

REPORT
ON
TOPOGRAPHIC MAPPING PROJECT
FOR
SATIPO AREA, DEPARTMENT OF JUNIN
THE REPUBLIC OF PERU
(Fourth Year Work)

Compilation
Field Completion Survey
Drafting

MARCH, 1986

JAPAN INTERNATIONAL COOPERATION AGENCY

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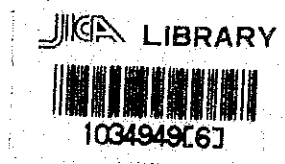
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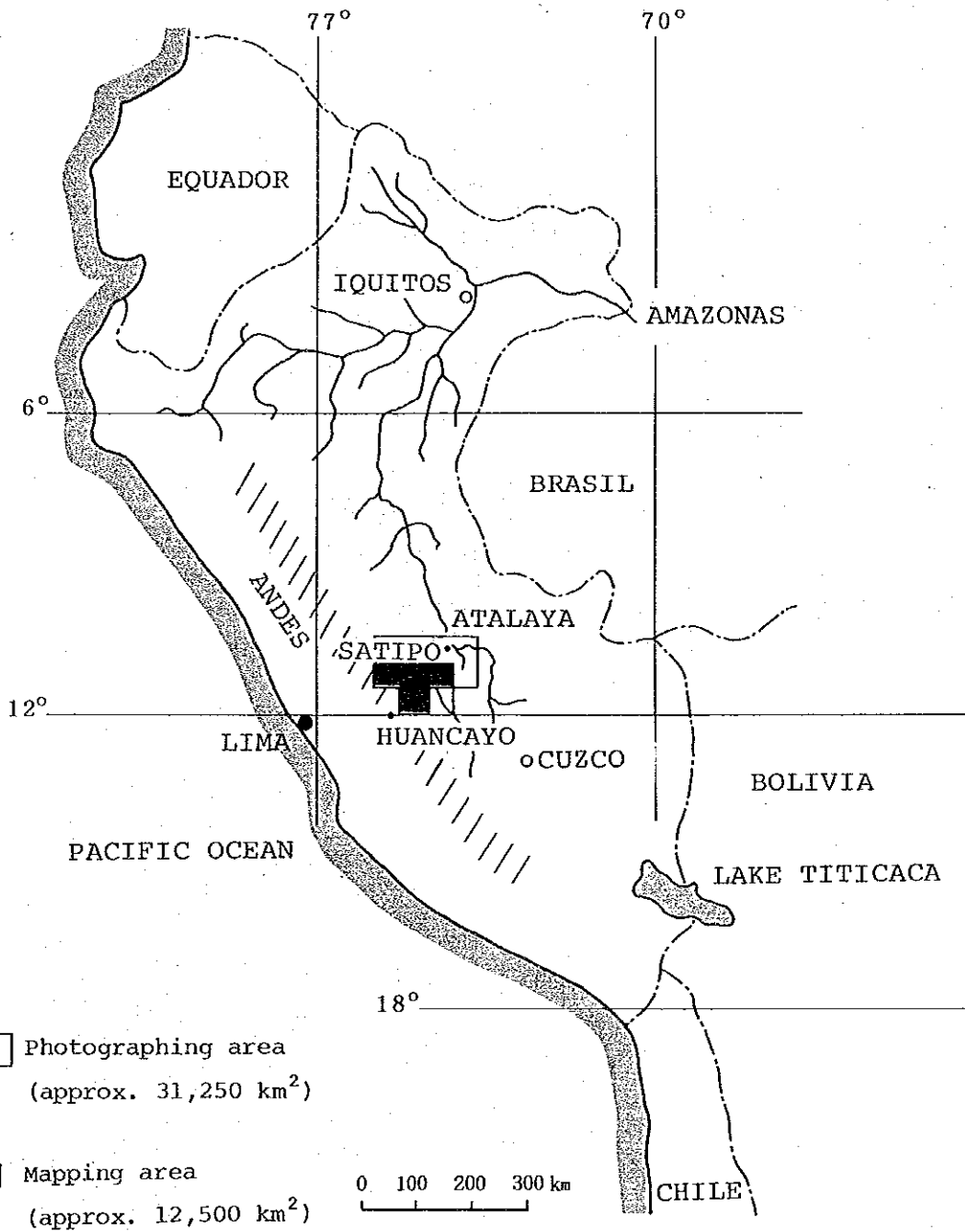
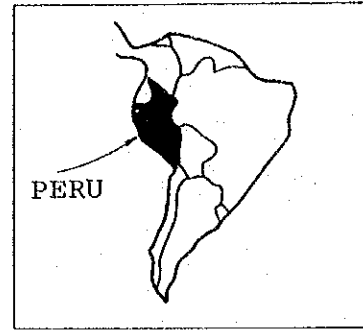
Compilation
Field Completion Survey
Drafting

JAPAN INTERNATIONAL COOPERATION AGENCY



国際協力事業団		
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LOCATION MAP OF
SATIPO AREA MAPPING
PROJECT, JUNIN





Field completion survey
in the vicinity of
Puerto Ocopa

Field completion survey
in the vicinity
of Mirador



Field completion survey
in the vicinity of Mariposa

Compiling of field
completion survey
results



Drafting (Scribing)



Signing minutes



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1. BACKGROUND

In February 1981, the Government of the Republic of Peru requested the Japanese Government to extend technical cooperation on topographic mapping in the area of Satipo, Junin, Peru. Although a many ideas are existed have been envisaged for various kinds of development in the area, it is still not possible to prepared and execute such plans due to lack of basic maps. In those standpoints, it has been desired to prepare topographic maps urgently.

