Ⅲ MICROFILMING GENERAL SPECIFICATIONS(SAMPLE)

Chap. 1 GENERAL RULES

Art. 1 Scope of application

1. This specification prescribes the general appli-tion of the microfilming of documents and drawings, etc. which are carried out by the Directorate of Irrigation (DOI) through the Construction Guidance Service Center (CGSC).

   All plovidion that are not prescribed in this specification (depends on special specification, etc.) should be arranged separately.

2. These specifications are applied to the works for making the microfilm jacket, setting the roll film of 16 mm to the jacket, and the aperture card, setting the roll film of 35 mm to the aperture card.

3. The items which are stated in the special specifi-cations are preference to these specifications.

Art. 2 DEFINITION OF TERM

1. Definition of the term in these specification are as follows.

1) "Supervisor" means a personnel staff belongs the monitoring unit and or assigned as a supervisor by the chief of monitoring unit.

2) "Instruction" means the order given by supervisor for the necessary work items to be implementated by the person in charge of microfilming works.

3) "Acceptance" means approval to be consented by

the supervisor for any matters proposed by the person in charge of the microfilming works.

4) "Consultation" means discussion between the supervisor and the person in charge of the microfilming works to consult any matters on an equal stand point.

Art. 3 Standard reference

1. The microfilming works shall be carried out based, upon these specifications, otherwise the items which are not stated in the specifications will be based upon the JIS regarding microfilm. (the JIS stands for the Japanese Industrial Standard).

Art. 4 Treatment of data and production

1. It should be taken enough care to avoid staining injuring and loss of documents (here in after called the data) used for photograph, such as documents, drawings and maps, etc.
2. The products of microfilms which were recorded or reproduced and passed the inspection such as prescribed in the specification, should be treated according to the standard storage method for microfilming.
3. The person in charge of microfilming is strictery prohibited to hand over any documents or information to a third party and or for personal use of any of the documents which are handled during the process of microfilming works.

Art. 5 Microfilm making

1. Microfilm making procedure is commenced according to the order form photograph which is shown in Chap. 5 Art.28 and completed microfilm product should be accompanied by inspection report which is shown in Chap. 5 Art.28.

Art. 6 Professional engineer

1. The microfilming works should be carried out by skill professional to gain a good quality products.

Art. 7 Consultation

1. For microfilming works if any questions or programs arise they should be informed immediately to the supervisor and should be adjust his according to the result of consultation.

Chap. 2 FORM STANDARD AND QUALITY OF MICROFILM

Art. 8 Form of microfilm

1. Forms of microfilm are as follows

1) Type I: Silver based microfilm

This film is camera microfilm and has transparent line image (negative).

2) Type II: Diazofilm

This film is reprinted from microfilm type I (negative).

Art. 9 Standard of microfilm

1. Standard of microfilm type I which is classified by size is shown in following table.

1) Roll microfilm

Form	Standard	Size in frame		Remarks
		full size	half size	
35mm Roll	Non Perforation 35mm wide	32x45mm	32x22,5mm	For photograph of drawings
16mm Roll	Non Perforation 16mm wide	15x21mm	15x10,5mm	For photograph of documents

2) Jacket for roll film keeping

Form	Size	Number of rows
For 35 mm roll	4 x 6 inch	2 rows
For 16 mm roll	4 x 6 inch	5 rows

3) Aperturecard

Form	Card size	Aperture size
For 35 mm Aperturecard	187.32 x 82.55mm	30.4 x 41 mm

2. Standard classified by form of the microfilm of type II accords to the standard of type I mentioned in item 1.

3. In the case of microfilm reprinting, microfilm type II is directly reproduce from microfilm jacket in to microfi

Form	Size	Remarks
of type II	148 x 105 mm	For reprint of document jacket

Art. 10 Quality of microfilm

1. High resolution transparent film is used for the camera microfilm of type I and its safety accords to JIS K-7558.

2. High resolution type diaso microfilm is used for the reprinted microfilm of type II

Chap. 3 STANDARD OF WORKS

Art. 11 Arrangement of data

1. The data to be taken for photograph purpose should confirm between the order and the contents and for data no pages having they should be numbered orderly under left corner of the data.
2. The data having creased or crinkles are pressed with a iron before photographing.
3. A hotchkiss . or a clip, etc. are taken off before photographing.
4. Bind data which is difficult be photographed under the normal conditions should be broken into loose pages before photographing. And this matter should be done with the acceptance of the supervisor.
5. The data which have been photographed are inprinciple restored to the original conditions.

Art. 12 Lay out of microfilm

1. The operator should prepare the lay out table of data and get the acceptance of supervisor according to the instruction document of photograph which are state in Chap. 5 Art. 28.
   The standard of the lay out table of photograph is shown as items 2, and 3 below.

2. 16mm microfilm jacket

MICROFIIM NUMBER										SHEET NUMBER	
Start	Title	Data 1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	-	-	-	-	-
-	Drawing Target		-	-	-						
							THE END				CONT →

CONT →

1) TITLE

With instruction of supervisor, TITLE is typed according to the rule stated in Art.17.

2) START and TEST CHART

At start of photograph of one set data.

START and TEST CHART which are prescribed in Art.18 are photographed.

For TEST CHART, the figure A of JIS Z 6008-1982 is photographed.

3) Other TARGETS

Other TARGETS are photographed according to the

rules stated in Art.18.

4) Data

The data are photographed with half size film taking the reduction ratio which are stated in Art.13.

In case the lay out of data is not possible to be occupied one space at the end of the frame for one pair of separated data, the last space should be made blank and the pair of separated data should be placed side by side starting from the beginning of next row.

5) DRAWING TARGET

In case the large scale data (drawings or map, etc) which are impossible to be photographed separately, the data should be photographed in 35mm film.
The target showing Aperture card number should be photographed in the 16 mm microfilm jacket.

6) END TARGET

When the photographing works of one set data is to be ended, the END TARGET is photographed according to the rule stated in Art.18.

7) CONTINUE TARGET

In case of one set data over five rows and one necessary for to be photographed successively, the CONTINUE TARGET is photographed in the last frame and in the first frame of the next sheet according to the rule stated in Art.18.

3) Photograph

The data of drawings and maps are photographed in two inch pull-down with standard reduction ratio shown in Art.13.

Art. 13 Standard reduction ratio of photograph

1. Standard reduction ratio of photograph for micro-film is shown in the following table.

1) For drawings and maps, etc.

A line

Line No.	Size(mm)	Reduction ratio	Line No.	Size (mm)	Reduction ratio
A0	841x1189	1/30	A3	297 x 420	1/15
A1	594x 841	1/21.2	A4	210 x 297	1/15
A2	420x 594	1/15	folio	216 x 330	1/15

2) For documents, etc.

A line

Line No.	Size (mm)	Reduction ratio	Remarks
A	297 x 420	1/25	Divided into 2 frames
A	210 x 297	1/25	
Folio	216 x 330	1/25	

B line

Line No.	Size (mm)	Reduction ratio	Remarks
B3	364 x 515	1/25	Divided into 2 frames
B4	257 x 364	1/25	
B5	182 x 257	1/25	

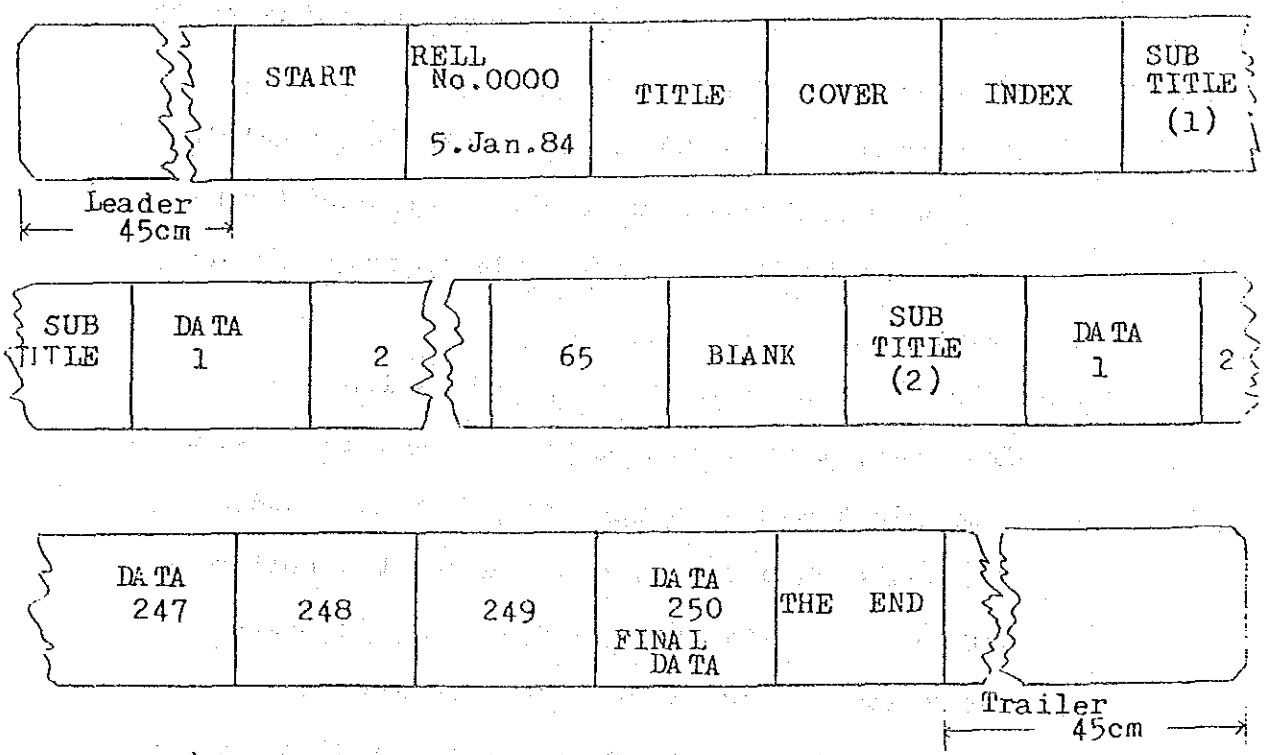
2. For the reduction ratio of photograph of data having the size without standard in A line or B line, the standard reduction ratio of one step above the approximate original data size will be used.

3. Aperturecard of 35mm microfilm

1) In aperturedard type, the microfilms arranged by Roll system at first and then each size frame except the roll title is mounted to one aperture-card.

2) For mounting to the aperturecard, semi-out mounter is used.

4. Roll film lay out



1) TITLE

With the instruction of supervisor, according to Art.17 TITLE is printed.

2) START and TEST CHART

To Commence the photograph of one set data, START TARGET and TEST CHART are photographed.

For TEST CHART, figure A of JIS Z 6008 - 1982 is photographed.

Art. 14 Frame span

1. The standard of film photographed and developed is shown in following table.

Size of film	Size of frame	Frame span
33 mm roll	Full size	6 mm
16 mm roll	A half size	1 mm

Art. 15 Photograph

1. Photograph method should be done according to the following procedures.

1) Professionil operator should take in principle, photograph of one kind of data for each frame according to the lay out table approved by supervisor.

2) When the data having scale indication such as drawings, maps etc, are transparent scale with 1 mm black marks in them for shall be used. The scale should be located under the bottom side of the data when photographed is taken.

3) The maximum size of drawings and maps etc, for photographed is a frame is A0 or B1 size, while B4 is the maximum allow able size of documents, etc. And then the data having special scale more big than these data, it should be photographed separately in spite of the provision stated in rule (1).

4) For separated photograph, the original data should at least 100 mm overlap each other, and for multiple separation (for instance 1/n, 2/n .....n/n etc) The original data should also overlap at any parts of separated joints at least 100 mm above each other.

5) In spite of the rule of (1) correlated small data is to be photographed together with several sheets in a frame within the range of standard reduction ratio prescribed in Art. 13.

6) When there is a blank page put the following notes "from - to - is blank" but the bottom page of last page of recorded, and the blank page, is not necessary to photograph.

7) When drawings and maps etc, are photographed with 35 mm film, the vertical center line of the frame should well match with vertical center line of the original data to be pothograph.

2. Photograph work is take in considering following items.

1) The uniform and proper lighting should be arrange to gainer the density and resolving power pre - cribed in Art. 22.

2) When two photograph is taken for the data binded with open wide two pages in some time it should be pressed down to avoid rising of center part.

Art. 16 Microfilm reproduction

1. For microfilm reproduction I type film passed the inspection prescribed in chap. 4 is used.

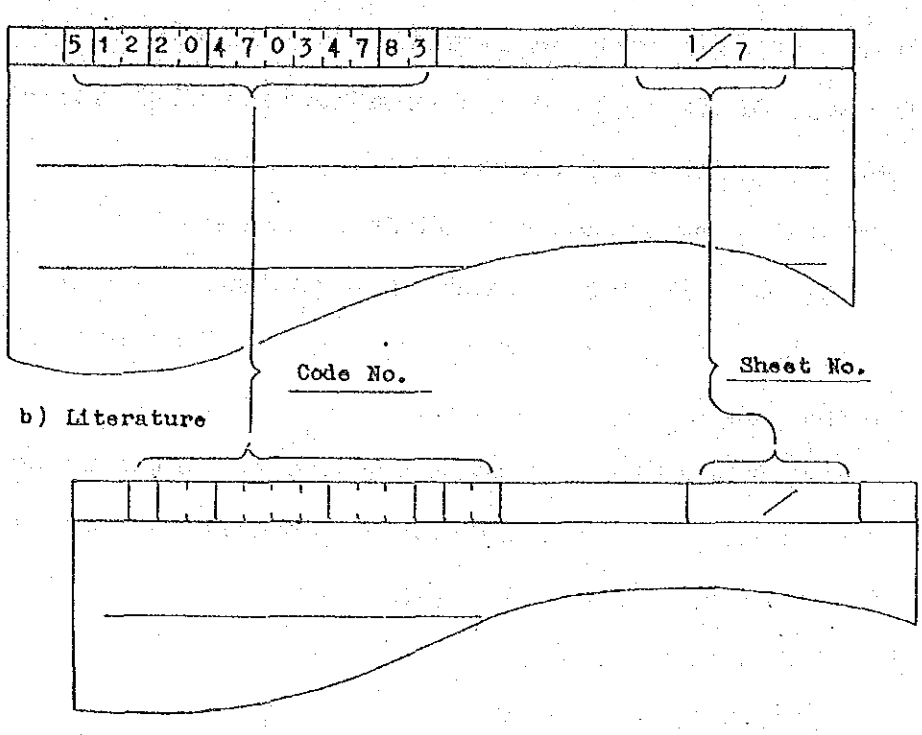
Art. 17 Making title

1. Title is typed on upside of the jacket.
2. For aperture card, it should be type in the pre-cribed column on the card.
3. Title is made according to following title with the order of a supervisor.

