

32" inch to a mile (1:2000) and taking out area. Drawing a yard scale and one of chains and links, North point and magnetic declination to be shown). Use of substance Bar in case of obstruction in traverse lines.

- (iv) Use of magnetic compass in traversing and computing - 1 day.
- (v) Explanation of computation chart of traverse circuit.
- (vi) Cadastral survey- 10 working days: Method of filling in details from plotted traverse stations -necessity of distribution of error in subsidiary lines, use of pantographs and planimeter. Execution of a cadastral survey of above 20 acres on the scale 64" to a mile. Areas to be extracted by acre.
- (vii) Partalling- 2days cadastral Survey executed to be partalled.

3.2 ACS officers Course of training on Survey will be same as that of the Indian Administrative Service etc. Course as at 3.1; but in order to impart detailed knowledge on survey matters, ACS officers will devote approximately three months to field survey training.

The syllabus to the course as follows: -

(a) Chain survey.	15 working days
(b)Block survey	6 working days.
(c) Extension survey	6 working days.
(d) Plan table survey	8 working days.
(e)Theodolite Traversing & computation	12 working days.
(f) Cadastral Survey	20 working days.

Training also will be imparted on practical problem ordinarily met with by the officers in charge of Circle.

4 Working timetable: On working days officers should work in the field from 3 to 6 hours. There will be no work on Sunday and Government holidays.

During the course, Officers will have access to 16" (inch) cadastral map prepared during the settlement operation and one inch, half inch and quarter inch topographical maps of the survey of India. The Director will arrange for a supply of these as required.

Modernisation:

- (i) Instruments used for Tachometric Survey/ Distomate (E D M) Survey

may be purchased for demonstration amongst the trainees of Assam Survey and Settlement Training Centre.

- (ii) Audiovisual method of training to supplement the lectures on principles of survey is to be emphasised.

B. LAND RECORDS AND SETTLEMENT

5. On the termination of the training in survey, the officers will if there be, then no district under settlement be deputed for training in Land Records and Settlement work under the Assistant Director. The period of such training will ordinarily be not less than three weeks and distributed as follows:

i. Preliminary instruction in office- 4 days. This will consist of a course on lectures on the subject noted below:

- (a) Past land revenue history.
- (b) Surveyed and unsurveyed areas in Assam.
- (c) Preparation and maintenance of maps and records.
- (d) Regular and Supplementary Abstract.
- (e) Maintenance of survey marks.
- (f) General duties of Recorders, Supervisor Kanongos, Registrar Kanongos and Circle Officers.
- (g) Procedure of Mutation in field and in office.
- (h) Settlement Rule under Sections I, II, III, IV, V and VI.
- (i) Assessment of local rates.
- (j) Rules for deferred enhancement of land revenue.
- (k) Grazing reserve.
- (l) Suspension and remission of revenue.
- (m) Land reforms.
- (n) Assam Relief Manual and discussion on Agricultural census.

(ii) Practical instruction in doing field mutation in village-2 days. This will consist of reading out the name of settlement holders recorded in periodic Jamabandi and recording the names of 'dakhalkars' in Column-5 of the chitha.

(iii) Practical training in the present system of land classing -2 days. The officers will be taken to a typical village and given practical training in the system of land classification adopted at the last re-settlement.

(iv) Writing of Chitha in the field-3 days. For this purpose officers will be divided in the batches of two to three and will be given copies of existing cadastral maps of certain villages. Each officers will write out

- the chitha for at least 50 days, recording crops as well as classification in addition to the name of the settlement holders and their work as it goes will be tested by the officers incharge.
- (v) Area calculation and other office work including Jamabandi writing-4days. This will be done in office. Revenue and local rates should be calculated at the same time.
- (vi) Re-settlement and method of assessment under soil unit system - 3days. The various process of resettlement and the soil unit system of assessment will be clearly explained.
- (vii) Visit to Registrar Kanungoss and Circle Officers' office and local Mouzaders' office and examination of the Registers. The officers can easily be taken to the Register Kanongu at Guwahati.
- (viii) Coaching in Rule- for this purpose, the officers will be taken in batches of two to three at a time and the rules of the Land Revenue and Land Records Manual will be discussed.
- (ix) Time allowed for preparation-2 days.
- (x) Examination-1 day. Final examination will be held on the following Subjects:

