
Enlargements	—	579	—	88
Survey Manuals	—	39	—	5
Miscellaneous	—	1,093	10	1,442
TOTAL	K£ 430	2,724	5,775	9,380

6. ADJUDICATION BRANCH

During the first half of the year the Government completed its study of the Lawrance Mission's Report and prepared a White Paper on it. Implementation of the four-year accelerated programme recommended by the mission started on 1 July—the beginning of the new financial year 1967/68. However, for financial and other reasons, the financial year 1966/67 was in fact deemed to be the first year of the programme, which consequently, will run to the financial year 1969/70.

One of the main changes in policy is that in future all survey work, with the exception of the measurement of fragments when consolidation is undertaken, will be the responsibility of this department and that the work will either be carried out by the Survey Department or by the survey staff of the Land Adjudication Department under our direction and supervision.

A great deal of reorganization has been necessary as a result of the new policy and there has also been some difficulty in preparing the new programme. Consequently, progress in the latter half of the year (the first half-year of the accelerated programme) has not been very satisfactory.

Adjudication Surveys and Mapping

(i) *Mapping*.—(a) Topographical Base Maps.

<i>Province</i>	<i>District</i>	<i>Location</i>	<i>Scale</i>	<i>Sheets</i>	<i>Acres</i>
Eastern ..	Meru ..	Tigania	1:2,500	96	42,298

(b) *Demarcation Maps* (fairdrawn only).

Central ..	Murang'a ..	—	1:2,500	126	26,452
Coast ..	Taita ..	—	1:2,500	38	6,144

(c) *Cadastral Maps (Registry Index Maps) at 1:2,500*

<i>Province</i>	<i>District</i>	<i>Registration Units</i>	<i>Sheets</i>	<i>Parcels</i>	<i>Acres</i>
Central	Kirinyaga	7	110	4,098	23,695
Rift Valley ..	Nandi	1	31	411	7,457
Rift Valley ..	Baringo	1*	—	182	15,741

*Reduced to 1:10,000 for the Registry Map.

(ii) *Preliminary Index Diagrams (P.I.D.)*. After field recording of boundaries, allocation of parcel numbers, etc.; has been completed, a tracing of these is made from the enlargement and used as an interim registration plan. Survey of Kenya prepared P.I.D.s as follows:—

† (a) Re-done at 1:2,500, having originally been prepared at 1:12,500 by the Land Adjudication Department.

<i>Province</i>	<i>District</i>	<i>Registration Units</i>	<i>Diagrams</i>	<i>Parcels</i>	<i>Acres</i>
Western ..	Kakamega ..	Inaya	12	733	3,272
		Bukura	19	957	4,440
		Shiraba	18	820	4,680
		Buchenya	16	821	3,701
		Mundobelwa	15	1,430	3,791
		Wambulishe	20	1,381	3,400
		Shikunga	18	1,032	4,348
	Shianda	12	1,265	3,041	
	Bungoma ..	Kamukuywa	39	1,185	11,142
		Kimilili	50	888	10,334
Nyanza ..	Central Nyanza.	Ndere	13	723	4,062
		Marenyo	14	966	3,185
		Got Rengea	8	823	2,448
		Kamwa-keyo-ogoro ..	15	452	2,200
			14	269	13,476	64,044

† Many of these registration units were wrongly shown in the 1966 report as having been prepared in 1966 when in fact they were only in the process of being prepared.

(b) *Current programme (original)*.

<i>Province</i>	<i>District</i>	<i>Registration Units</i>	<i>Diagrams</i>	<i>Parcels</i>	<i>Acres</i>
Eastern ..	Machakos (Makueni)	Unoa	11	422	13,328
		Kako	14	418	13,002
		Kyaluma	4	123	4,414
		Kikumini	16	584	20,758
		Mubau	19	600	18,880
		Kalawa	14	447	14,780
			6	78	2,594	85,162

All the above were at scale of 1:5,000, approximately.

(c) Enlargements of photographs for the preparation of P.I.D.s were produced as follows:—

<i>District</i>	<i>Sub- Locations</i>	<i>Diagrams</i>	<i>Scales</i>	<i>Approx. Acreage</i>
Kakamega	46	831	1:2,500	249,456
Kisii	22	544	1:2,500	83,135
Central Nyanza	35	493	1:2,500	115,135
Bungoma	23	685	1,2,500	185,525
Masaku	6	88	1:5,000	85,163
Busia	21	618	1:2,500	209,135
South Nyanza	6	292	1:2,500	102,370
TOTAL	168	1,551	—	1,029,920

(iii) *Flying*: An area of some 3,600 sq. miles, mainly in Nyanza, Western and Eastern Provinces, was photographed.