Title of microfiles

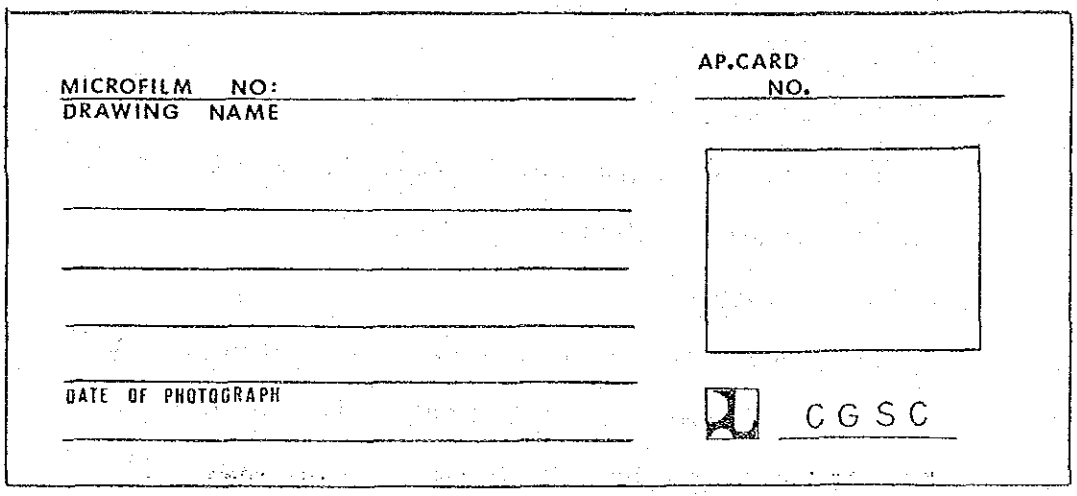
1) JACKET

a) The data concerned with the project or all other organization.



b) Literature

2) APERTURE CARD



Art. 18 Target

1. Principally photograph targets should be made positive on film and the size letter should be made at least 1 mm on the film.
2. Targets of every kind are standardized with styles shown in following items.

   1) START target and TEST CHART

   "START" and "TEST CHART" are photographed in some time. (Fig.- 1, Fig.- 2)

   2) CONTINUED target

   "CONT" and " " mark are photographed in some in the last frame and the first frame in continued film. (Fig.- 3, Fig.- 4)

   3) ROLL NUMBER target

   "ROLL NUMBER" and date of photograph are used for photographing by roll type of 35 mm film (Fig.- 5)

   4) Title target

   "TITLE" is photographed in next frame of the start target. (Fig.- 6, Fig.- 7)

   5) DRAWING target

   It is photographed to indicate the identification number of large size drawings which is not possi- to be photographed by 16 mm film. (Fig.- 8)

   6) CONTENTS INDICATION target

   The target shows contents of data which are photographed with every data in order to make clear the contents of data and make easy to index. (Fig.- 9)

7) REMARK target

In a case that some parts of data is not available to photograph owing to missing page, damage and lack of clearness, if specially required it is photographed just next to the frame of the concerned data showing name of title, name of document, number of page, and other remarks notes etc. (Fig.- 10, Fig.- 11)

8) END target

"THE END" and the date of photograph are indicated at the end of photograph of one set data. (Fig.- 12, Fig.- 13)

TARGETS

Fig.- 1 START TARGET and TEST CHART (35 mm film)

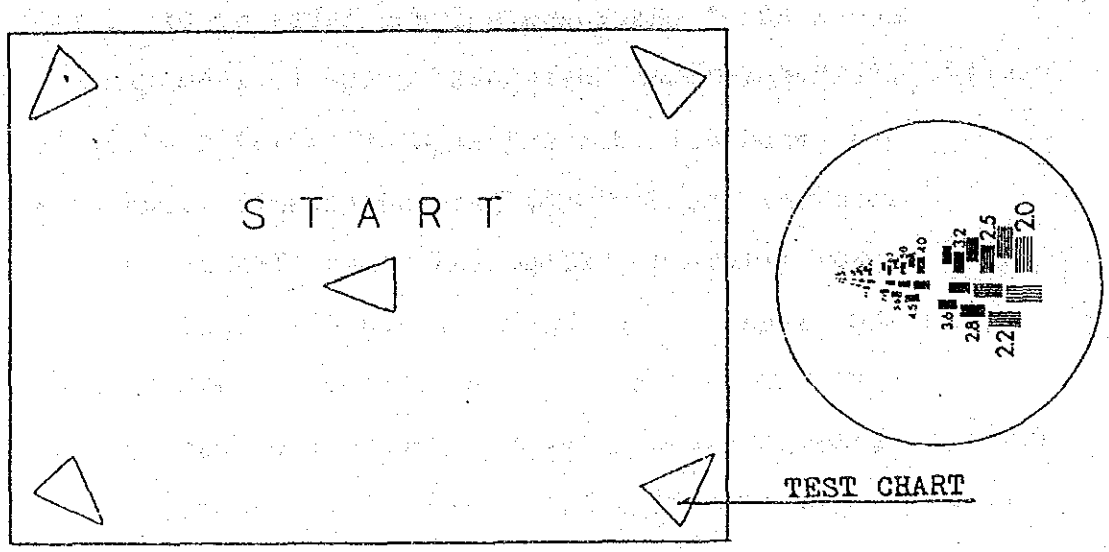


Fig.- 2 START TARGET and TEST CHART (16 mm film)

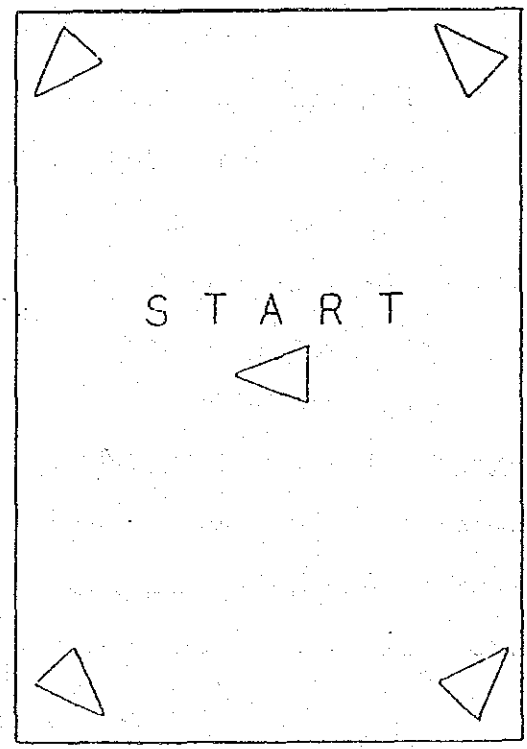


Fig.- 3 CONTINUED TARGET (35 mm film)

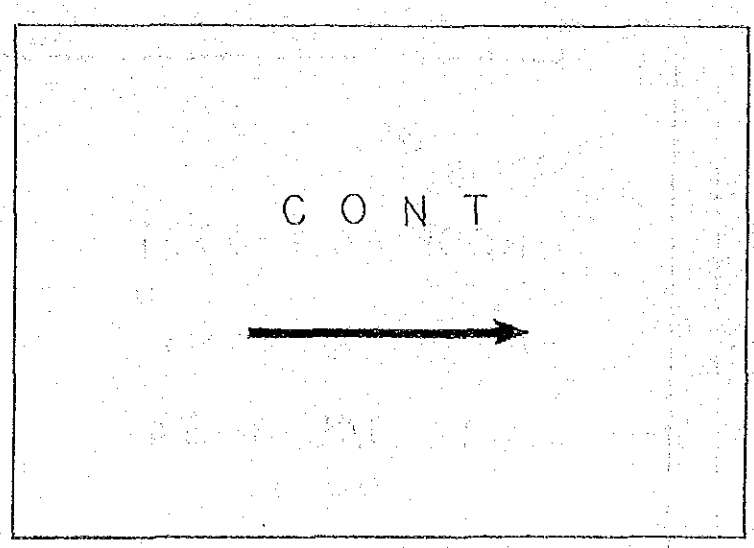


Fig.- 4 CONTINUED TARGET (16 mm film)

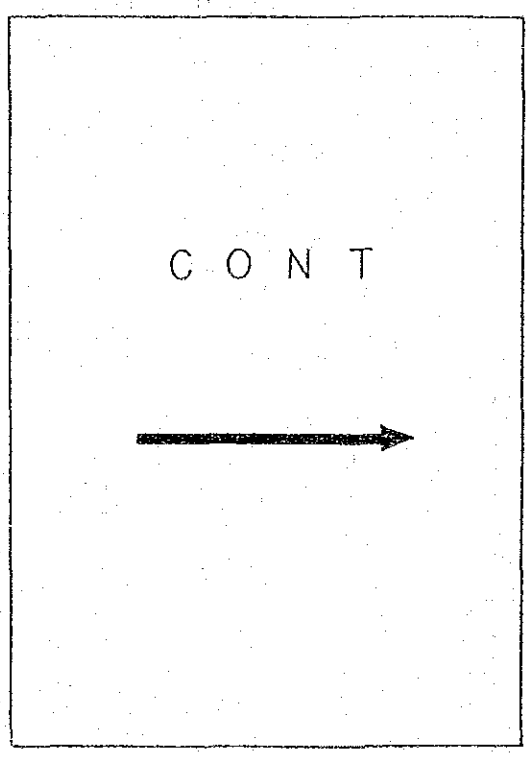


Fig.- 5 ROLL NUMBER TARGET (35 mm film)

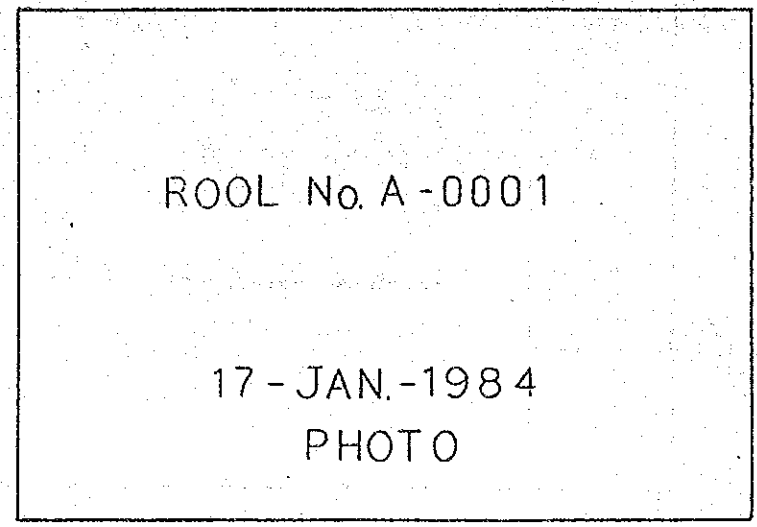


Fig.- 6 TITLE TARGET (35 mm film)

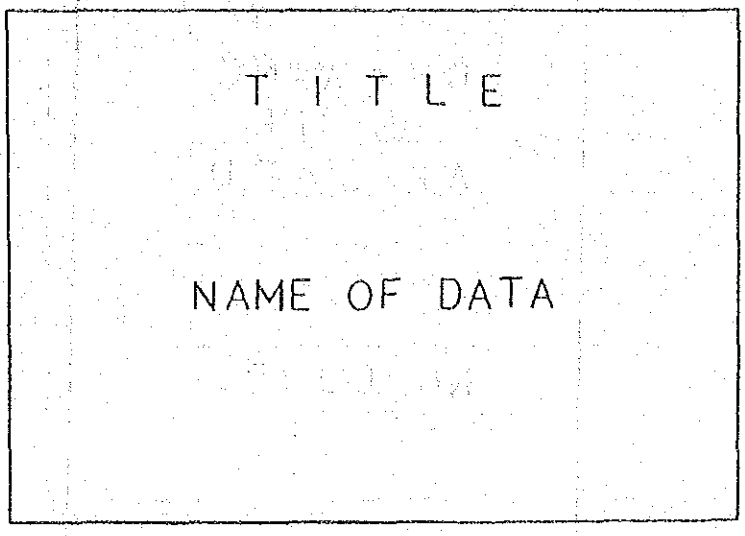


Fig.- 7 TITLE TARGET (16 mm film)

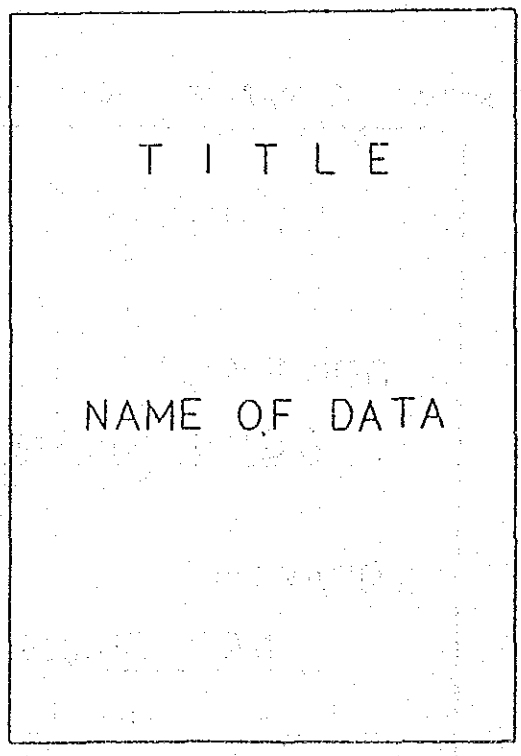


Fig.- 8 DRAWING TARGET (16 mm film)

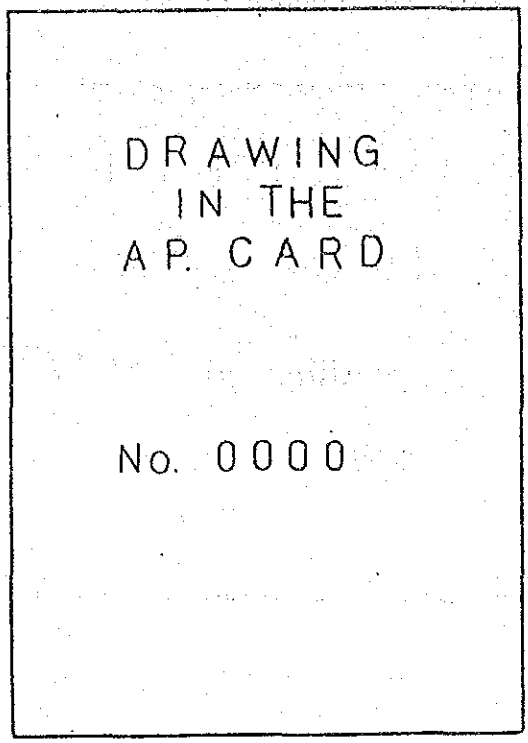


Fig.- 9 CONTENTS INDICATION TARGET (16 mm film)

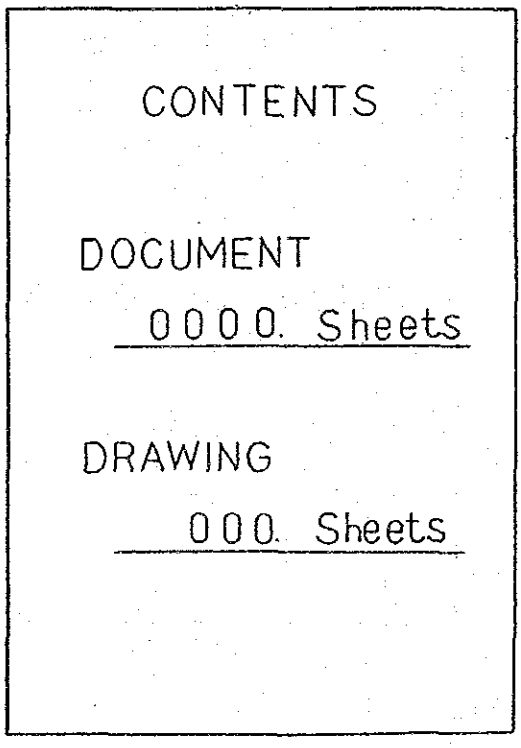


Fig.- 10 REMARK TARGET (35 mm film)