In response to the request, the Government of Japan dispatched a contact mission in January as well as a preliminary survey mission in February 1982 to discuss with the Instituto Geografico Nacional (IGN). In April 1982, S/W was mutually agreed and signed by the governments of both countries.

In accordance with the S/W, a scale of 1 to 25,000 topographic mapping for the Satipo area has been continued since 1982. This stage of the fiscal year 1985 corresponds to fourth-year work.

The outline of work in past stages are as follows:
First year (1982): Aerial photography
Second year (1983): Aerial photography, Geodetic control
point survey (Satellite observation,

Traversing, Levelling)

Third year (1984): Aerial photography, Pricking, Field
identification, Domestic work
(Aerial triangulation, Stereo plotting)

2. FOURTH YEAR WORK

2-1. Outline of work

Subsequently to the third-year work, field completion survey were performed as the fourth-year work. As for domestic work, compilation and drafting were carried out.

Topographic features, planimetric features, administrative and natural names which were shown on original compilation manuscripts were identified and confirmed by field completion survey.

Secular changes arose after aerial photography were also updated by plane table survey.

2-2. Outline of project area

The project area is locating at about 250 km east-northeast of Lima, the capital of the Peru. The Andes Mountains, the altitude of 5,000 meters, run in the western part of the project area. Project area is extending from the east slope of the Andes Mountains into jungles, the altitude of 500 meters, in the upper stream basin of the Amazon river. A lot of natural character exist in the project area, accordingly, the natural condition is extremely unique and physically severe.

As to transportation network, the principal national highway runs from Lima through San Ramon up to Satipo and

another national highway running from Satipo through southern mountainous area to Huancayo.

During the third-year work, the small aircrafts based Satipo air field were only available for traveling to the jungle in the eastern part of the project area. However, the access road for jungle area running from Satipo through Mazamari up to Puerto Ocopa has been constructed in this year. Access to the Tambo river and Ene river can thus be made with relative ease. (Refer to Fig. 1)

Fig. 1 Map of project area



- Aerial photographing area
- Topographic mapping area

2-3. Duration

Compilation: Jun. 10, 1985 to Oct. 5, 1985
Field completion survey: Jul. 4, 1985 to Sep. 10, 1985
Drafting: Oct. 5, 1985 to Feb. 28, 1986
Preparation of reports: Jan. 15, 1986 to Mar. 25, 1986

2-4. Organization of survey mission

Leader: Masayoshi Takasaki 8/28 to 9/10
Deputy Leader: Toshimasa Nagashima 7/4 to 9/10
Chief surveyor: Toshiyuki Harada 7/4 to 9/10

The following staff were in charge of field completion survey:

Isao Morita 7/14 to 8/26
Yoshihiro Azuma 7/14 to 8/26
Toshiyuki Masui 7/14 to 8/26
Toshiaki Kanada 7/14 to 8/26
Takeo Nagai 7/14 to 8/26
Takeshi Toyooka 7/4 to 9/5

Staff for consultation on drafting:

Tomoyuki Nakano 8/23 to 9/5

2-5. Work volume

Compilation: 12,070 km² (64 sheets)
Field completion survey: 12,070 km² (64 sheets)
Drafting: 9,053 km² (48 sheets)

2-6. Plan and result

Type of work	Planned area	Achieved area	Ratio	Remaining work
Compilation	12.070 km ²	12.070 km ²	100%	None
Field completion	12.070 km ²	12.070 km ²	100%	Drafting
Drafting	9.053 km ²	9.053 km ²	100%	3.017 km ²
	48 sheets	48 sheets		16 sheets

2-7. Major equipment and materials

1. Compilation:

High speed automatic drawing device 1 unit

2. Field completion survey:

Plane tables (Tamura-system) 2 sets

2-8. Itinerary for field completion survey team

The itinerary of the survey team is detailed in Appendix 1.