<u>Subject</u>	<u>Marks</u>	<u>Term examination</u>
1.Chain survey	20	10
2.Cadastral survey	-	50
3.Traversing	20	10
4.Computation	10	10
5.Survey theory	30	20
6.Area extraction (including planimeter)	10	10
7.Enlargement & reduction of maps	10	10
	100	120

(Settlement portion)

8. Land records and settlement work:	Theoretical	80
	Practical	20
	Total	100

Final examination

Term examination

Total	200	120
Term marks	50	-
Cadastral		
<hr/> Total	<hr/> 250	<hr/> 120

A candidate should secure 50 percent marks in each of the above mentioned subjects and 50 percent marks in the term examination in Cadastral Survey in which there will be no final examination. This means that out of the total marks of 250, 125 marks will have to be secured to declare candidate passed. These standards may be relaxed in case of slight deficiency if the term marks are good.

6. At the close of the training in survey, the officer will if there be then any district under settlement, usually be deputed to the district for training under the Settlement officer in as many of the above mentioned items as convenient. The Director will arrange for such examination oral and written, if any, as he may deem necessary after the training is over.
7. The Director shall after the examination, if any held under Rules 5 and 6 above submit a report on the proficiency of each officer.
8. Until an officer is reported by the Director by the Director to be proficient in Survey and Settlement works, he shall not be deemed to have been declared passed the Departmental examination by Government, except in special circumstances.

OFFICERS' CONDENSED COURSE

A condensed course of training for a period of not less than one month (30 working days) may in special circumstance be arranged under Government orders, for such officers as cannot be deputed to the officers Regular course class.

REFRESHERS COURSE FOR OFFICERS

After Independence many new land laws have been enacted and amendments to the acts and rules have to be brought in frequently including the Acts and Regulation of the pre-independence days. Therefore it becomes very difficult on the part of Revenue officers to keep themselves acquainted with the present position in land laws. Therefore there is provision for refreshers course for officers under orders of Government.

APPENDIX-II

SYLLABUS FOR THE RECORDER CERTIFICATE CLASS.

The syllabus and course of instruction will be as follows:

1.

1 st month	Arithmetic, Geometry, mensuration drawing acquaintance with common survey & drawing instruments-preliminary chain survey.
2 nd month	
3 rd month	

Arithmetic: (a) The first four rules of Arithmetic, whole numbers, vulgar fractions, decimals in vernacular and English.

(b) Rules of three and unitary method.

(c) Extraction of square root.

Geometry: -

(a) Construction and drawing of ___ and lineal figures, circle.

(b) Division of lines and angles, drawing of perpendiculars and oblique offsets, partial lines.

(c) Properties of triangles.

Mensuration: -

(a) Table of land measurement and conversion of one to other.

(b) Area calculation by figures.

Algebra: -

Preliminary lessons on Algebra may also be given to help Arithmetical calculations.

Training on the above subjects will conform to the syllabus meant for HSLC course conducted by Secondary Education Board of Assam.

Drawing: -

Practice in line drawing and linking with instruments in use of drawing instruments and materials- line pen, bow pen and Indian ink, blue cobalt, different colours etc.

Survey: -

Use of chain, optical squares, cross staff, offset scales, divider compass, parallel rules, simple and diagonal scale- 1:4000 (16"), 1:2000 (32") and 1:1000 (64") to a mile.

Testing of these instruments:

Running chain line, overcoming obstruction in plain and undulating areas, stepping method, running of chain line from any position- idea of chain and plane table survey, writing of field books.

Plotting:-

- (1) Instruments necessary for plotting.
- (2) How to plot.
- (3) Plotting on the spot
- (4) Plotting from the field book.
- (5) Plotting the result of chain and plane table survey on 16" to a mile (1:4000), 32"-1 mile (1:2000) scales.

Triangulation:

- (i) Block survey of at least 40 acres in isolated area and in extension of about 8 blocks. Reconnaissance and setting out triangles. Necessary for tie lines method of survey by main and subsidiary lines. Plotting of external boundaries and filling in of interior details.
 - (ii) Traversing, use of Plane table, North compass and sight vane. Executing traverse of at least 7 fields with 5 to 15 stations. - Checking traverse and corrections;- intersection and interpolation.
 - (iii) Class work- Plotting and inking.
- Mensuration: Different tables of measurement and finding areas.
Scale making simple and diagonal scale.
Map drawing and map inking.