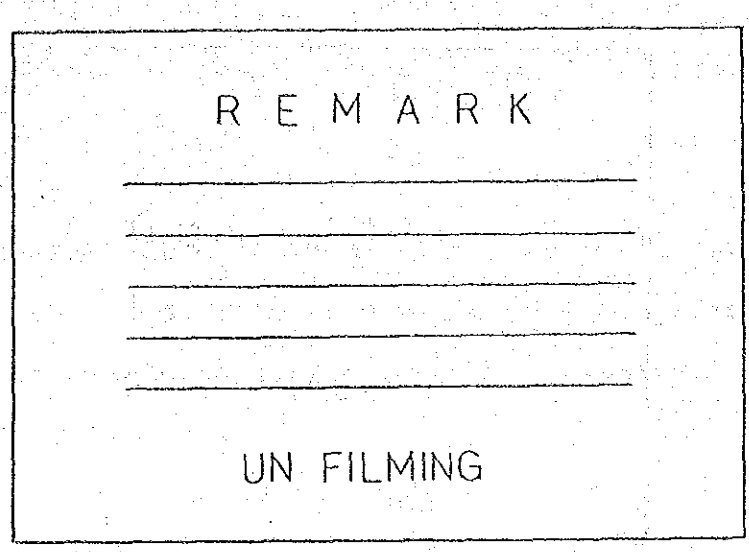


Fig.- 11 REMARK TARGET (16 mm film)

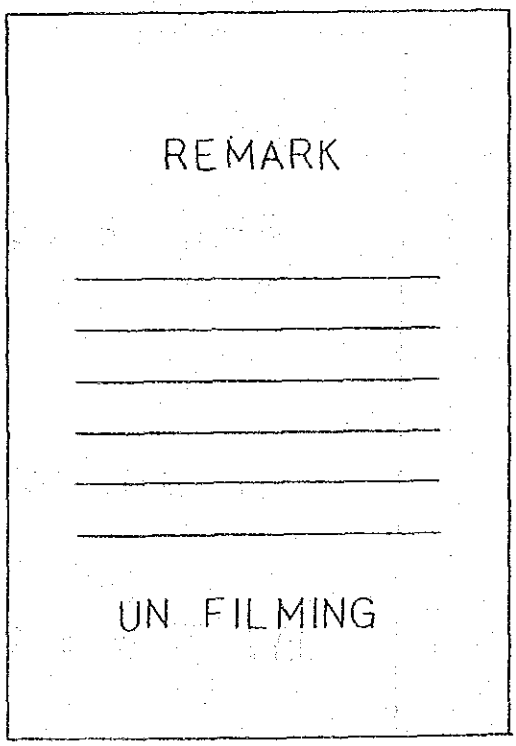


Fig.- 12 THE END TARGET (35 mm film)

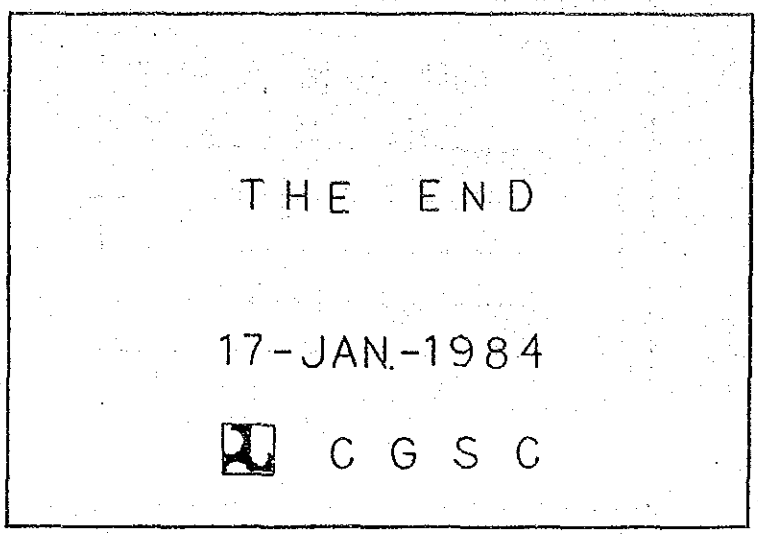
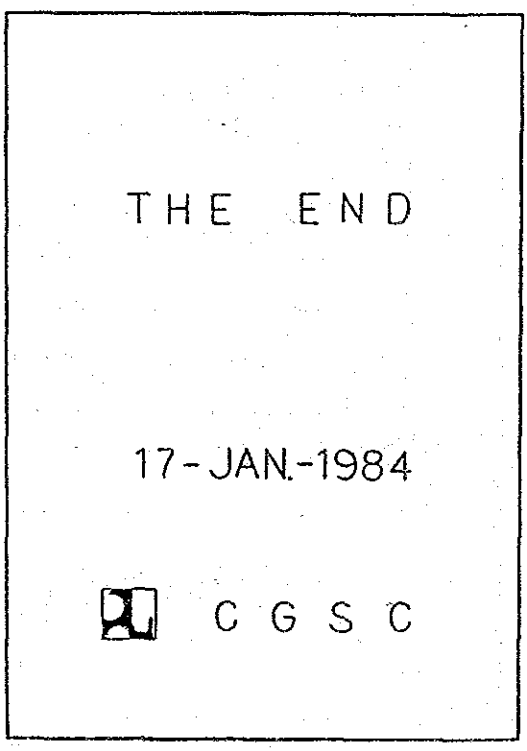


Fig.- 13 THE END TARGET (16 mm film)



Art. 19 Film processing

For film processing an exclusive treatment by automatic developing machine should be applied.

Art. 20 Process of film

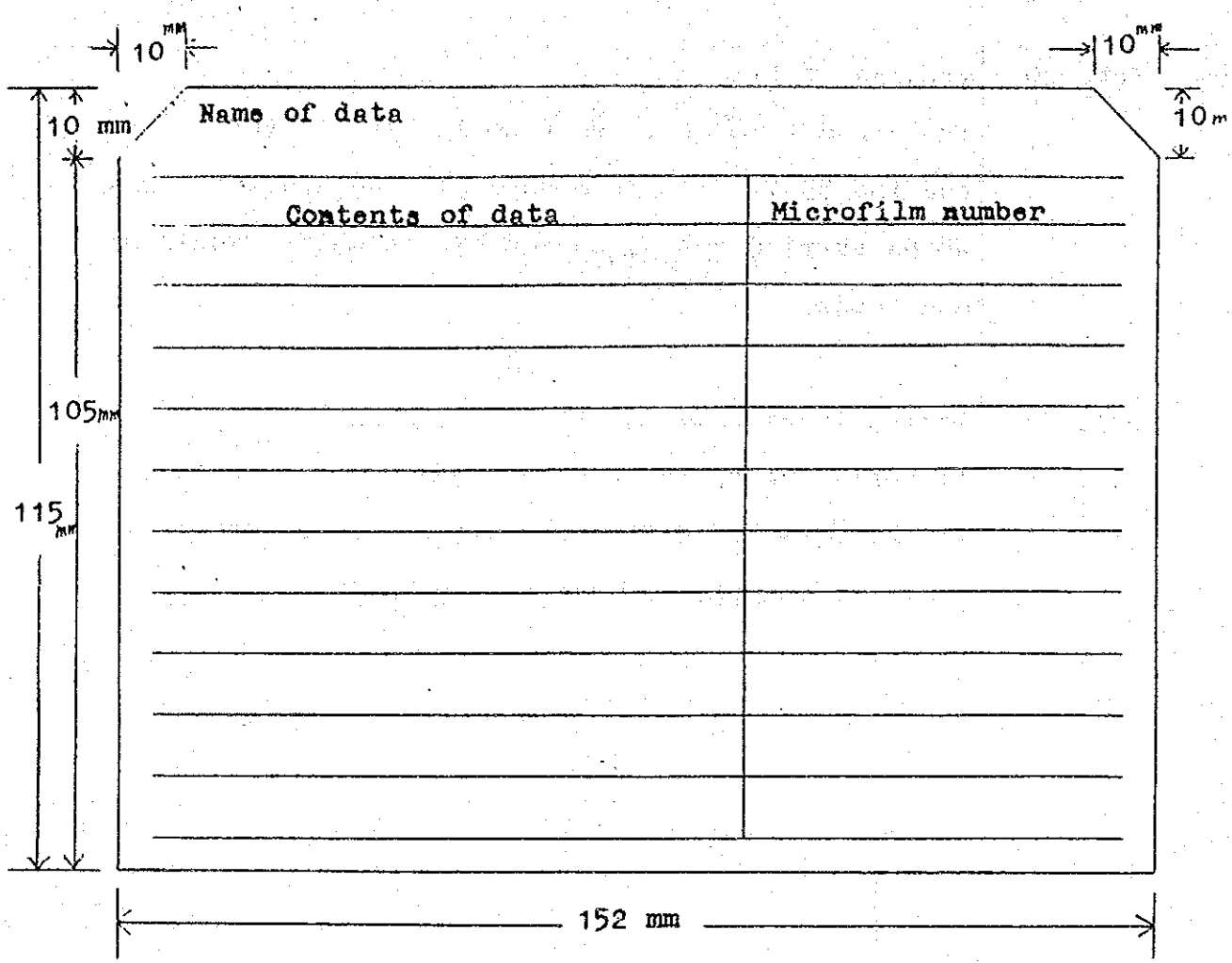
Processed film of 16 mm film is kept in the jacket and the 35 mm film is mounted on the aperture card to be carried out processed by exclusive machinery and tools.

Art. 21 Making index card

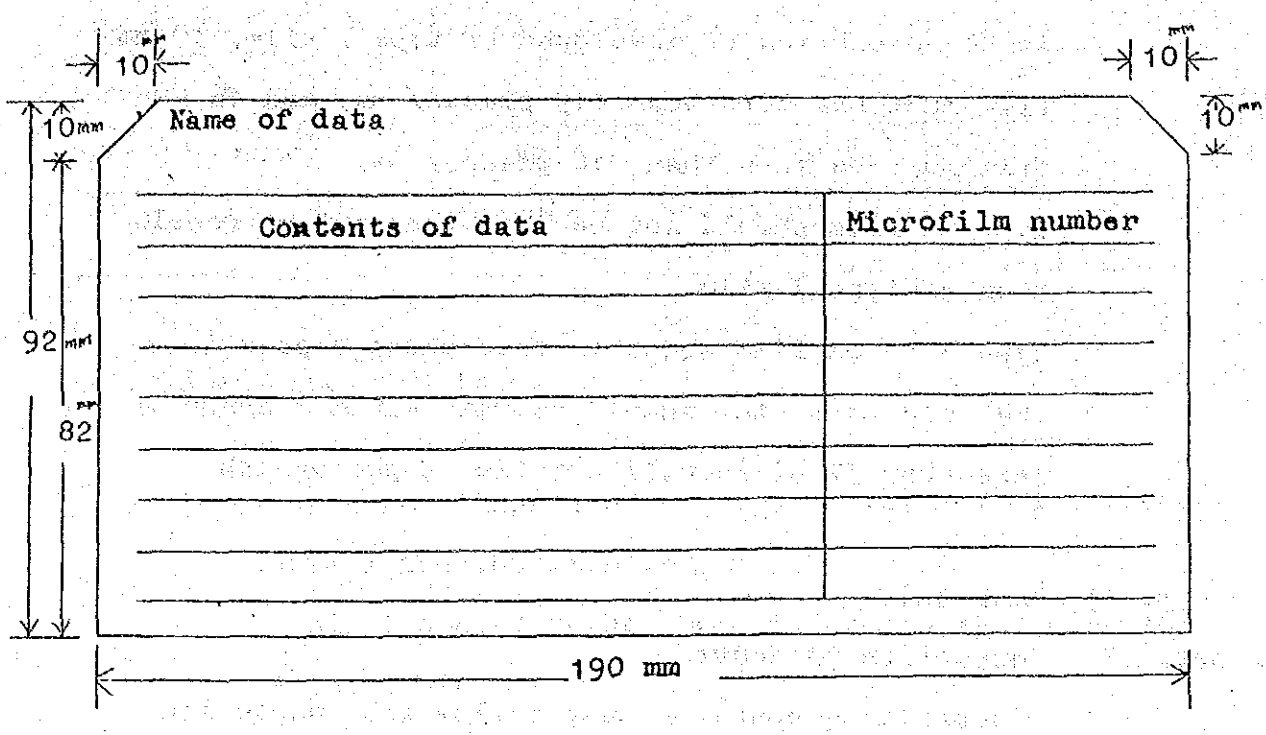
Microfilming operator makes index card as a list of photographed data for every set data, the form is refer to Fig.- 13.

Fig.- 13 Index card

a) Apply of Jacket



b) Apply of aperture card



Art. 22 Requisite condition of microfilm

1. Back ground density of developed film of type I should be in range of 0.8 - 1.1, by densito meter.
2. As to resolution of developed of type I film, 35 mm film must has more than 119 pieces/ mm, and 16 mm film must be more than 110 pieces/ mm.
   Type II film should not be less than 10% of resolution of type I film.
3. Type I 35 mm film which is used photographed drawings and maps etc, should be made minimum error of less than 3% of reduction ratio of photograph.

Chap. 4 Inspection

Art. 23 Inspection procedure

1. Microfilming operator must follow all inspection procedures prescribed in this specification unless otherwise precribed in special specification.
2. Also the supervisor should attend to all the in - spections conducted by operator and if necessary to inspect himself according to the neeeds.

Art. 24 Inspection report

Result of inspection based on this specification is recorded in inspection report and should be submited to supervisor.

Art. 25 Inspection device and equipment

1. Inspection device and equipment to perform correctly all inspection procedure prescribed in this spec - ification, should be provided.

2. List of device and equipment

NAME	CONTENT
Reader	Inspection of out side appearance
Inspecter	
Densito meter	Measure of back ground density
Microscope	Measure of resolving power

Art. 26 Inspection item.

1. Inspection item, method, standard and number of sample for inspection of type I film are as follows.

1) Verification with original

All frame is to be photographed in line with lay out table.

2) Out side appearance inspection

Several matters should be avoided such as partially indistinc focus, damage, adherence of alien and other stain, against film of all jackets and aperture cards.

3) Uneveness of development

All film are made to be no uneveness of development.

4) Back ground density

10% of all films are measured, and these value measured should be in a range which are stated in Art. 22.

5) Resolution

All frame of photographed should be test chart is photographed are measured, and the frame should have resolution more than the value prescribed in Art. 22.

6) Residual Silver

Two data are sampled from one rod and tested, and there should be no discolor-reaction.

7) Residual Hypo

Two data are sampled from one rod and tested, and there should be no discolor-reaction.

8) Reduction ratio of photograph

Two data are sampled from one rod and measured and the data should be in range prescribed in Art. 22.

9) Other

Other inspection that are ordered by supervisor should be carried out.