3. COMPILATION

3-1. Outline of work

Compilation was carried out based on the compilation sheets prepared during the third year work. Outline of the work is as follows:

- | | |
|-------------------|----------------------------|
| (1) Scale: | 1:25,000 |
| Coverage: | 12,070 km ² |
| Number of sheets: | 64 sheets |
| Neatline: | 7.5' x 7.5' (UTM 18 zones) |

3-2. Details of work

Using the field identification photographs, compilation sheets, geodetic control points data and the other related data, the compilation work was carried out by the following procedures:

- (1) Both of the planimetric details and contour lines were compiled on the same sheets by overlay sheets. In order to execute subsequent scribing efficiently, the following three data sheets have been separately prepared. (1) highway data sheets, (2) annotation data sheets, (3) vegetation data sheets.
- (2) Polyester base sheets (thickness #500) of small expansion/shrinkage coefficients were used for original compilation manuscript sheets.

Neatline, ticks of 2.5' intervals on the neatline, cross of 2.5' intervals, geodetic control points and UTM grid of 1 km intervals were drawn on the each original compilation sheets.

(3) In the compilation work, provisional sheet names were used. Final sheet names to be used for drafting work were prepared by IGN and submitted to JICA field completion survey team.

(4) Color separation on original compilation sheets are specified as follows.

a) Red: Symbolized road

b) Black: Symbolized road (more than two lanes), buildings, contour lines, and others

c) Blue: River system and contour lines in permanent snow fields

d) Green: Vegetation

e) Brown: Sand/dune

(5) Areas that could not be plotted by clouds were left as blank in accordance with the minutes of meeting in the third year stage.

(6) According to the sample map, the destination annotations were drawn.

(7) Generalization of the towns and villages were carried

- out in accordance with map symbols.
- (8) Direction of isolated buildings were decided in consideration of topographic and infrastructure condition.
- (9) Contour lines are congested in the rugged terrain so that the compilation work was carried out carefully for expressing true topographic conditions.
- (10) Reproduced topographic maps received from IGN were used for adjoining of newly produced maps and existing maps. Reproduced maps in polyester base were used to record adjoining area among newly compiled sheets.
- (11) For the efficient execution of the subsequent work, the following three data overlays were prepared separately.
- a) Annotation data overlays

According to the instructions given by IGN for letter size, spacing and the position of letters, lettering method were used for avoiding misspellings of annotation data.

Application of map symbols were referred to the AMS (Army Map Service) manual.

- b) Road data overlays

Roads were color-coded according to their grades. Particular attentions were paid to avoid omissions of

drawing, wrong adjoining and errors of drawing.

c) Vegetation data overlays

After compiling planimetric features, compiled sheets were reproduced with polyester base for color separated classification on vegetations, to avoid omissions of drawing, wrong adjoining and errors of drawing.

3-3. Inspection

Correspondence with field identified aerial photos and application of map symbols and relations between contour lines and spot heights were inspected using overlay of white uniper (#150) after compilation was completed. Also questioned points were drawn which would be confirmed in the field completion survey.

4. FIELD COMPLETION SURVEY

4-1. Work progress

(1) Preparation work

Deputy leader, Nagashima, and 2 others left Japan on July 4, 1985 in order to make preparations for commencement of work. After arriving at Lima, they received materials and instruments, arranged vehicles and drivers and discussed with the IGN regarding fourth year work.

On arriving in Lima, some confusion such as the suspension of customs clearance operations and strikes by public servant have been occurred by the influence of a presidential election. In spite of the above confusion, the preparation work was completed by IGN's cooperation.

(2) Field office

The office was established at the following address in Satipo. Satipo is one of the important cities in the Department of Junin. It is not only the center of administration in this district but serves as a collecting place of agricultural products and as a base to enter into a jungle area expanding in the east.

Address: HOSTEL MAJESTIC.

Plaza Principal, Satipo, Junin, Peru

(3) Communications

Permission for radio communication was obtained through IGN, and regular communications among Satipo office, subcamp and IGN in Lima were made for proceeding work and other activities.

(4) ID cards

IGN issued ID card to each member of the survey team to carry it with him all the time.

4-2. Objectives of work

In order to enhance accuracy and quality, particular attentions were paid as follows:

- (1) To confirm questions regarding to the topographic features and planimetric details which arose during compilation work.
- (2) To correct misunderstood and omitted place-name of the annotation data.
- (3) To receive the final sheet names prepared by IGN.

4-3. Field work

Before commencement of field work, the survey team thoroughly discussed with IGN for execution of fourth year work.

According to the following items, the field completion survey were carried out.

- (1) The area along the all passable roads were surveyed as much as possible to confirm the place names and planimetric features.
- (2) As for bridges, those lengths were measured. Based on the third year's minutes, the bridges smaller than specified minimum size but existing permanently were measured and drawn on the compiled sheets.
- (3) After aerial photography for this project, the access road running from Mazamari to Puerto Ocopa was constructed in 1984 through 1985. It is principal road to Jungle area so that the alinement of road was measured by plane table survey and drawn on the compiled sheets.
- (4) Identification of the place names were carried out by IGN.

Field identification results obtained at the third year work were also inspected and approved by IGN.

4-4. Materials used for field work

The following materials were used for the field completion survey.

