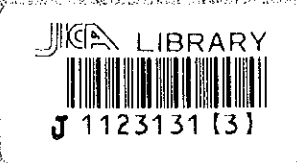


No. 1

JAPAN INTERNATIONAL COOPERATION AGENCY  
MINISTRY OF INFORMATION, CULTURE,  
TOURISM & YOUTH  
REVOLUTIONAL GOVERNMENT OF ZANZIBAR  
THE UNITED REPUBLIC OF TANZANIA

**BASIC DESIGN STUDY REPORT  
ON  
THE PROJECT FOR THE REHABILITATION  
OF  
TELEVISION ZANZIBAR  
IN  
THE UNITED REPUBLIC OF TANZANIA**

MARCH 1995



*NHK Integrated Technology Inc.*

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BASIC DESIGN STUDY REPORT ON THE PROJECT FOR THE REHABILITATION OF  
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MARCH 1995  
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## PREFACE

In response to a request from the Government of the United Republic of Tanzania, the Government of Japan decided to conduct a basic design study on the Project for the Rehabilitation Television Zanzibar in the United Republic of Tanzania and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Tanzania a study team headed by Mr. Iwao Tatsumi, Director, General Affairs Division, Hachioji International Training Centre, Japan International Cooperation Agency and constituted by members of NHK Integrated Technology Inc., from October 25 to November 23, 1994.

The team held discussions with the officials concerned of the Government of the United Republic of Tanzania, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Tanzania in order to discuss a draft report and the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Tanzania for their close cooperation extended to the teams.

March 1995



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Kimio Fujita

President

Japan International Cooperation Agency

March 1995

Mr. Kimio Fujita  
President  
Japan International Cooperation Agency  
Tokyo, Japan

Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for the Rehabilitation of Television Zanzibar in the United Republic of Tanzania.

This study was conducted by NHK Integrated Technology Inc., under a contract to JICA, during the period of October 20, 1994 to March 28, 1995. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Tanzania and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