2. For inspection of type II film, only the resolution is inspection.

Art. 27 Rephotograph

1. Film which not passed in inspection stated in former article, should be photographed again or reprinted.

Chap. 5 Form

Art. 28 Form

Form prescribed in this specification is shown as follows.

1.	Order form for microfilming	Form- 1
2.	Inspection report	Form- 2

Form - 1

ORDER FORM OF MICROFILMING

To (supervisor of microfilming)

Order No.

Please to arrange microfilm data
according to the following specification

Name of data				
Kind of data	Contents of data	Numbers of document	Numbers of drawings	* Microfilm number
74				
* Volume of Photograph	Document	Target	Number of sheet	sheet
	Drawings	Target	Number of frame	frame

* Title

Date of order	* Date of completion

Notes: 1) Every sets of data should be accompanied by one order form
2) Mark*to be filled by microfilming staff working

Known by: Chief of Monitoring Unit
(Name/ Signature)

Orderer:
(Name/ Signature)

Approved by: Project Manager
(Name/Signature)

Form-. 2

INSPECTION REPORT

Issuance No.

To Supervisor of Microfilming

Name of Microfilming operator

Signature

Result of inspection for the completed microfilm product is reported as follow

Name of data					Order No.
QUALITY & RD	Used film				
	Resolution	Document			
		Drawings			
	Density	Document			
		Drawings			
	Reduction ratio	error ±	% within		
	Residual silver				
	Residual Hypo				
Shape and out side appearance					
Photograph Machine		Camera			
		Processor			
Volume of photograph		16 mm	Frame	Jacket	Sheet
		35 mm	Frame	AP. Card	Sheet
Others					
Inspector		Signature			
Responsible Engineer		Signature			
*Delivery date					
*Recipient		Signature			

Notes 1) Every rot of film be accompanied by inspection report

11) Mark * to be filled by orderer

Known by: Chief of Monitoring Unit
(Name/ Signature)

Approved by: Project Manager
(Name/ Signature)

Ⅲ　帰　国　報　告　書（3rd）

I．概　要

1，目　的

前回迄に作成した、ＣＧＳＣにおけるマイクロフイルミングシステムに関して、インドネシアの事情に適する様に、調整及び補足をし、システム運営に関して、カウンターパートとマイクロフイルミングスタッフのアクチュアルトレーニングと指導を実施する。

2．スケジュール

日　　程	スケジュール
1984．7．11	東　京　－－－　ジャカルタ
12 〜 18	1．前回迄に作成した、ＣＧＳＣにおけるマイクロフイルミングシステムの、調整及び補足。
7．19 〜 8．20	2．システムオペレーションの、アクチュアルトレーニングと指導。 3．マイクロフイルミングルームのメンテナンスマニアルの作成。
21	4．今後、補強すべき機器、設備の検討。
22	5．処理済マイクロフイルムの、化学的検査方法の指導と、訓練。
23 〜 27	6．報告書の作成。
28	7．関係オフイスに報告。
8．29	ジャカルタ　－－－　東　京

3．業務の概要

カウンターパートの 指導として、 マイクロフイルミングシステムに関する業務を完了した。 その期間の仕事は、下記の通りである。

－マイクロフイルミング設備の、メンテナンスマニアルの作成。
－マイクロフイルミング材料と消耗品の、保存マニアルの作成。
－マイクロフイルミングルームの利用と、管理のマニアルの作成。
－マイクロフイルミングシステムと管理の調整。
－マイクロフイルミング一般仕様書の補足。
－WAY UMPU, WAY RAREM と、TELUK LADA プロジェクトの、実際の資料を使用して、システムオペレーションの、アクチュアルトレーニングの実施。

3．1 マイクロフイルミング設備の、メンテナンスマニアル

CGSCにおける、マイクロフイルミング設備のメンテナンスの、マニアルである。 カウンターパート 及び、マイクロフイルミングスタッフが、行なわねばならない、 毎日のメンテナンスについて、各設備毎に、整備してある。
“マイクロフイルミング設備の、メンテナンスマニアル”の詳細は、Ⅱ．に述べた。

3．2 マイクロフイルミング材料と消耗品の、保存マニアル

マイクロフイルミング材料 及び、消耗品は、化学変化したり、有効期限がある為、保存には、特に注意が必要である。 ここでは各種材料 及び、消耗品についての、適正な保存方法を、整備してある。
“マイクロフイルミング材料と消耗品の、保存マニアル”の詳細は、Ⅲ．に述べた。

3．3 マイクロフイルミングルームの利用と、管理のマニアル

マイクロフイルミングの作業は、大半がマイクロフイルミングルームにて行なわれる。
マイクロフイルミングルームの業務について、整備してある。
“マイクロフイルミングルームの利用と、管理のマニアル”の詳細は、Ⅳ。に述べた。

3．4 “マイクロフイルミングシステムと管理”の調整

前回迄に作成した“マイクロフイルミングシステムと管理”について、（特にコーディングシステムについて）情報システム全体の中で、どこまで調整出来るか イ側の意見を入れて検討した結果、マイクロフイルミングシステムに関しては、其本的には変更しない事とした。 但し、資料分類コードについては、一部分調整 及び、追加を行なう事とした。

新しい“資料分類コード”の詳細は、Ⅴ．に述べた。

3．5　“マイクロフイルミング一般仕様書”の補足

前回迄に作成した“マイクロフイルミング一般仕様書”について、処理後のマイクロフイルムの、化学的検査方法に関して補足した。

この検査は、処理後のマイクロフイルムの、保存適性を調べるものである。マイクロフイルムは、定着　及び、水洗処理が不完全だと、残留銀や残留ハイポが、画像に対して悪影響を及ぼす。　其の結果、マイクロフイルムは変色して長期間の保存が、不可能となる、それ故、この化学的検査は、大変重要な検査である。

“化学的検査方法”の詳細は、Ⅵ．に述べた。

3．6　アクチュアルトレーニング

前回迄に作成し、今回整備、補足をしたマイクロフイルミングシステムの仕様書　及び、各種マニアルに関して、実際の資料を使用して、カウンターパートと、マイクロフイルミング　スタッフの、指導　及び、アクチュアルトレーニング　を実施した。

1）実際の資料を、使用してシステムのオペレーショントレーニング。
2）マイクロフイルミング設備の、メンテナンスに関するトレーニング。
3）処理済みマイクロフイルムの、化学的検査に関するトレーニング。

詳細は、付属参照。

4．勧　告

前回迄に作成した、マイクロフイルミングシステムを、さらに今回整備して、充実したシステムとなった。　しかし、尚一層、インドネシアの事情に適した効果的な運営をする為に、継続して以下の活動をせねばならない。

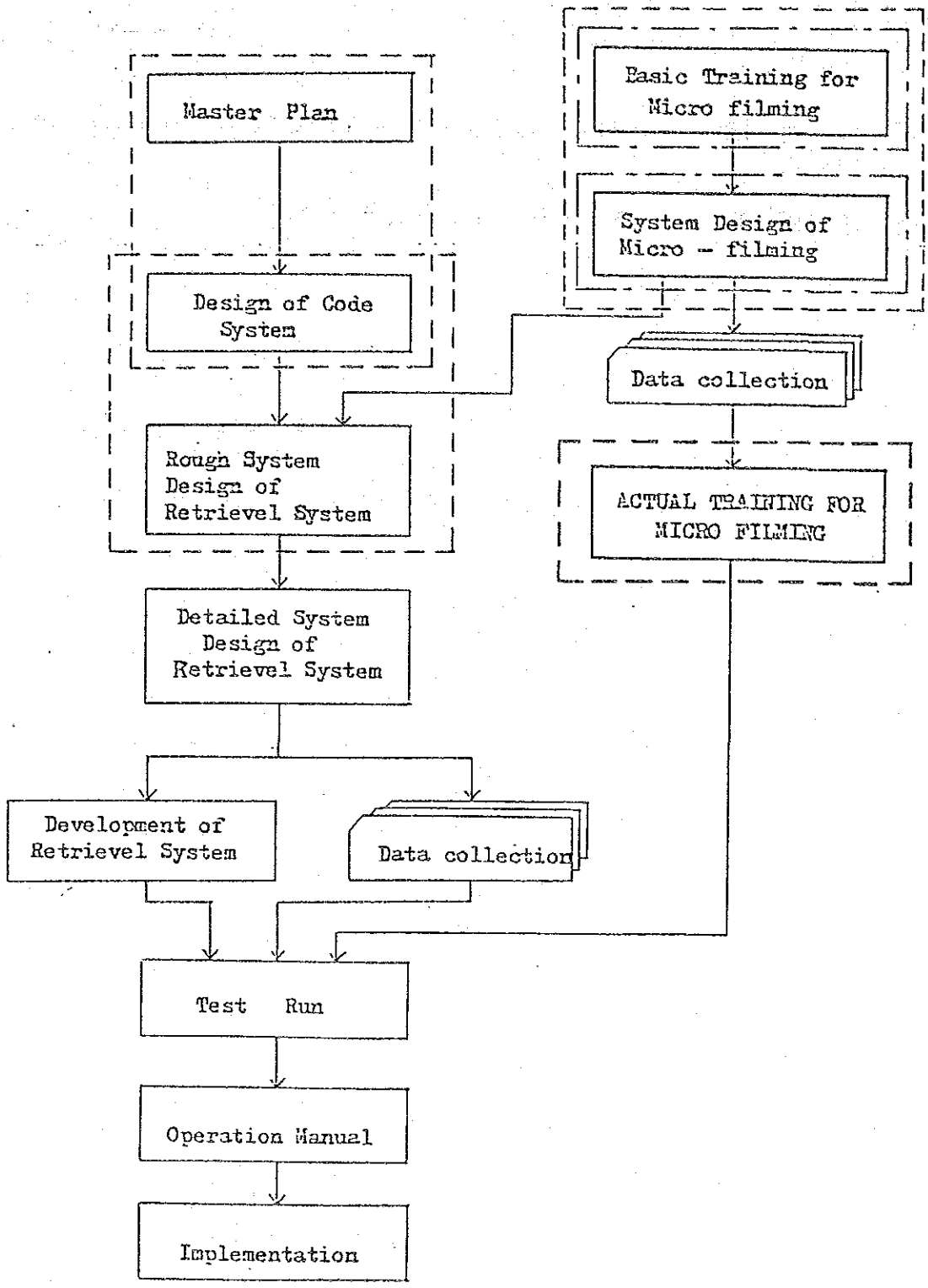
1）今後共、可能な限り、多くの資料を収集し、其の資料を使用して、実際にシステムを運営する。
2）カウンターパート　及び、マイクロフイルミングスタッフの努力により、マイクロフイルミングに関する技術は、完全に移譲出来た。
今後は、カウンターパート　及び、マイクロフイルミングスタッフが、専門的知識を得て、経験を重ねる事により、尚一層充実するであろう。
3）インドネシアの気候、環境下においては、貴重な資料の、撮影済みマイクロフイルムの保管には、充分な注意が必要である。
少なくとも、年一回は、ランダムに引出して、検査する必要がある。
4）マイクロフイルミング設備の、より延命の為に、民間の適当な会社と、年間契約をして、メンテナンスの、委託をする事が望ましい。　其の結果マイクロフイルミング材料　及び、消耗品の調達に関しても、都合が良いであろう。

5) 今後、補強すべき機器及び、設備を検討した結果、検索機付きマイクロフィルム用キャビネットと、専用のコーディングマシンが必要である。
この機器は、CGSCのマイクロフイルミングシステムの運営において、将来、大いに威力を発揮する設備である。

＊ RETRIX-AP9000……¥1，200，000.
＊ CODING MACHINE (A判用) ……¥148，000.
(学 研 製) (日本国内市価)

CONTENTS OF WORKS

Development Flowchart of Technical Information Service System



5. 準　備　期　間　内　訳

準　備　期　間　　昭和59年7月5日から昭和59年7月10日まで

業　務　内　容　　携行機材、資料収集及び準備

以　上

携行資機材購送リスト　　59. 9.

	品　　名	仕　　様	数量	価　　格（単価）
1	ミニコピー　アパーチュアカード	AFCS（2000枚入）	1箱	
2	富士　ジアゾフイルム　M	4208－P7（500枚入）	1箱	
	（ミノルタ　リーダープリンター関係）			
3	RP－407用　感光紙	両極性 297㎜×115m(2本入)	10箱	
4	ーーー〃ーーー　プレミックス	N→P用（1ℓX6本入）	5箱	
5	RP－1824用　PC. Drum		1本	
6	－〃－　Charger　Rine		20本	
7	MFホルダー（マイクロフイルムジャケット）	46352（100枚入）	10箱	
8	コクヨ マイクロフイッシュ用　見出しカード	EY－F10 色 P.B.Y.G（各100枚）	400枚	
9	コクヨ アパーチュアカード用　見出しカード	EY－F11 色 P.B.Y.G（各100枚）	400枚	
10	ナニワ　編集用手袋（写真用）	M　size	20双	
11	ナニワ　シリコンクロス	45㎜X45㎝	10枚	
12	ハクバ　ブロアーブラシ	L　size	5個	

成　果　品

Bekasi, August 28, 1984

Dr. A. Hafied A. Gany BIE,MSc.
Project Manager of Construction
Guidance Service Center D.P.U.

Dear Sir,

It is my pleasure to submit herewith the report on Microfilming system for the construction Guidance Service Center Project.

I would like to take this opportunity to express my sincere appreciation for the warm cooperation and assistance by counterparts and their staffs.

Very truly yours,

M. Aoyagi

Masatomi AOYAGI
Colombo Plan Expert

S U M M A R Y

I. SUMMARY

1. Purpose

1.1 Adjustment and supplement of CGSC Microfilming System according to Indonesian condition.

1.2 Actual training of counterpart and microfilming staffs.
(Refer to Fig - 1)

1.3 Guidance for management of Microfilming system.

2. Schedule

Date	Schedule
Jul. 11. 1984	Tokyo ———— Jakarta
Jul. 12 〜 Jul. 17	1. Adjustment and supplement of CGSC Microfilming system.
Jul. 18 〜 Jul. 20	2. Cuidance and actual training for system operation. 3. Preparation of Maintenance manual for Microfilming room.
Aug. 21	4. Consideration of necessaly additional equipments in future.
Aug. 22	5. Guidance and training for Cemical Inspection method of processed microfilm.
Aug. 23 〜 Aug. 27	6. Preparation of Report.
Aug. 28	7. Report to DOI and JICA
Aug. 29	Jakarta ———— Tokyo.

3. Explanation

Guidance and actual training for counterpart and microfilming staffs had been achieved as follows :

- Making maintenance manual for microfilming equipments
- Making manual for keeping of microfilming materials and consumables
- Making management manual of microfilming room
- Supplement to microfilming general specification
- Actual training of system operation by using data from WAY UMPU, WAY RAREM and TELUK LADA.

3.1 Maintenance manual for microfilming equipments

This manual compiled for maintenance of microfilming equipments installed in CGSC. Counterpart and microfilming staffs should maintain equipments daily according to this manual. Manual is shown on Chapter II.

3.2 Manual for keeping of microfilming materials and consumables

Microfilming materials and consumables is able to be deteriorated by chemical reaction or other causes, and their effective term are limited. Therefore careful treatment is indispensable for keeping of them. This manual instructs suitable keeping method for materials and consumables. Manual is shown on Chapter III.