- (1) Reproduced com- :Original black: for compiling of field
pilation sheets data
- (2) " : Delumina SSP : for field survey
- (3) " : " : for field survey (IGN)
- (4) " : " : for inspection (IGN)

(5) " : " : for inspection

(6) Place-name cards: " : for inspection

(Reproduced compilation sheets used for field survey were printed together with original compilation manuscripts and annotation overlays.)

4-5. Compiling of field data

(1) The results of identified place-name obtained by the IGN in this year were compiled with the results of third year on the same sheet. Place-name cards were also prepared by the IGN.

A format of the place-name card is shown in Table 1.

(2) It is difficult to plot the isolated buildings in the dense forest area by stereo plotter, therefore, those buildings were identified and drawn on the compiled sheets by field completion survey.

(3) Results of plane-table survey and field identified topographic features and planimetric details were compiled on the original compilation manuscripts.

5. DRAFTING

5-1. Outline of work

Based on the map symbols (MANUAL TECNICO No. 321), five color separation drafting (scribing) were carried out.

5-2. Materials

Polyester base and scribe bases, the expansion coefficient less than 0.05% in the normal temperature and normal moisture and the thickness more than 0.12 mm were used for original drafting sheet. Daylight peel coat and peel coat were used for mask plates.

5-3. Specifications

Neatline: 7.5' x 7.5'

Scale: 1/25,000

Contour Line interval: Index contour - 100 m.

Intermediate contour - 25 m

Quantity: 48 sheets (five color separation)

(Refer to Fig. 2.)

5-4. Description of color separation plates

(1) Black plates: Scribe plates -- Roads, buildings, neatline, infrastructures

Marginal information and

- annotation plates -- Annotations (excluding for
water and associated features),
marginal informations,
legends, others
- (2) Blue plates: Scribe plates -- Rivers, Lakes/ponds, and
contour lines in permanent snow
ditto -- Grid Lines
Annotation plates -- Water and associated features
Mask plates -- Water (rivers, lakes, ponds)
ditto -- Swamps, marshes
- (3) Red plates: Mask plates -- Paved roads
ditto -- Congested housing area
- (4) Brown plates: Scribe plates -- Contour Lines,
Topographic feature.
Annotation plates -- Spot heights, heights note of
contour lines
Mask plates -- Sand/dunes
ditto -- Rock outcrop areas
- (5) Green plates: Scribe plates ----- Vegetation boundary
Mask plates ----- Dense forests
" ----- Sparse forests
" ----- Orchards
" ----- Cropland, agricultural
Land
" ----- Grassland

5-5. Work progress and work flow

Drafting work process were consisted of preparation of scribing plates, mask plates, positive plates, negative plates, marginal information and annotation plates and execution of inspection and adjoining work.

According to the above process, drafting was carried out carefully for avoiding mistakes. (Refer to Fig. 3)

Each plates were related by punching and supplemental marks were drawn on the four corner and center of neatline. The accuracy of neatline was specified within 0.2 mm at the four corner.

5-6. Printing of compilation data on scribing plates

Using the original compilation manuscripts, all necessary compiled data for drafting were printed on the scribing plates.

5-7. Preparation of scribing plates

Scribe plates were separated each of black, blue, red and brown and planimetric details were scribed in accordance with the specifications and standard rules for application of map symbols.

Relation of each color plates were inspected on the tracer.

5-8. Preparation of mask plates

Mask plates were prepared by peel coating.

5-9. Preparation of marginal information plates

Original marginal information which was common to all sheets was prepared on the polyester base and its information were reproduced on the all other polyester bases (#500).

5-10. Preparation of annotation plates

Annotations to be indicated in black were drafted on the marginal information plates. Annotation plates of blue and brown were prepared separately.

5-11. Preparation of UTM grid plates

In consideration of revision to be done by IGN in the future, the UTM grid plates were prepared from each sheets.

5-12. Adjoining work

According to respective color, all plates were grouped for adjoining on scribe plates, mask plates, grid plates and etc.

Surprints, printed with five colors such as indicating final topographic map condition were prepared. And the final inspection were done on the surprints.

5-13. Inspection and proof of manuscripts

- (1) After completion of the work, surprints for first-proof were prepared and inspection were carried out on the surprints.
- (2) Original compilation manuscripts, results of field completion survey, inspected surprints and other related data were submitted to the Japanese Association of Surveyors (JAS) for official inspection. After proofreading, the surprints were reproduced and submitted to JAS for the final inspection.

5-14. Details of work

- (1) A1-size negatives of the halftone plates and pattern plates were prepared from B5-size positives provided by the IGN.
- (2) The names for each topographic map sheets provided by the IGN were used. (Refer to Fig. 4.)
- (3) The annotation letter style similar to the specifications and standard of application for map symbols were selected and used.
- (4) According to the style sheets and sample sheet provided by the IGN, the marginal informations were prepared.
- (5) According to the IGN's instruction, the azimuth information was drawn.