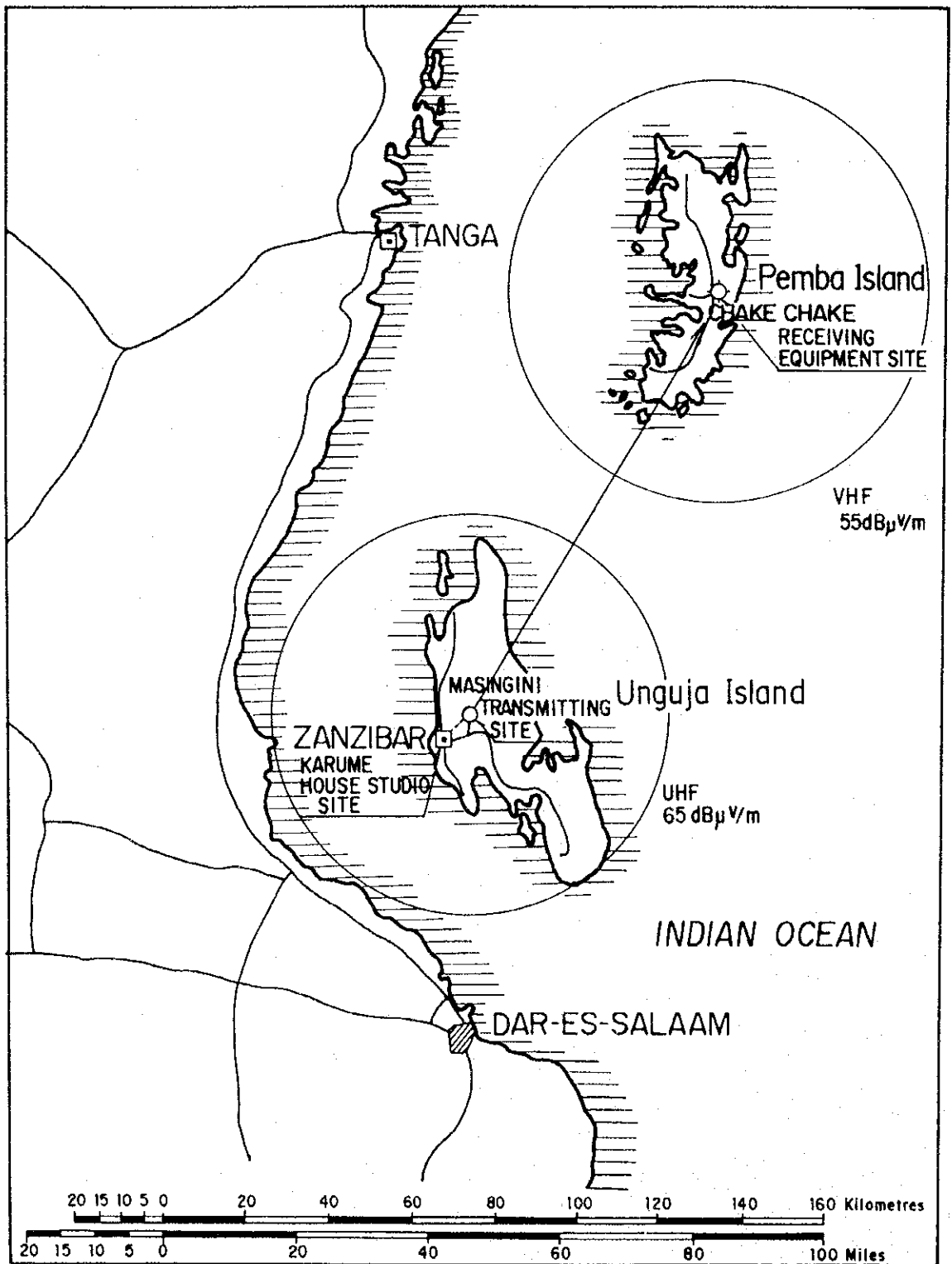
We wish to take this opportunity to express our sincere gratitude to the officials concerned of JICA, the Ministry of Foreign Affairs, and the Ministry of Posts and Telecommunications. We would also like to express our gratitude to the officials concerned of the Ministry of Information, Culture, Tourism and Youth, Television Zanzibar, JICA Tanzania Office, the Embassy of Japan in Tanzania for their cooperation and assistance throughout our field survey.

Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,



Kaoru Oka  
Chief Consultant,  
Basic design study team on  
the Project for the Rehabilitation of  
Television Zanzibar  
NHK Integrated Technology Inc.



THE UNITED REPUBLIC OF TANZANIA



## Summary

The United Republic of Tanzania has an area of 945,087 square kilometres (364,900 square miles), about 2.5 times larger than Japan, and a population of approximately 27.28 million on 1993. The country has two autonomous regions, namely Tanganyika on the mainland, and Zanzibar consisting of several offshore islands including Unguja and Pemba.

Three of the great lakes of Africa lie on the borders of Tanganyika. Lake Victoria is located in the northwest, Lake Tanganyika in the west, and Lake Nyasa on the southern border. Neighboring countries sharing these lakes with Tanzania are Kenya and Uganda, Zaire and Burundi, and Malawi and Mozambique.

Zanzibar consists of Unguja Island, Pemba Island and other Islands, having a population is 669 thousand (402 thousand of Unguja Island, 267 thousand of Pemba Island) and an area is 2,750 square kilometres (1,658 square kilometres of Unguja Island, 984 square kilometres of Pemba Island, and others). Regarding the government organs, a line is drawn between the Zanzibar and the main land, and it has a government with a president, a unicameral legislature and a court. However, it has directly elected seats in the Parliament of the United Republic, and the president of Zanzibar is the vice-president of the United Republic.