(iv) The main task of officers in the field is now the supervision of the land adjudication surveyors in the preparation of all the registry maps. In addition they are in the process of re-doing those P.I.D.s which had previously been prepared at a scale of 1:12,500, pre-marking and fixing ground control for air photography, carrying out all mutations and dealing with queries brought to light during the preparation of accurate maps of those areas where previously there had only been a temporary map. This latter task is now almost completed for the moment as the production of accurate maps is being temporarily suspended. They are also surveying sub-location boundaries in the Taita District.

TABLE A.1—AIR SURVEY AND ADJUDICATION RECORDS OFFICE

The following items were received into records during 1967:—

Sub-location topographical sheets	Nil
Sub-location demarcation sheets	663
Sub-location cadastral sheets	527
Negatives	245
Machine plots	565
Diapositives	1,188
Tracings	509
Plane-table sheets	Nil
Photo enlargements	373
Aerial photographs	20,081
R.A.F. photographs	23,631
R.A.F. films	75
Other films	81
Settlement scheme topographical sheets	Nil
Miscellaneous	241

Over-counter transactions (issues and returns) during the year:—

Aerial photographs	17,851
Diapositives	1,812
Machine plots	1,536
Machine plots revision prints	55
Sub-location sheets	2,869
Miscellaneous	542

Reproduction orders placed by this office and copies distributed:

Dyeline prints	} 1,550 orders involving	{	10,500 prints
Photostats			6,686 copies
Diapositives	61	„ „	1,464 diapositives
Photo enlargements	503	„ „	4,368 enlargements
Photo contact prints	270	„ „	37,996 prints
Miscellaneous	27	„ „	13,141 copies

7. TRAINING

Basic and advanced survey courses have now been transferred to the Kenya Polytechnic, where the first ten-month course started in September. The two instructors were formerly members of this department. It is hoped to transfer other courses at some future date.

Departmental Training

The following departmental training courses were held at Field Headquarters:—

(a) *Survey.—Basic Course No. 39* (the last): May to November, 16 students.

Advanced course No. 16: February to May, one student from Water Development Department and six from Survey of Kenya; two of the latter resigned before the end of the course.

Further Advanced Course No. 8: October 1966 to January 1967; eight students.

(b) *Air Survey.—Basic Course*: 16 to 27 January, as a continuation of Further Advanced Survey Course No. 8.

(c) *Cartography.—Basic Course No. 22*: February to August; two students from Lands Department and nine from Survey of Kenya; six from Land Adjudication attended for two months.

Examinations

As a result of the written Occupational Tests held in March 1967, together with practicals at various dates, the following officers became eligible (subject to available vacancies) for promotion, as shown:—

Survey Assistants, Grade II to Grade I	3
Survey Assistants, Grade III to Grade II	6
Survey Assistants, Junior to Grade III	2
Cartographers, Grade II to Grade I	2
Cartographer, Grade III to Grade II	1
Cartographers, Junior to Grade III	3
Photogrammetrist, Grade II to Grade I	1
Cartographer, Grade III to Photogrammetrist Grade II	1
Photolithographer, Grade II to Grade I	1
Photolithographers, Grade III to Trade II	2
Photolithographers, Junior to Grade III	3
Records Officer, Grade II to Grade I	1
Records Officer, Junior Grade I to Grade III	1

Professional and Overseas Training

The B.Sc. (Eng.) (Survey) course at University College, Nairobi, started in 1964, produced its first graduates, one of whom returned to this department with the appointment of Staff Surveyor. The total number of students sponsored by this department and reading for this degree totalled 14 at the end of 1967, together with one reading geography (for cartography).

One Staff Surveyor went to London for a one-year post-graduate course in photogrammetry.

One Survey Assistant joined the two already at University of New Brunswick (Canada) for the five-year survey degree course.

Five students continued at Waltham Forest Technical College (London) on courses leading to the R.I.C.S. examinations. One passed the Intermediate R.I.C.S. examination.

Two students went to Twickenham Technical College (London) to start a three-year course in photo-lithography, one photo-lithographer returned from a short course in photography at the Department of Technical Surveys in Ottawa, and one photogrammetrist from a course at I.T.C. Delft.