Fig. 2 Map of Scribing Area

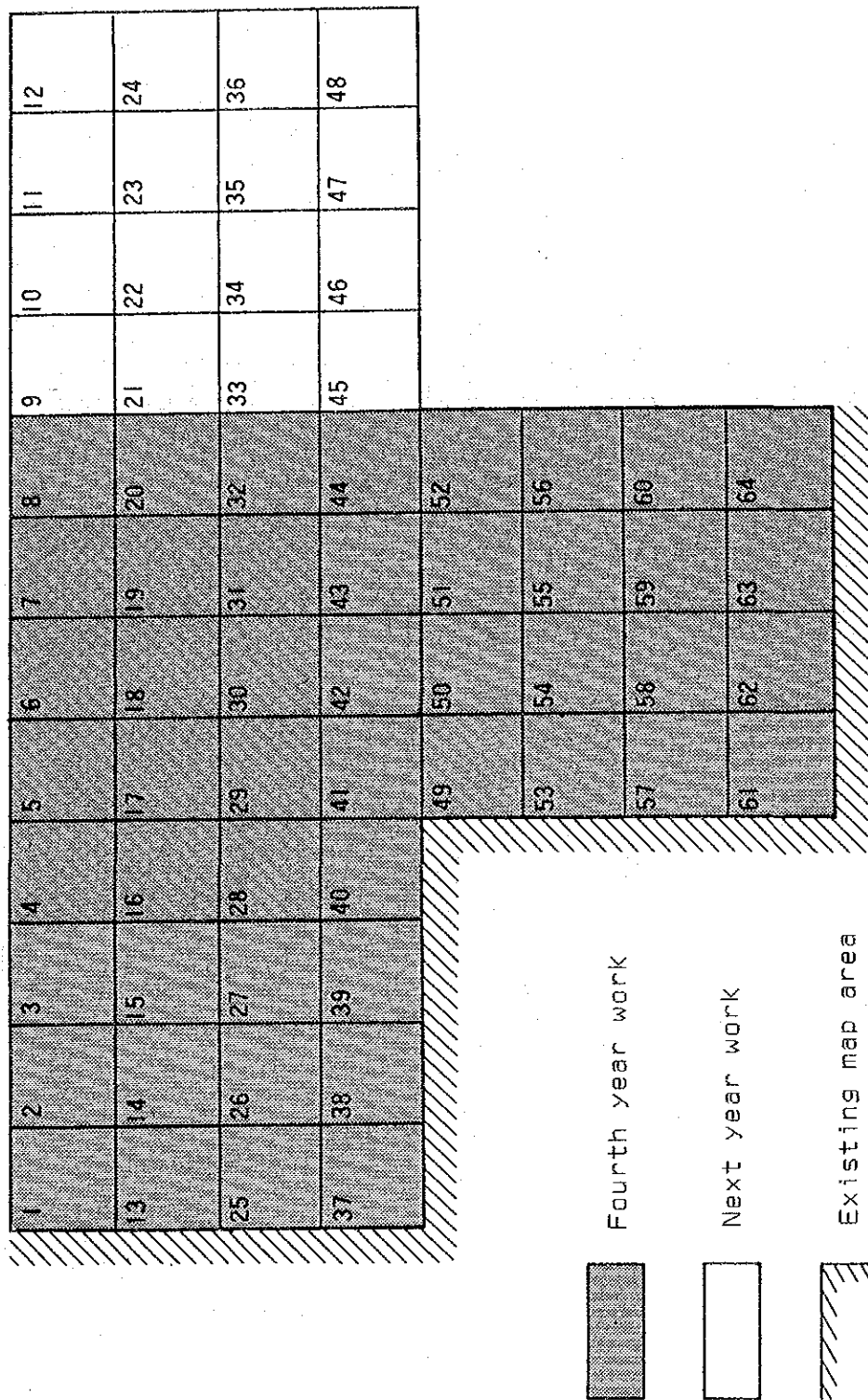


Fig. 3 Work flow for drafting

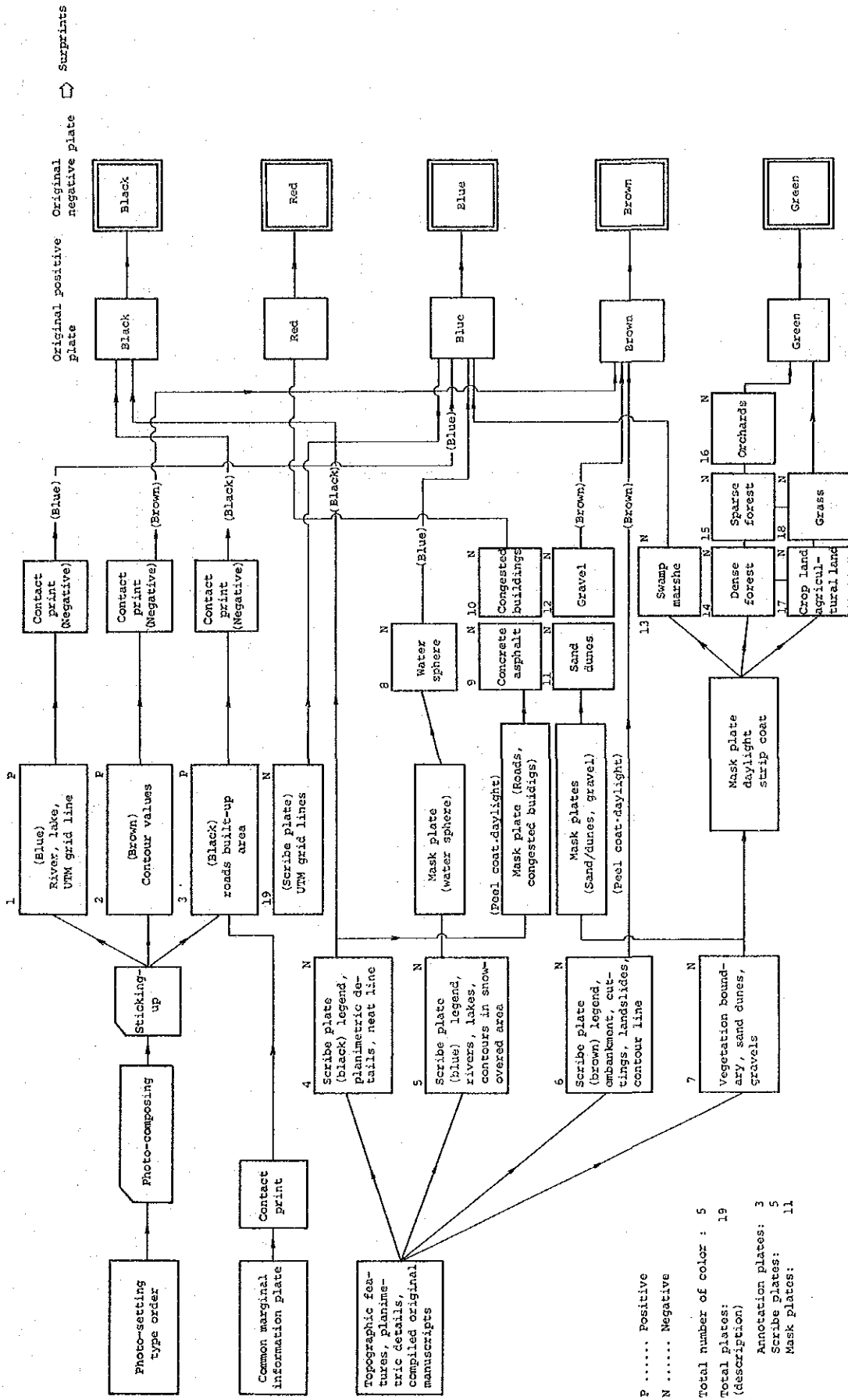


Fig.4 Index to adjoining sheets

1	AUVERNA 23n IV NO	2	LA MERCEDE 23n IV NE	3	PAMPA DEL OSO 23m I NO	4	ALTO MIRICHARO 23m I NE	5	MIRICHARO 23n IV NO	6	LAS PALMAS 23n IV NE	7	SAN JUAN DE CHEMI 23n I NO	8	SONDOBENI 23n I NE	9	PALOMAR 23n IV NO	10	MATERIATO 23n IV NE	11	RIO SHMA 23n I NO	12	RIO MASAROBEN 23n I NE												
13	MARANIAL 23n IV SO	14	VITOC 23m IV SE	15	RIO SHIMAYACU 23m I SO	16	RIO ALADINO 23m I SE	17	RIO AITE 23n IV SO	18	BAJO HUACHARI 23n IV SE	19	SATIPO (NORTE) 23n I SO	20	CASHINGARI 23n I SE	21	PANGA 23n IV SO	22	PUERTO OCOPA 23n IV SE	23	PUERTO PRADO 23n I SO	24	RIO TAMBÓ 23n I SE												