3.3 Management manual of microfilming room.

Works of microfilming are done mostly in microfilming room. This manual shows jobs in microfilming room. Manual is shown on Chapter IV.

3.4 Adjustment with "Microfilming system and management"

"Microfilming system and management" is considered in relation to Technical Information System, espesially about coding system, between experts and counterparts. Conclusion is that code system of microfilming system should not be changed fundamentally. But, classification code for data was adjusted and supplemented a little. New classification code of data is shown on Chapter V.

3.5 Supplement to "Microfilming general specification"

Chemical inspection method of processed microfilm is supplemented to "Microfilming general specification" which was made during the former stay of short-term expert. This inspection examines quality of processed microfilm for keeping. When fixing and washing process is not enough, microfilm will be deteriorated by residual silver or residual hypo (residual thiosulfate). As a result, microfilm is discolored and keeping of microfilm can not be achieved properly. Then, this inspection is very important. Details are shown on Chapter VI.

3.6 Actual training

"Microfilming general specification" and other manuals have been compiled so far. Actual training for counterpart and microfilming staffs was done by using actual data from projects with short-term experts guidance and advice.

1) Operation training of system by using actual data.
   (Refer to Chapter VII).

2) Training of maintenance of microfilming equipments.

3) Chemical inspection training of processed microfilm.

Details are shown on Attachments.

4. Recommendation

Microfilming system has been filled up through short-term experts guidance and trainings of counterpart and microfilming staffs.
For more effective management of microfilming system and adaption to Indonesian conditions, following activities are required from now an :

4.1 It is necessary to continue system operation by actual data. Data should be collected as much as possible.

4.2 It is possible to say that technical for microfilming has been transfered to counterpart and microfilming staffs with their efforts and short-term experts guidance. Their technics will be reached high grade through more study and experience in the future for their jobs.

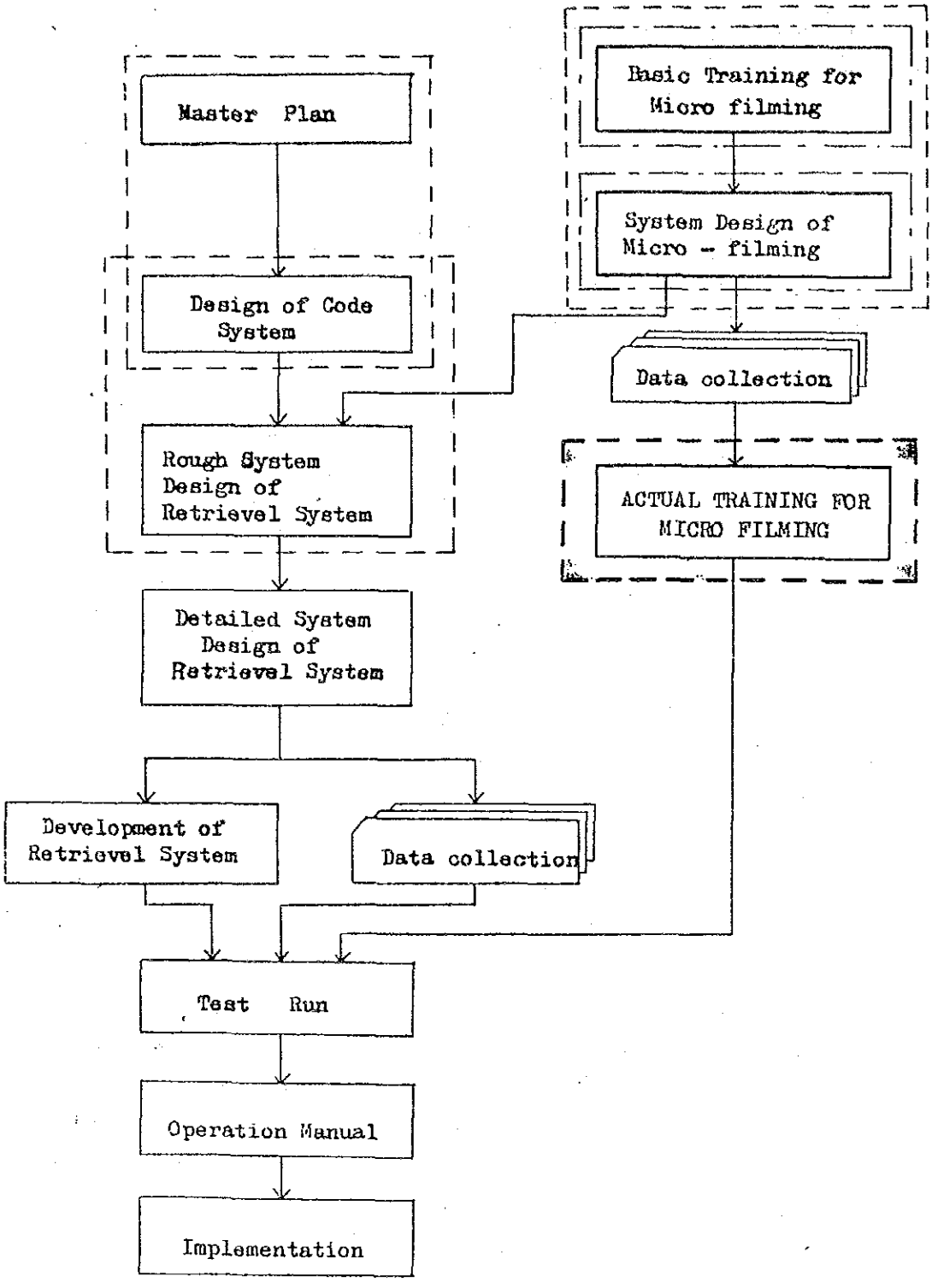
4.3 Climate and environment in Indonesia is not good for keeping of microfilm. Counterpart and staffs should be careful to keep those important films. It is recommended that processed microfilm should be checked at least once a year.

4.4. It is strongly recommended that maintenance contract for microfilming equipments should be made with suitable company in Indonesia. Consequently equipments can be used longer, and procurement of materials and consumables can be coped more effectively.

Fig - 1

CONTENTS OF WORKS

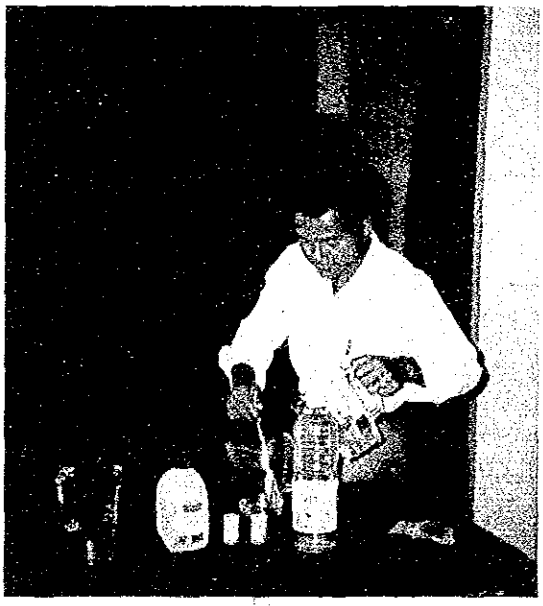
Development Flowchart of Technical Information Service System



5. Phots of Training

Maintenance of Microfilming Equipments

Chemical Inspection



Attachment - 1.

FORM : Minutes of Meeting

Topic of Meeting : Training for maintenance operating equipment of microfilm.
Coordinator : M. AOYAGI
Date : Day 9 - 11, Month August, Year '84
Place : Microfilming room
Time : From 10.00 am / ~~pm~~ until 14.00 ~~am~~ / pm.

Attendants :

Experts	Counterparts
Mr. Masatomi AOYAGI	Ir. Yarmi Sariya
	Mr. Tugiran
	Mr. Harry Sundhoro
C.C. Mr. Jimpei Ishizaka	Mr. Zulkarni Dongoran
Mr. Masahiko Okubo	C.C. DR. A.Hafied A.Gany, BIE, MSc.

No.	Particular	Result of Discussion
	• Training for maintenance operating equipment of microfilm to counterpart and working staffs in CGSC was carried out as follows.	
	• Type and Model.	1. Fuji Microfilm Camera L5 2. Fuji Auto Processor AP-4 3. Fuji Micle - 1200 4. Fuji Microfilm Reader R 1324 5. Minolta Reader Printer RP - 1324 6. Minolta Reader Printer RP - 400 7. Cut Fiche Duplicator DP - 10.
	• Report / Comment	Generally counterpart and all working staffs who had attended the training were mostly in well understanding. They are sufficiently capable for regular maintenance operation by themselves, but they will be still uncapable for hard trouble which will suddenly happen in some times, without professional engineer. Therefore it will be required to contract with a civil proper company with the yearly maintenance contract. (for instance P.T. MODERN PHOTO FILM CO.) (Jl. Raya Matraman No. 12 Jakarta Timur. Telp. 483403, 885027).

Consideration: Please check the appropriate column! ✓

•Further consultation is required:	•Further meeting is required :	•TO BE IMPLEMENTED
☐ JICA ; ☐ Project Manager	☐ Individual ; ☐ Coordinative	☐

APPROVED BY :

Expert : J. Ishizaka — Jimpei Ishizaka (name / signature)

Counterpart : DR. A.Hafied A.Gany,BIE.MSc. (name / signature)

Attachment-3

FORM ; Minutes of Meeting

Topic of Meeting : Chemical inspection training of processed Microfilm

Coordinator : M. AOYAGI

Date : Day 22, Month August, Year '84

Place : Microfilming room

Time : From 10.00 am /~~pm~~ until 3.00 ~~am~~/pm.

Attendants : Experts

Mr. Masatomi Aoyagi

C.C. Mr. Jimpei Ishizaka

Mr. Masahiko Okubo

Counterparts

Ir. Yarmi Sariya

Mr. Tugiran

Mr. Harry Sundhoro

Mr. Zulharni Dongoran

C.C. Dr. A.Hafied A.Gany BIE.MSc.

No.	Particular	Result or Discussion

Training for Chemical inspection of processed Microfilm to counterpart and working staffs in CGSC was carried out as follows.

1. Residual silver test ..... Sodium sulfide method
2. Residual thiosulfate test ..... Silver nitrate method (Residual Hypo Test)

Comment

This inspection examines quality of processed Microfilm will be deteriorated by residual silver or residual hypo (residual thiosulfate).

The microfilm will be discolored if it would not be taken with proper treatment.

Thus, this inspection is very important to check the results.

Considerations: Please check the appropriate column!

*Further consultation is required:	*Further meeting is required:	-TO BE IMPLEMENTED
☐ OOI ; ☐ Project Manager	☐ Individual ; ☐ Coordinative	☐

APPROVED BY :

Expert : J. Ishizaka
Jimpei Ishizaka
(name / signature)

— 8 —

Counterpart : DR. A.Hafied A.Gany BIE,MSc.

MAINTENANCE
O F
MICROFILMING EQUIPMENTS

Ⅱ. MAINTENANCE OF MICROFILMING EQUIPMENTS

1. Microfilm Camera L3

1.1 Cleaning

1) Glass of Drawing holder

. Thoroughly wipe the both sides of grass with a clean cloth.

2) Glass of Copy bed

Thoroughly wipe the glass surface with a clean cloth.

3) Objective Lens

Blowing air to or softly wipe the lens surface with a silicon cloth.

4) Air Filter

a) Remove the Air Filter from the right rear side of Back light, clean it onece a month by blowing air or flushing water from back side.

b) When it has been completely dried, replace it in its original position.

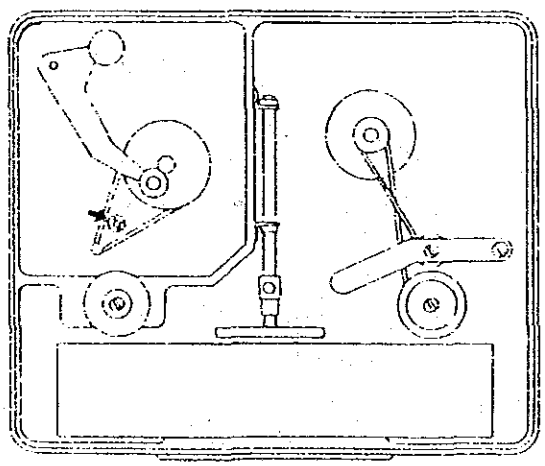
1.2 Lubrication

1) Column

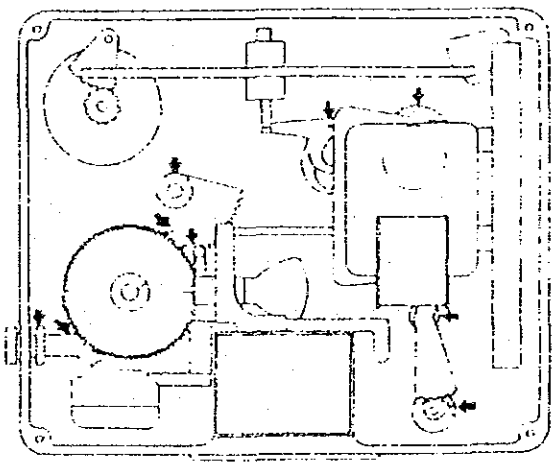
Clean the Column once every six months with a cloth moistened with machine oil.

2) Camera Head

Lubricte the Camera Head once every six months by referring to the figure shown below.



Front side



Rear side

1.3 Replacement of Lamp

1) Frame Projection Lamp

a) Turn off the Power Switch, turn the Camera Head through an angle of 180 degrees, lock it with the Clamp Knob and Remove The rear cover, then the frame Projection lamp is seen in the center.

b) Hold the bulb with one hand, hold the socket with the other hand and remove the bulb by turning it counter clockwise.

c) Mount a new bulb into the socket with the notch of its flange directed upward, turn it fully clockwise until end.
NOTE : Whenever new lamp bulb should be handled, by hands with gloves.

2) Top Light Lamp

a) When any one of the Top Light bulbs has burnt out, all of the four bilateral bulbs which are on the same level should be removed in same time with new ones.

b) Adjust the intensity of illumination for new bulbs, after exchenging.
NOTE : If all four lamp bulbs would not be replaced at the same-time, causing of luminosity differences may result uneven density on processed films.

3) Back Light Lamp

a) The Back Light Lamps are wired in series with each system of the A to H and J.K light systems.
If one bulb burns out, all of the lamps in the same system will go out, and the Back Light Warning Lamp will lights up.
NOTE : System G.H.J and K on the four corners have no Warning Lamp but their lights will dim if the bulb outs.

b) When the Warning Lamp lights up, remove the thumb screws on the front side and rear side of the Back Light and remove the cover to expose the lamps.
Check the lamps in the system whose warning lamp is glowing by refering to the alphabet letters marked on the lamp socket attaching plate.

c) The bulb can be removed by turning it counterclockwise. Mount a new bulb into a socket by fitting its studs into the notch of the socket and turn it fuly clockwise until it be stoped.