Examination on the last two days

2. 4th month : Cadastral survey: Preparation of village map; one village of about 40 acres on 32"-1 mile scale (1:2000)
Boundary reconnaissance.
Making traverse stations.
Traversing
Making Khaka, use of khaka, in recording field book of boundary of the Village and dividing the village into Murrabba according to scale for survey of interior details plotting of boundary and katans from khaka filling in of interior details with the help of sikimi lines, within the Murabba by method of direct plotting. Necessity of distribution of errors in all lines, dag identification and checking.
Partalling.
Inking the village map
Class work: Mensuration, scale making including acre comb and acre squares. Area extraction with acre comb and area squares.
Land Records Rules.
Examination 2 days.
3. Fifth month: Cadastra survey, preparation of village maps of not less than 50 acres including Basti land, Road, Bridge etc. on a scale of 16"-1 mile (1:

4000) scale using survey symbols and conventional signs. Plan tabling; intersection, interpolation, offsetting.

Class work: Mensuration scale making, area extraction- use of planimeter. Map inking-

Land Record Rules including Lectures on Land Reforms and discussion on Assam Relief Manual; preparation of 3rd village map of 1:4000 scale of about 50 acres with sub traverse including Basti, waste land, jungles etc. Plotting, inking, scale making, Mensuration and Land Records Rules, survey problems, Examination - 2 days.

4. Sixth month: Cadastral survey- preparation of fourth village map connecting with the third village on 1:4000 scale of about 70 acres including Basti lands, Rupit land, waste land, Jungles and hills etc. (with particular attention to hills survey); Record writing, numbering of dags and pillars.

Preparation of survey marked register and maintenance of survey mark register and maintenance of survey marks with instruction in survey marks.

1. Definition.
2. Different kinds of marks used.
3. Their objects.
4. Construction of various marks.
5. What steps are to be taken to find out the "Simul" Tree or Dhip or Station from other Simul trees growing wild especially in jungle tracts and close to rivers or other jans.
6. General remarks on the different kinds of boundary marks that occur in Assam.
7. Preparation and repair of boundary marks.
8. Reference marks of pillars. Relaying of missing stations and boundaries, preparation of comparative Map.

Class work: Record writing, preparation of Chitha, Jamabandi other registers and obstructs, Map, including:

- (a) Cadastral Maps.
- (b) Revenue Survey Maps.
- (c) Topographical maps, with all sorts of conventional signs.

Revision; practical training in Land Records works in Circle Office and Registrar Kanongo's office nearer to the Centre.

Final examination:-

Land Records Training Course will include the following Rules of:

Rule 2 to 9- Surveyed areas.

Rule 10- unsurveyed area.

Special attention will be drawn by the teachers to :

- (a) Those papers which are kept in the Mandal's hands and their use.
- (b) Those papers which Settlement Officer make over to the Deputy Commissioner, where they are kept and with whom they are kept.
- (c) Sarkari Dag list: Difference between the lists kept in Kamrup, Darrang, Sibsagar, Nawgaon, and other districts.
- (d) Bigha rate list: How made and used
- (e) Revenue calculations: (I) By Bigha rate
(II) By soil unit system.
- (f) Correction of Jamabandi Register by the Mandal or Amins; Remuneration exclusions and what remarks are to be made during correction and what points must not be omitted.
- (g) Correction of Chitha and Jamabandi in accordance with Relinquishment Register and Faut, Ferar and Jotrahin exclusion lists.
- (h) Crop entries-how to be made.
- (i) Survey marks-Conventional signs to be used in case of Dhips with or without Simul trees. Register of Survey marks: How to be written.
- (j) Pointing out of boundaries of permanent field in several villages

Comparison of cardboard scale with those pointed on maps and with metal scales.

Examination will be held in the following subjects in the final examination. Full marks are shown against each subject.

<u>Subject</u>	<u>Final Examination</u>	<u>Term examination</u>
i) Chain Survey	50	15
ii) Cadastral Survey (including plane Table)	-	50
iii) Survey Theory	50	20
iv) Area calculation	30	20
v) Map inking	10	20
vi) Arithmetic	50	20
vii) Mensuration	50	20
viii) Land Records Rule	60	40
ix) Record writing	-	45
Total	300	250

There will be no examination in cadastral survey and record writing, a student should secure 40 percent marks in each of the following important subject namely: I) Chain Survey and area calculation and 50 percent marks in the term examination in cadastral Survey and 40