25	*MARATHOC 23m III NO	26	MONDAMBA 23m III NE	27	LAGUNAS MARANCOCCHA 23m II NO	28	COROLLERA PUY PUY 23m II NE	29	RIO ANTUYO 23n III NO	30	SANTA IRENE ALTO 23n III NE	31	SATIPO (SURI) 23n II NO	32	MAZAMARI 23n II NE	33	SAN JOSE DE MIRAFLORES 23n III NO	34	ALTO SAURENI 23n III NE	35	SHAUURENI 23n II NO	36	RIO PIETÓN 23n II NE												
37	TAMBILLO 23m III SO	38	CHACAYBABA 23m III SE	39	RIO COMAS 23m II SO	40	RIO CHAGUAS 23m II SE	41	CARRIZAL 23n III SO	42	MARIPOSA 23n III SE	43	SANTA CLARA 23n II SO	44	LAYLLA 23n II SE	45	SAN MARTIN DE PANCOA 23n III SO	46	ALTO MATZURINARI 23n III SE	47	MATZURINARI 23n II SO	48	CHUURENI 23n II SE												
				49	SOCOS 24n IV NO	50	HUANCACHAY 24n IV NE	51	JATUN HUASI 24n I NO	52	RIO SAN RAMON 24n I NE	53	CHUICÓN 24n IV SO	54	ANDAMARCA 24n IV SE	55	ALEGRIA 24n I SO	56	RIO PALIA 24n I SE	57	HARWACHAY 24n III NO	58	STO DOMINGO DE ACOBAMBA 24n III NE	59	HUALCABA 24n II NO	60	PUCUTA 24n II NE	61	LANPA 24n III SO	62	OTORONGO 24n III SE	63	TUMCA 24n II SO	64	SINACOMA 24n II SE