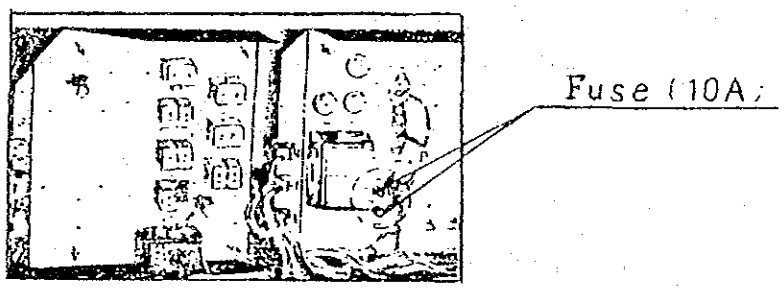
1.4 Replacement of Fuse

1) Top Light Fuse

a) Two top light fuses (each 10A in capacity) are installed in the Control Box for protective measure to the upper and lower lamps respectively.

b) The cover of the control box can be lifted off by removing the right, left, and upper screws of the control box and by loosening the lower screws.
The fuse is mounted on the fuse holder located in the lower part of the center in the control box.

c) When the fuse has blown, the cause should be confirmed and treated, then remove the fuse holder by turning it to the arrow direction and exchange with a new fuse.



2) Back Light Fuse

a) Two back light fuses (10A) are installed for those systems (A,B,G,J and K) whose lamps constanly glow and for those systems (C,D,E and F) whose lamps light up according to the reduction ratio. They are installed at the rear of the Warning Lamp.

b) The fuse for systems A,B,G,H,J and K are mounted on the left side, and that for systems C,D,E and F are on the right side.

c) When a fuse has blown, the cause should be confirmed and treated, then replace the fuse by same procedures in the case of for the top light fuse.

1.5 Troblee and Remedies

Trouble	Probable cause	Method of Inspection	Remedy
Top light lamp does not glow.	Top light cord plug is not properly inserted.	Check the cord plug.	Insert the plug properly.
	Lamp does not make improper contact of lamp.	Check the lamp.	Screw in the lamp bulb securely.
	Lamp burned out.		Replace the bulb and adjust its intensity of illumination.
	Fuse is blown.	Check the fuse.	Remedy the cause and replacing a fuse.
Back light does not light up.	Back light cord plug not properly inserted.	Check the plug.	Insert the plug properly.
	Lamp button not depressed.		Depress the lamp button for lamp.
	Fuse is blown.	Check the fuse.	Remedy the cause and replacing a fuse.
Voltage check lamp does not light up.	Input voltage to machine is too low.	Measure the input voltage.	Use a stabilizer to normalize voltage.
The frame is not projected.	Camera head connector is not properly inserted.	Check the camera head connector.	Insert the connector properly.
		Check the 12P connector of column.	Insert the connector properly.
	Frame button is not depressed.		Depress the frame button.
	Improper Contact or burning out of frame lamp.	Remove the back cover and check lamps.	If burned out replace the lamp.
Pointer of exposure meter does not move.	Sensor cord jack is not properly inserted.	Check the jack.	Insert the jack properly.
	Lamp button is not sound pressed.		Depress the lamp button.
Camera bracket does not go up or down.	Camera head connector is not properly inserted.	Check the connector of camera head.	Insert the connector properly.
		Check the 12P connector of column.	Insert the connector properly.
	Connector of elevator motor is not properly inserted.	Check the 10P connector of column.	Insert the connector properly.

Trouble	Probable cause	Method of Inspection	Remedy
Despite zero reading of footage counter, buzzer de does not sound.	Footage counter is out of adjustment.	Check the footage counter.	If defective, readjust it.
Camera does not operate.	Camera head connector is not properly inserted.	Check the camera head connector.	Insert the connector properly.
	Motor torque is too low.	Check the motor wiring.	If wired to the 50Hz tap in a 60Hz area, reinstall the wiring to the 50Hz tap.
	Input voltage into camera head is too low.	Measure the input voltage.	Use a stabilizer to normalize voltage.
Shutter does not operate.	Camera is under condition of frame projection.		After depressing the lamp button, depress the shutter button.
Camera dows not operate when shutter button is pressed.	Frame control dial is set between 2 through 12 and repeat switch is OFF.	Check the frame control dial and repeat switch.	Tread on foot switch, beginning with the second frame.
Camera dows not operate when the foot switch is trodden.	Frame control dial is set between 2 through 12 and repeat switch is OFF.	Check the frame control dial and repeat switch.	Depress the shutter button for the first frame.
Camera motor idles.	Film is twisted around film drive roller.	Wind handle is difficult to turn or cannot be turned.	Take off twisted film from drive roller.
	Motor provides weak clutch torque.	Check the motor by turning reduction gear with the fingers.	Tighten the clutch adjust nut.
The film is scratched.	Oil on each roller has been depleted.	Check each roller.	Clean and lubricate the camera head.
Camera does not stop the operation when reset button is pressed.	Reset button is not fully depressed.		Depress the button sufficiently.

2. Microfilm Camera-Processor MICLE 1200

2.1 Cleaning

1) General

The most important matter to maintain optimum camera-processor performance and to further extend its service life, is to always keep the camera-processor clean and if it be once dirty to clean up at once. Specially clean carefully the parts where are likely to be contaminated with solutions

2) Platen glass

a) Wipe thoroughly the glass surface with a clean cloth.

b) When the glass is dirty illegible films may be produced.

c) It is recommended that a soft and dry cloth is better to use for cleaning.

2.2 Replacement of exposure lamps

1) Prepare a set of special lamps for MICLE-1200 (four lamps), and replace all four lamp bulbs with new ones at the same time. If all four lamp bulbs would not be replaced at the same time, luminosity difference may occure and uneven density on processed films often results from it.

2) Turn off the POWER Switch and disconnect the power plug from the receptacle. Remove the Drainage and Water Containers after emptying the Tanks. Move the camera-processor, thus the Rear-Cover and Front-Cover can be removed.
If it is not necessary to move MICLE-1200 for the cover removal, the lamps can be replaced without removing the solutions.

3) Replace the four lamp bulbs with new one's , and adjast the the sockets by turning it so that marks on the lamp bulbs are facing upward.

4) Attach the Front and Rear Covers, and return the camera-processor to its original position.
Whenever solutions and water are drained, they should always be replaced with fresh solutions.

2.3 Replacement of Fuse

1) Open the front door. The main fuse holder can be found on the upper part of panel.
   Turn 10A main fuse counterclockwise and remove it.

2) Remove the rear cover
   This will find the 100V fuse (15A) on the surface of the light control panel.
   The thermo-fuse is on the interior of the cover in the lower part of the dryer rack.
   When a fuse is blown out, replace it with a new one after correcting the cause.

4. Troubles and Remedies.

Trouble	Probable cause	Method of Inspection	Remedy
Exposure Lamp does not light.	Poor lamp contact.	Check lamp.	Install firmly.
	Defective lamp.	Check lamp.	Replace lamps.
	Defective lamp circuit.		Call service engineer.
Image does not emerge.	No solution provided.	Check each tank.	Fill with solution.
	Wrong solution.	Immerse a strip of film into Tank A. If film does not become black, solution is defective.	Clean each rack, tank and Replenisher tank and fill with new solution.
Density is too low.	Insufficient exposure.		Adjust Exposure Control Dial.
	Exhausted solution.	Check number of days elapsed or number of films processed since solution were changed.	Replace solution.
	Temperature of Developer is too low.	Look at NOT READY lamp.	Start filming after the lamp goes out.
		Check for open door.	Close door.
		Measure temperature of Developer with a thermometer.	Call service engineer when it is below 32° C.
	Insufficient volume of Developer.	Check level of Developer.	Add if necessary.
	Incorrectly loaded film (up-side-down).	Open the camera door and check.	Correct film loading.
	Dirty mirror.		Call service engineer.
Density is too high.	Excessive exposure.		Adjust Exposure Control Dial.
	Fogged film.	Check for open door.	Close door.
		Advance film several frames.	Replace film.
	Temperature of Developer is too high.	Measure temperature of Developer with a thermometer.	Call service engineer when it is higher than 34° C.
Uneven density.	Insufficient volume of Developer.	Check level of Developer.	Add Developer to Tank A and Replenisher Tank.
	Defective lamp.	See 'Lamp does not light' above.	
	Uneven illumination.	Check installment spot.	Provide correct light conditions as per Installation Manual.

Trouble	Probable cause	Method of Inspection	Remedy
Dark brown stain appears in film.	Developer mixed with Fixer.	Rub film under water and see if stain disappears.	If the stain fades, replace solutions with new ones.
Film appears milky white.	Incorrect Fixer used.	Immerse film in the solution and see if it becomes transparent.	Replace the solution, if it does not become transparent.
Film is not dried completely.	Broken heater. Broken thermo fuse.	Check if drying temperature is low.	Call service engineer.
Film is not delivered to the tray.	Jammed in the camera.	Remove the Baffle in the camera and check the Guide Rail	Remove the Jammed film from Guide Rail.
	Jammed in the processor.	Check each Rack.	Install the Rack correctly after removing the jammed film.
	Wrong film loading at the supply box and or at the drive roller.	Check film loading.	Load film correctly.
Film number does not coincide with indicator.	Film number indicator is out of order.	Advance one spool of film, and check number.	Call service engineer.
	Jammed in camera.	See 'Film is not delivered to the tray'.	
PHOTO button does not operate.	No film in film box.	Check control panel.	Load film.
	Film jammed in camera.	Check control panel.	Reload film.
	Chemicals need replacement.	Check control panel.	Replace chemicals.

3. Microfilm Auto Processor AP-4

3.1 Cleaning

1) Changing Solutions and Washing Racks

a) Change all processing solutions when the Film Counter exceeds 600 (6 rolls of 30.5 m/100 feet film) and 1.200 (12 rolls of 30.5 m/100 feet film) for 35 mm and 16 mm films, respectively.

NOTE : When changing solutions, take out the tanks without removing their Processing racks to avoid machine contamination.

b) When changing solutions, wash the Developer Racks with water rubbing with a viscous sponge.
Racks for Rinsing, Fixing and Washing don't become so dirty as the Developer Racks but check them from time to time and wash them thoroughly if they have become dirty.

c) In case the Developer Racks and Tanks become so dirty, wash them with cleaning solution once a week or so.

NOTE : i) Make sure to dilute the cleaning solution with water according to the instructions packed with the cleaner.

ii) The immersion time in the tank cleaner for cleaning tanks and racks should be limited to less than 5 minutes to avoid a fail by wash solution. After immersion wash them with water carefully and thoroughly.

d) Washed tanks and racks must be setted in the processor to protect them from dust.

NOTE : The Squeegee Rack must be used after drying it sufficiently

2) Air Filter

Remove the Air Filter and clean it by blowing air or fresh water from the back side once a mounth.

3) Other Parts

If a processing solution has spilled on other parts, wipe it off immediately with a moistened cloth.

3.2 Replacement of fuse

1) The fuse (10A) is installed inside the rear cover on the left side of the processor.

2) When a fuse blows, check the cause and take counter measures and then replace it with a new one.

3.3 Lubrication

Lubrication is needed for motors and the blower fan every six months.

4. Troubles and Remedies.

Trouble	Probable cause.	Method of Inspection	Remedy.
Main lamp does not light.	Circuit breaker (main switch) not ON.	Check circuit breaker (main-switch).	Turn the breaker (main - switch) ON.
	Fuse (10A) blown.	Remove back cover and check fuse.	Check the cause, take counter measures and change the fuse.
TEMP-DEV lamp does not light.	Water level in thermostatic bath is too low.	Wash water not running.	Make wash water flow.
		Standpipe not set.	Set standpipe.
	Water temperature in thermostatic bath is too high.		Lower the temperature.
	Fuse (10A) blown.	Remove back cover and check fuse.	Check the cause, take counter measures and change the fuse.
Film image does not appear.	Unexposed film.	Immerse a piece of raw film in the developer tank in a light room. If the film becomes black, the developer is normal.	Change for exposed film.
	Developer inadequate.	When raw film piece is immersed in developer tank in a light room and not blacken, the developer is not normal.	Replace developer.
Insufficient image density.	Connector of developer thermostad not inserted.	Check connector.	Insert connector.
	Developer temperature too low.	Measure the temperature with thermometer.	Start processing after TEMP-DEV lamp is off.
	Developer exhaustion.	Confirm indicator on film counter.	Replace developer.
	Underexposure.		Retake.
	Fuse (10A) blown.	Remove back cover and check fuse.	Check the cause, take counter measures and change the fuse.

Trouble	Probable cause	Method of Inspection	Remedy
Image density too high or completely black.	Fogging.	Whole or end part of film roll is blackened.	Retake.
	Developer temperature is high.	Measure temperature with thermometer.	Consult with your dealer.
	Overexposure.		Retake.
Longitudinal streaks on film strip.	Inadequate rack seating.	Check rack seating.	Set racks correctly.
Dark transverse streaks on film strip.	Magazine opened before processing.	Streaks with about 3 cm intervals at the top part of roll.	Assemble magazine carefully. Retake bad parts.
	Light leakage from the center of spool.	Streaks at about 10 cm intervals at the end of the roll.	Use rubber stopper for the magazine in a light room and handle under subdued light. Retake bad parts.
Dark-brown stains on film.	Developer contaminated with fixer.	By rubbing in water the stains become fainter.	Replace developer.
Milky white film.	Incorrect fixer.	Raw film does not become clear when immersed.	Replace fixer.
Film does not reach to outlet after 1-½ minutes.	Supply shaft friction is too great.	Check friction.	Consult with your leader.
	Leader is caught on the way.	Film counter not working.	Cut the film near the magazine and remove the caught leader and film and then attach a new leader to the film.
	Rack is not normally seated.	Leader is caught.	Set rack correctly and resplice the leader.
	Not Proper binding of film with leader.	Only leader appears on the take-up side.	Resplice leader.
Insufficient drying.	Dryer fan does not work.	No revolving sound.	Consult with your dealer.
	Drying temperature too low.		Consult with your dealer.
	Heater is broken up.	Low dryer temperature.	Consult with your dealer.
Water marks.	Squeegee rack is wet with water.	Check rack.	Keep squeegee rack dry.

Trouble	Probable cause	Method of Inspection	Remedy
Water marks	Squeegee cover not set.		Set Squeégee cover.
Take-up shaft does not revolve.	No Connection for take-up unit.	Check connector.	Insert connector.
	Strong friction of take-up shaft.	Check take-up shaft.	Consult with your dealer.
	Trouble in take-up motor.	Check motor.	Consult with your dealer.
Leader is not wound on a reel. (Automatic take up unit).	Reel is not properly set. (Buzzer sounds).	Check reel.	Set reel properly.

4. Reader Printer RP - 1824

4.1 Cleaning

1) Film hold glass plates

The film hold glass plates should always be kept clean.
If they are stained, clean them as instructed following.

1) Switch off power.
2) Pull out the Glass plates.
3) Wipe them clean with the silicon cloth.
   Remove stains, if any, with cloth impregnated with alcohol.

2) Viewing Screen

To clean the Screen which is made of acrylic resin, wipe its surface with a soft cloth.

NOTE : NEVER use a sort of thinner keton.

3) Charger Wire

a) Switch off power.
b) Open the Front Door. The Pre Charger holder and Main Charger holder can found by the central P.C. Drum.
c) Remove the Pre Charger holder and Main Charger holder.
d) Blow air to or softly wipe the Charger Wire with a soft cloth or soft paper.

4) P.C. Drum

Wipe it with piece of cloth moistured with isopropyl alcohol.