Provisional sheet number

Upper: Sheet name

Lower: Sheet number

6. VIEWS ON THE FIFTH YEAR WORK

Drafting on the remained 16 sections and printing of 64 sheets (1000 copies each) will be scheduled in the fifth year work.

(1) Drafting

As drafting on remained 16 sheets is scheduled to be lasted from the fourth year stage without any change of specifications, no particular remark is to be paid. However, it is important to execute drafting paying attentions to matters pointed out in inspection. It is assumed to be required that a final check on all completed manuscripts would be conducted by IGN before printing starts.

(2) Printing

After the color matching, final printing should be carried out carefully without any error such as deviation of color, etc.

7. IMPRESSION

Steep mountains of the Andes run in southern part of the project area and in eastern part land feature is transformed into jungle extending around upper stream area the Amazon. Natural environment is very strict. As to transportation network, several roads are running mainly in forest area for the purpose of transporting forest products, fruits and other agricultural products. However, those roads are not passable through the year due to inadequate maintenance. Regarding collection of data on towns or villages, it was possible to access by vehicle from Satipo to Andamarca, a center of southern part of mountainous district. However, there exists no road crossing the mountainous district situated in good accessibility of vehicles to reach Acobamba from Andamarca. Therefore necessary field information in those areas was collected on foot. Inter-transportation for villages scattered along Ena river was improved by opening of new road in February 1985 to Puerto ocopa, the confluent point of Perene river and Panga river. Only small size aircrafts were available transportation to those area before opening of the road. Further extension of the road toward the lower stream were planned. It seemed that development of central jungle

(selva central) was proceeded firmly. However, as a matter of fact, planning of development projects are interrupted by a lack of appropriate maps for planning. Therefore, it is deeply expected to accomplish the project.

The field work was able to be achieved on time schedule, being fully collaborated by IGN and other governmental agencies of Peru. It is convinced that a lot of things such as surveying technology, know-how on control and management of project implementation, etc. are transferred to Peru through the project. Then, the area except 12,070 km² mapped by JICA have been authorized to be plotted by the government of Peru within the coverage of 31,250 km² where aerial photography was executed.

In such envisioned project, ground control point survey has been already planned. In standpoints of technical transfer, those are very pleasant things. It is desired that the entire coverage of those national base map is furnished immediately in order to contribute, in together with the maps prepared by the government of Japan, to development of these vast district.

APPENDIX

1. Field Survey Itinerary
2. Minutes

1. Field survey itinerary

Jul. 4, 1985: Nagashima (Deputy Leader), Harada (Chief surveyor), and Toyooka (Staff member) left Japan for Peru.

Jul. 5: The above three staff members arrived in Lima and visited Embassy of Japan (courtesy call), JICA Lima office, and Geographical Survey Institute (IGN), Peru. They explained outline of work in the fourth year stage to IGN, and conferred with.

8: Held a meeting with IGN.

14: Morita (staff member) and four others left Japan for Peru.

15: The above five staff members arrived in Lima and made the necessary arrangements with JICA Lima office.

19: Nagashima and seven others left Lima and arrived at Satipo.

20: Opened field office in Satipo.

31: Morita and two others left Satipo and arrived at San Ramón.

Aug. 3: Morita and two others left San Ramón and arrived at Satipo.

7: Harada and one other staff member left Satipo and arrived at Andamarca.

9: Harada and other staff member left Andamarca and arrived at Satipo.

12: Morita and one other staff member left Satipo and arrived at Huancayo.

14: Morita and one other left Huancayo and arrived at Satipo.

17: Closed field office.

- 18: Nagashima and seven others left Satipo and arrived at Lima.
 - 19: Held a meeting with the IGN.
 - 23: Nakano (staff member) left Japan.
 - 24: Nakano arrived at Lima. Morita and four others left Lima.
 - 26: Held a meeting with the IGN. Morita and four others arrived at Narita.
 - 28: Hidenao Takahashi (Head of the Inspecting Division, Topographic Department, Geographical Survey Institute), Yoshikazu Yamada (JICA), and Masayoshi Takasaki (Leader) left Japan and arrived at Lima.
 - 29: Visited Embassy of Japan (courtesy call), JICA Lima office, and IGN.
 - 30: Takahashi, Yamada, Takasaki (Leader) and two others visited the project site by land from Lima to Satipo.
- Sep. 1: The above five members turned back to Lima by land.
- 2: Held a meeting with IGN.
 - 3: Held a meeting with IGN. Nakano and one other staff member left Lima.
 - 4: Held a meeting with IGN.
 - 5: Signed the minutes with IGN. Nakano and the other staff member arrived at Narita.
 - 6: Visited Embassy of Japan, JICA Lima office and IGN
 - 7: Takahashi and Yamada, Takasaki and two others left Lima.
 - 10: The above five staff members arrived at Narita.