4.2 Replacement of P.C. Drum

1) Open the Front Door, loosen screws and remove Drum shaft supporting member by pulling it out toward this side.
2) Insert Drum protecting cylinder.
3) Push P.C. Drum Flange inward and turn it 90° so that the pin on the shaft fits with the cutout of the flange.
   Then, you can draw the P.C. Drum out toward this side.
4) Insert a new P.C. Drum into the cylinder to fits the pin with cutout of the flange.
5) Push the P.C. Drum inward until the pin comes out of the flange and turn the drum 90° so that the P.C. Drum is set in a position where the pin fits with groove in the flange.
6) Remove the Drum protecting cylinder.
7) Set the Drum shaft supporting member and tighten screw.

4.3 Replacement of Charger Wire

1) When a Charger Wire blows, then replace it with a new one.
2) Remove the Charger holder, then open the Insulator cover.
3) Remove the old Charger Wire, and replace it with a new one.
4) Return the Insulator cover, then return the Charger holder.

4.4 Replace of Projection lamp

When the Projection Lamp filament has burned out or it has become dim, replace the Projection lamp with following.

1) Pull out the lamp house.
2) Remove the old lamp bulb.
3) Insert the tip of connector of new lamp bulb, to be placed the filament on center of the reflector.
4) Replace the lamp house.

NOTES : i) Before attempting to remove the lamp, turn off power and take sufficient time for lamp cooling. Do not touch to the lamp while it is still hot.

ii) Do not leave fingerprints or stains on the surface of a new lamp. Wear a glove or use a piece of cloth.

iii) Insert the lamp properly. If not, it may fail to light the entire screen with uniform brightness.

5. Reader Printer RP-407

5.1 Cleaning

1) Fiche Carrier glass
   a) Remove the lens before mounting and dismounting the Carrier.
   b) Wipe thoroughly surface of the both sides of Carrier glass.
   c) When the glass is dirty, illegible projection image or copys may be produced.
   d) Remove stains, if any with cloth impregnated with alcohol.

2) Projection lens
   a) Open the lens cover.
   b) Lift the Projection lens together the lens holder with from lens holder bracket.
   c) Pull out the Lens from the lens holder.
   d) Blowing air or wipe softly the lens surface with a silicon cloth.
   e) Replace the lens into its oliginal position.

   NOTES : i) Put exactly the set screw of the lens frame on the slot of the lens holder to set the lens.

   ii) When the lens holder has been clicklocked in the lens holder bracket, the position of magnification rate of the lens frame is at the front.

3) Viewing Screen
   To clean the screen which is made of acrylic resin, wipe its surface with a soft cloth.
   NOTE : NEVER use the sort of thinner keton.

5.2 Replace of Projection Lamp

Replace of Projection lamp is in the following procedure if its filament has burned out or has become dim.

1) Open the lamp house cover.
2) Draw out the lamp house.
3) Remove the old lamp bulb.
4) Insert a new lamp bulb, and push the lamp house back into its original position.

   NOTES : i) Before attempting to remove the lamp, turn off power and take sufficient time for lamp cooling.
   Do not touch to the lamp while it is still hot.

ii) Do not leave fingerprints or stains on the surface of a new lamp. Wear a glove or use a piece of cloth.

iii) Insert the lamp properly. If not, it may fail to light the entire screen with uniform brightness.

5.3 Replacement of fuse

1) When a fuse blows, check the cause and take counter measures, then replace it with a new one.

2) Open the left side cover.

3) Remove the fuse holder, take out the blown fuse, and replace it with a new one of the specified rating (250V, 5A).

4) Close the left side - cover.

5.4 Others

1) Keep toner solution away from an open flame because it is a petroleum derivative and inflammable.

2) Be sure to drain toner solution before carring the RP-407 to a new location.
If toner solution, is spilled into the cabinet, may become a cause of mechanical trouble.

6. Cut Fiche Duplicator OP-10

6.1 Cleaning the outside of Machine

Use mild soap and water to clean the surfaces of the Bruning OP-10. Do not use oily polishes or waxes on the machine cabinet or metal parts which are inserted the master or copy film.

6.2 Cleaning the Exposure Platen

The exposure platen glass should always be kept in clean to get the optimum copies. For continous operation it should be cleaned once a day. The platen glass should be cleaned with a suitable non-abrasive cleaning material.

NOTE : Do not use solvents.

6.3 Replacement of Exposure Lamp

The life time of the exposure lamp is posible for the operation of 2000 hours at the minimum.

6.4 Fuse Replacement

The fuse is in lower part of the back panel and directly connects with the line cord. When fuse is blown out, replace it with a new one after confirming the cause.

STORAGE OF MICROFILMING MATERIAL AND CONSUMABLES

III. STORAGE OF MICROFILMING MATERIAL AND CONSUMABLE

1. Sensitive Material (Microfilm and Sensitive paper)

1.1 Temperature and Humidity

The materials should always be stored up in a place where it is low temperature and humidity.

(For instance storing in a refrigerator)

NOTE : When the microfilm is taken out from the refrigerator, dew adheres on the film, therefore dont open the film package before temperature in the film package gets normal temperature.

1.2 Harmful gas and Chemicals

The materials should always be stored in the selected place where is no touching with harmful matters.

For instance Hydrogen sulfide, Sulfurous acid gas (Dioxide sulfur), Hydrogen peroxde, Ammonia, Mercury steam, Terpen, Medicines (Digestive, etc), Toiletry, etc.

1.3 Pressure (Pressure mark)

The pressure mark may appear on the sensitive materials when the materials get pressure because of unfit storing conditions.

In this case uneveness density may appears such as reduced or increased density on the pressed part.

NOTE : Abrasion or striking to the photographic emulsions may cause formation of a latent imagi or the destruction of an existing latent imagi.

1.4 The term of validity

The sensitized photographic materials should be used withen the time limit of expiration date.

Pay to special attention to the expiration date of Diazo microfilm because of its short life.

NOTE : Expiration date.

The date placed on sensitized photographic material packages by the manufacturers shows identified time limit for available use of the material under recomended keeping conditions.

2. Supplementary material

2.1 Aperturecard

1) If the aperturecard would get pressure before using tearing off the protection paper for mounted tape becomes hard.

2) Adhesion of the mounting tape becomes weakness slowly as the time of validity goes.

3) The materials had better be stored in the place where is as coolish and dry as possible.

2.2 Microfilm jacket

The microfilm jacket should be kept to be flat condition.

3. Chemical

3.1 Microfilming developer

The microfilming developer is alkalin, so then it loses the effect with its oxidizing.

3.2 Toner solution

The keep toner solution away from an open flame because it is a petroleum derivative and inflammable.

3.3 Others

The all chemicals had better be stored in the dark room where in as coolish and dry as posseble.

UTILIZATION AND MANAGEMENT MANUAL
O F
MICROFILMING ROOM

IV. UTILIZATION AND MANAGEMENT MANUAL OF MICROFILMING ROOM

1. Microfilming

The works in the microfilming room should be done according to the "Microfilming system and management" and "Microfilming general specifications." The works in the microfilming room are shown in Fig - 2,3,4 and 5.

Fig - 2

Data flow of the System

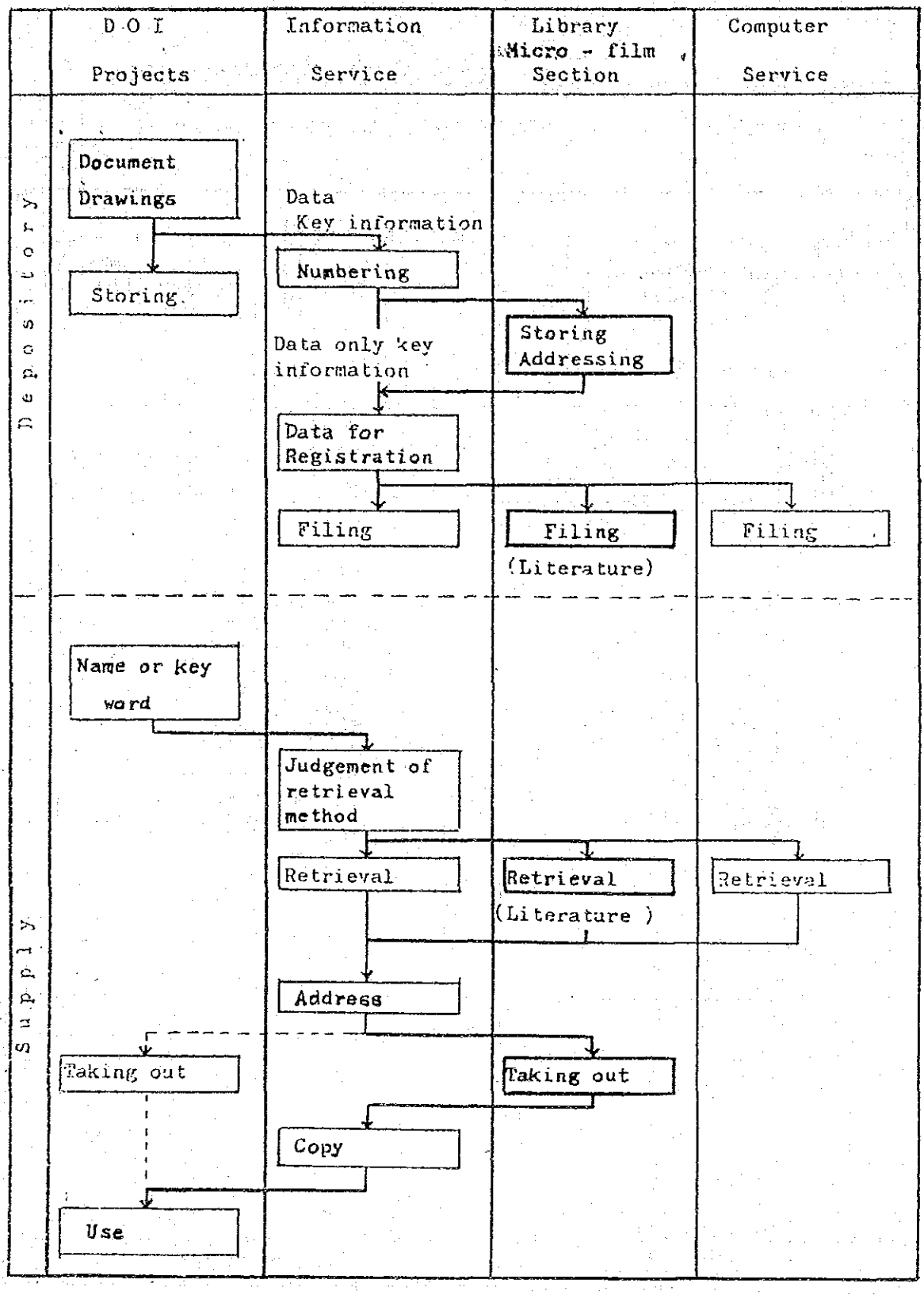


Fig-3 FLOW CHART SHOWS THE MICROFILMING SYSTEM AND MANAGEMENT BY MANUAL RETRIEVAL

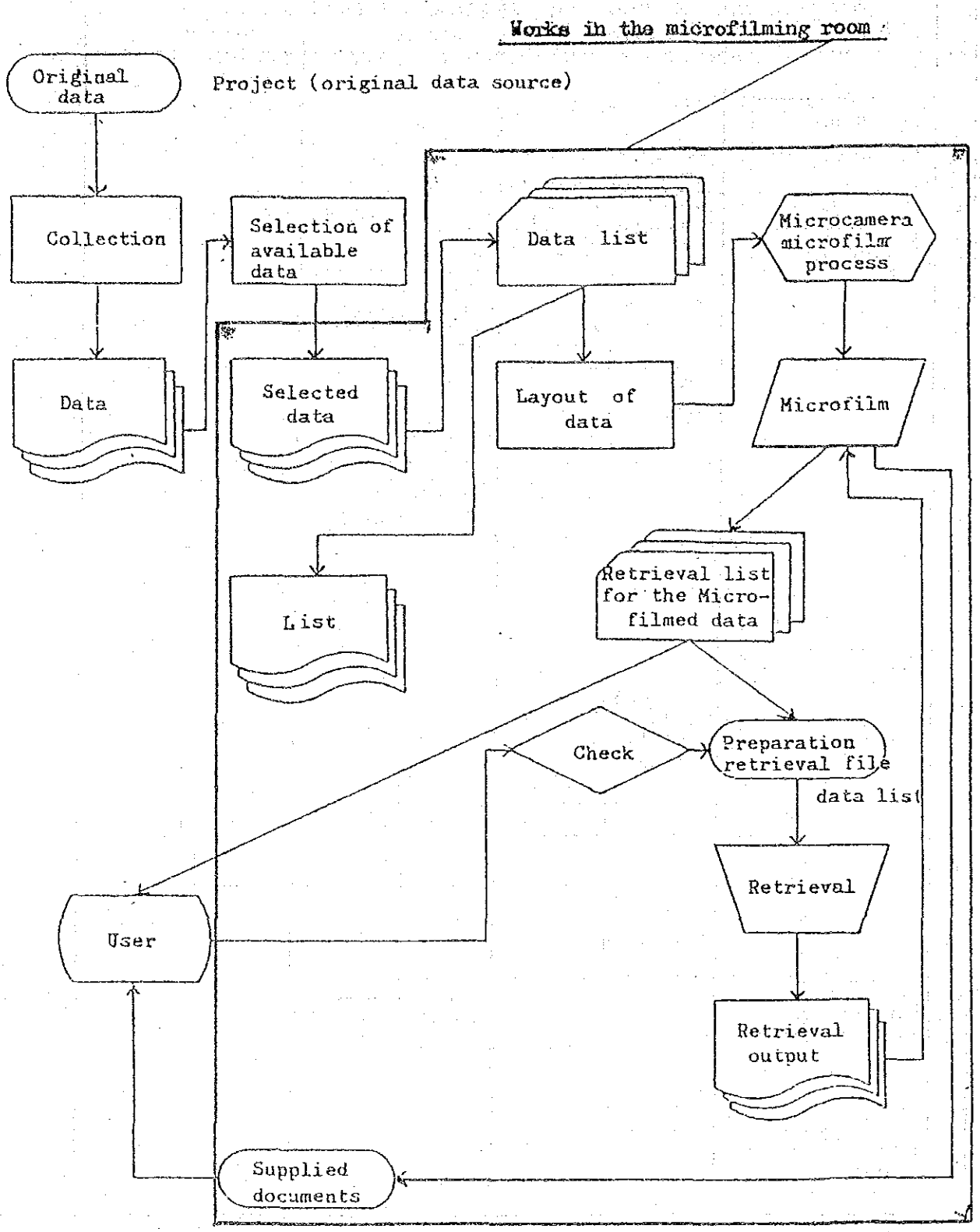


Fig-4 FLOW CHART SHOWS THE MICROFILMING SYSTEM AND MANAGEMENT BY COMPUTER RETRIEVAL

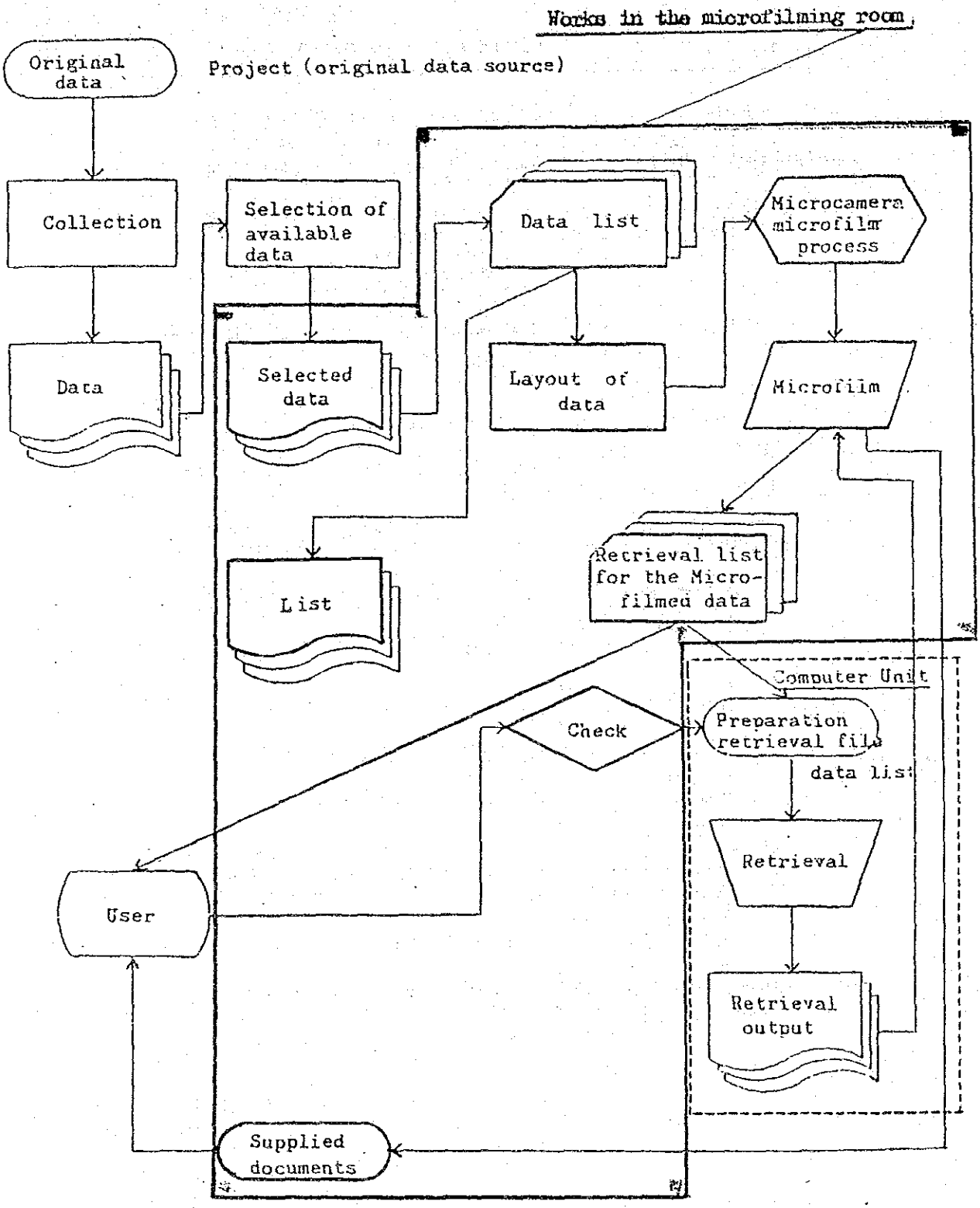
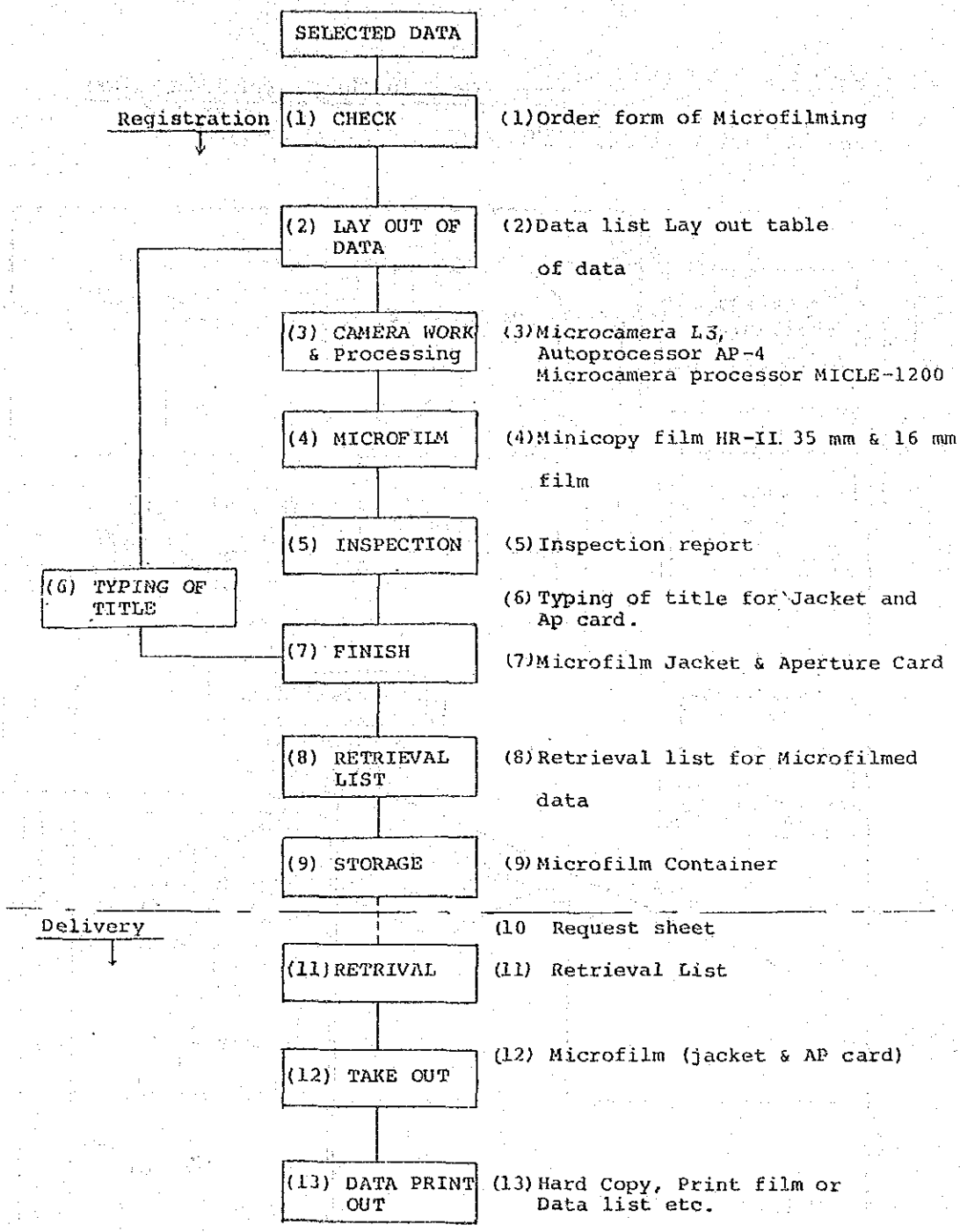


Fig - 5

DETAILS OF MICROFILMING WORKS



2. Maintenance and Management of microfilming equipment

2.1. The CGSC should carry out yearly maintenance contract for intended prolonged life of the equipments.

2.2. The microfilming working staffs should carry out daily maintenance for all equipments according to the "Maintenance of microfilming equipment" of the manual which is shown in II.

3. Storage and management of microfilming material and consumables

3.1. Storage

The working staffs should carry out proper storage for all material and consumables according to the "Storage of microfilming material and consumables" of the manual which is shown in III.

3.2. Management

1) The enventory management should be carried out carefully usually for the term of validity.
2) The materials and consumables for first use before being stored in a warehouse.
3) To make an entry in to the stock ledger for proper inventory management.

Kind of form. a) stock ledger (form- 1) for each article unit.

b) monthly quarterly and yearly reports (form- 2) for all inventory tables

4) The enventory management to be carried out by supervisor.

3.3. Management expences

Preparation of yearly purchase, estimate report for the materials and consumables according to yeraly data collection plan concerned with microfilming and references to appropriate a budget prepared from the yearly purchase and estimate report for materials and consumables.

Form - 1

Stok Leder

Name :

Date	Quantity			Cost	
	Purchase	Use	Stock	Unit Cost	Inventory Cost

Form- 2

Inventory Report

- Monthly
- Quaterly
- Yearly

Date:

INVENTORY REPORT

Name	Volume	Unit Cost	Total Cost

ADJUSTMENT
OF
"MICROFILMING SYSTEM AND MANAGEMENT"

V. ADJUSTMENT OF "MICROFILMING SYSTEM AND MANAGEMENT "

It is conclusion of discussion between the expert and counterparts that code system for microfilming should not be changed fundamentally. Only classification code of data has to be adjusted and supplemented. New classification code of data is shown on next page (table - 1, table - 2).

Table - 1 CLASSIFICATION TABLE OF DATA

1. The data concerned with the project or all other organization

Code	Stage of project and kind of data	Code	Content	Code	Detail Content
0	Letter	1	Letter	1	Letter
1	Fundamental data on Project plan	1	Factfinding survey report	1	Agricultural Survey report
		2	Investigation data	2	Soil Survey report
		3	Reconnaissance survey report	3	Geological survey report
		4	Pre feasibility study report	4	Soil Mechanics report
		5	Feasibility study report	5	Hydro geological report
				6	Soil mapping report
		6	Others	7	Others
2	The data concerned with master plan and design works	1	Pre design report	1	Hydrologi report
		2	Detail design report	2	Soil Mechanic report
3	The data concerned with contract	3	Tender documents and drawings	3	Civil Engineering report
				4	Operation and Maintenance report
		4	Contract documents and drawings	5	Agriculture report
		5	Others	6	General&Technical Specification
				7	Others
4	The data concerned with execution of construction	1	As build drawings and documents	1	Monthly Report
				2	Quarterly Report
		2	Others	3	Annual Report
5	The data concerned with completion of construction	1	Completion report	1	Engineering report
		2	Taking of document	2	Inspection report
		3	Others	3	Others
6	The data concerned with operation and Maintenance	1	Operation and maintenance study report	1	Operation and Maintenance Manual
		2	Others	2	Others
	2. Literature.				
7	Periodical literature	1	Periodical literature concerning irrigation and drainage engineering	1	Indonesian Language
				2	English Language
				3	Others Language
		2	Periodical literature except above		
8	Non periodical literature	1	Technical document, report and data,etc	1	Social Science
				2	Statistics
				3	Civil Engineering
				4	Planning of civil Engineering works
9.	Others	1	The data which can not be classified in the above mentioned items	1	Others

Table-2 Classification code of works

Code	Kind of works	Code	Detailed kind
1	Dam	1	Concrete dam
		2	Fill tipe dam
		3	Others
2	Headworks	1	Cofferdam
		2	Scouring sluice
		3	Weir
		4	Others
3	Canal	1	Open Canal
		2	Tunnel
		3	Syphon
		4	Culvert
		5	Aqueduct
		6	Pipeline
		7	Others
4	Reclamation works	1	Land reclamation
		2	Farm land conservation
		3	Farm pond
		4	Others
5	Pump	1	Pump station
		2	Others
6	Gate	1	Gate and Value
		2	Tide gate
7	Architecture and other construction works	1	Building
		2	Road and road bridge
8	Others	1	Operation and maintenance facility
		2	Others
9	Standard	1	Standard of works

SUPPLEMENT
OF
"MICROFILMING GENERAL SPECIFICATIONS"

VI. SUPPLEMENT OF " MICROFILMING GENERAL SPECIFICATION "

The specification for the chemical inspection method of processed film is supplemented to the Microfilming general specification.

1. Chemical inspection method

1.1 Residual silver test

This test, which is an inspection of degree of fixing process completion, inspects residual silver on the processed film.

1) Sodium sulfide method

a) Drop the reagent on the test film.
(emulsion side and transparant part)

b) Wipe off the reagent after three minutes, and inspect discolor degree.

c) When fixing process is not enough, colour of test film changes to yellow. This is chemical reaction of residual silver by the reagent. (sodium sulfide)

d) When fixing process is perfect, colour of test film does not change.

2) Reagent (ST-1)

a) Reagent basis

Distilled water (H_2O) ..... 100 cc

Sodium Sulfide (Na_2S) ..... 2 g

b) Using reagent (diluted reagent)

The using reagent are diluted according to the following dilution ratio.

. Dilution ratio

Reagent basis 1 : water 9

Note: i) The reagent should be sealed in a bottle for keeping.

ii) Effective term for keeping

. reagent basis ..... three months.

. diluted reagent ..... one week.

1.2 Residual thiosulfate test (Residual Hypo test)

This test, which is an inspection of degree of washing process completion, inspects residual thiosulfate on the processed film.

1) Silver nitrate method

a) Drop the reagent on the test film.
(emulsion side and transparant part)

b) Wipe off the reagent after three minutes, and inspect discolor degree.

c) When washing process is not enough, colour of test film changes to yellowish brown.
This is chemical reaction of residual hypo by the reagent.
(silver nitrate)

d) When washing process is perfect, colour of test film does not change.

2) Reagent (HT-2)

a) Reagent basis

Distilled water (H_2O) ..... 750 cc

Acetic acid 28% (CH_3COOH) ..... 125 cc

Silver nitrate ($AgNO_3$) ..... 7.5 g

Compound above basis, and total volume of reagent should be by adding distilled water.

b) Using reagent

Reagent basis is used as using reagent.

NOTE: i) The reagent should be sealed in a brown bottle. And the bottle should be kept in dark place.

ii) Effective term for keeping. ....

..... approxmately three months.

iii) It is very important to use distilled water. Otherwise, some chemical composition in water causes unexpected reaction. (Sometimes reagent gets turbid white)

iv) Treatment of silver nitrate should be careful, because it is poison to human.

v) Hypo means thiosulfate.

VII. ACTUAL TRAINING OF THE SYSTEM OPERATION

Based on the microfilming system arranged last time. Actual operation for this system was carried out by counterpart and staffs in CGSC, by using the exiting data concerned with WAY UMPU, WAY RAREM and TELUK LADA Project.

1. WAY UMPU - WAY PANGUBUAN

1.1 Title of data

1) Feasibility Study on Way Umpu.
2) Engineering Report on Hydrology.
3) Engineering Report on Geology, Soil Mechanic, Topographic Survey.
4) Engineering Report on Irrigation Planning.
5) Engineering Report on Agriculture.
6) Design Note Vol. II.
7) Operation And Maintenance Report Vol. I.
8) Operation And Maintenance Report Vol. II.
9) Operation And Maintenance Report Vol. III.
10) Survey Daerah Catchment Area.
11) Survey Pemetaan Tanah.

(Total 11 books)

1.2 Content of Microfilm

1) Documents ..... 1667 Frames / 34 Jackets
2) Drawings ..... 133 Frames /133 Aperture Cards

2. WAY RAREM - WAY ABUNG

2.1 Title of data

Completion Report on Rarem Dam Construction.

1) Volume I. Main Report.
2) Volume II. As Build Drawings.

Part I. Prepared by the Engineer