2. Minutes

TOPOGRAPHIC MAPPING PROJECT OF SATIPO AREA BETWEEN THE JAPAN INTERNATIONAL COOPERATION AGENCY AND THE GOVERNMENT OF PERU

MINUTES OF THE MEETINGS BETWEEN THE JAPAN INTERNATIONAL COOPERATION AGENCY AND THE INSTITUTO GEOGRAFICO NACIONAL

In Lima, the capital of the Republic of Peru, meetings were held from the 29th August to 5th September, 1985, in the office of the Instituto Geografico Nacional (to be referred to as IGN), between the Survey Mission sent by the Japan International Cooperation Agency (to be referred to as JICA) and the IGN.

Its purpose was to report the work of the 4th year and to set up the guidelines for the work for the 5th year.

After the exchange of greetings, the meetings were held in an open and friendly atmosphere from beginning to end.

Main Items as follows agreed by both parties :

1. The JICA Mission explained to IGN the accomplished and remained works in the 4th year shown as follows, and IGN agreed to it.
 - (1) Work completed in the 4th year
 - (a) Compilation 12,070 Km² (64 sheets)
 - (b) Field Completion 12,070 Km²
 - (2) Work to be carried out successively in the 4th year
 - (a) Color Separation Drafting 9,053 Km² (48 sheets)
2. The Mission compile names of towns, rivers, lakes and ponds, mountains, etc. to be shown in the final topographic maps, based on classified by IGN.
3. The names of the map sheets shown are those which were decided by IGN.
4. The size of map sheet is 81 cm. large vertical, and 61 cm. wide.
5. IGN strongly requested to have a part of the accomplished data of this project as soon as possible, to make the maps in the successive area by their own techniques which were transferred by

the Mission through this project.

The Mission replied that a part of them which was not required in further work in Japan was submitted to IGN as a part of the final products. (Appendix A)

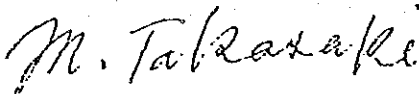
6. The Mission explained to IGN about the plan for the 5th year work as follows and IGN agreed to it.

(1) Working plan for the 5th year (tentative schedule)

(a) Color Separation drafting 3,017 Km2 (16 sheets)

(b) Printing 64 sheets x 1,000 pieces

7. IGN will arrange necessary procedures for JICA'S training in JAPAN in close contact with JICA Lima office as soon as possible.



Mr. MASAYOSHI TAKASAKI

Leader

JICA Mission



Jorge ROSALES VIERA

General Brigadier, Director

IGN

Appendix A

List of Products turn over

I. Aerial photo

- | | |
|------------------------|----------|
| 1 Original negatives | 2 rolls |
| 2 Contact-paper prints | 1 set |
| 3 Photo Index sheets | 3 sheets |

II. Geodetic Survey

- | | |
|---|----------|
| 1 Horizontal control and
Vertical control result | 1 volume |
| 2 Description of points | 1 volume |

III. Cartographic Survey

- | | |
|---|-----------|
| 1 Pricked photos and Identified
photos | 2 volumes |
| 2 Diapositives | 1 set |
| 3 Aerial triangulation data | 1 volume |

IV. Others

- | | |
|------------------------------|----------|
| 1 Materials (existing data) | 1 volume |
| 2 Setting of monument photos | 1 volume |

M.
H.

LIST OF ATTENDANTS

JAPANESE SIDE

1. Japanese Government

Mr. Hidenao TAKAHASHI

Technical Advisor

Mr. Yoshikazu YAMADA

Advisor

2. Embassy of Japan

Mr. Iori FUJITA

First Secretary

3. JICA Lima-office

Mr. Teruki SASANO

Resident Representative
in PERU

4. JICA Mission

Mr. Masayoshi TAKASAKI

Leader

Mr. Toshimasa NAGASHIMA

Deputy Leader

Mr. Toshiyuki HARADA

Member

PERUVIAN SIDE

1. IGN

Brigadier General Jorge ROSALES VIERA

Director IGN

Colonel Alejandro WENDORFF RODRIGUEZ

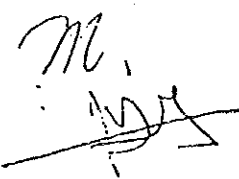
Sub-Director IGN

LT Colonel Victor MONTOYA ASTULLE

Chief of the photogrammetry Dept, IGN

Captain Juan PEÑARRIETA DE CORDOVA

Chief of the Aerotriangulation Sect IGN



JICA