Television broadcasting started in 1973, when Television Zanzibar (TVZ), based at Karume House in Zanzibar, began the first colour service in Africa, using channel 21. Three private stations execute TV broadcasting on the mainland. However, national TV broadcasting is under preparation for the establishment. Furthermore, radio broadcasting is done by Radio Tanzania Dar es Salaam (RTD) on the mainland and by Radio Tanzania Zanzibar (RTZ) in Zanzibar.

Later, broadcasts also began on the island of Pemba, on channel 9. At the time of established Television Zanzibar, Tanzania was a successful exporter of cloves and other agricultural products. The fact that first-rate broadcasting equipment was bought without any financial assistance demonstrates the favorable economic circumstances of the time. However, most of the equipment have reached durable length of time, and broadcasting continues from a temporary studio and

an OB Van (Outside Broadcasting Van), using whatever material is still serviceable.

Transmitting stations are located on Unguja island at Masingini and on Pemba island at Chake Chake. The Masingini transmitting station started to operate in 1973, using a 5 kW UHF transmitter. In 1993, this transmitter broke down, and Television Zanzibar installed a 10 kW transmitter to restore broadcasting capability. Since then 5 kW transmitter is being retained as a backup, but it is currently not usable.

As a service to viewers, Television Zanzibar maintains a number of community centres which aim at promoting television broadcasts. Currently, programming is limited to four hours per day from Monday through Friday, and five hours per day on weekends. Programme contents are centered around news, education, agricultural development, and public health. Special focus is being placed on educational programs. More than 60 percent of all programmes are imported, the rest are self productions.

The current project, scheduled for completion in 1996/1997, aims to expand programming and increase the percentage of self-produce programmes in the fields of education, training, and news reporting. Also, an extension of daily programming by about 2 hours per day, for a total increase of 14 hours per week is planned.

Due to the circumstances outlined above, the Tanzanian government has requested a free grant from Japan, to allow it reached durable length of time and thus continue TV broadcasting. This is seen as beneficial not only for transfer basic information to Zanzibar resident's, but also to gain know-how and secure technical personnel with a view to expanding television broadcasting on the mainland.

In response to the request by the Tanzanian government, Japan decided to carry out a basic policy study, and a study team was dispatched to Tanzania from October 25 to November 23, 1994. Furthermore, it was executed to explain and discuss the contents of a draft report from January 9 to January 23 after domestic work in Japan. The equipment selected on the basis of the results of this study is described below.

Name of Equipment		Main Equipment	
1. TV transmitter equipment	One set	• UHF 10 kW TV transmitter	One set
		• AVR	One set
2. Off-air receiving equipment	One set	• Receiving antenna	Two sets
		• Pri-amplifier	Two sets
		• Receiver	Two sets
		• Demodulator	Two sets
3. Continuity studio	One set	• CCD camera	Two sets
		• Teleprompter	One set
		• Video switcher	One set
		• Umatic VTR	Two sets
		• Betacam VTR	Two sets
		• 1/2" VTR	Two sets
		• Character generator	One set
		• Time super generator	One set
		• Sync. signal generator	Two set
		• Audio mixer	One set
		• Tape recorder	One set
		• Cassette tape recorder	Two sets
		• CD player	One set
		• Micro phone and stand	Four sets
		• Intercom system for production	One set
		• Video, audio monitor	One set
4. Post production system	One set	• Colour camera	One set
		• Video switcher	One set
		• DVE	One set
		• Umatic VTR	Three sets
		• Character generator	One set
		• Video monitor	Eight sets
5. ENG/EFP system	One set	• VTR lockable camera	Four sets
		• Portable audio equipment	Two sets
		• Monitor equipment	Four sets
		• Lighting equipment	Four sets
6. Editing system	One set		
(1) 1:1 Editing equipments	Two sets	• 1/2" VTR and monitor	Two sets
(2) A/B roll editing equipment	One set	• 1/2" VTR and monitor	One set
7. Measuring equipment and tools	One set	• Oscilloscope	Three sets
		• Wave form monitor	One set
		• Vector scope	One set
		• Test signal generator	One set
		• Audio test set	One set
		• Circuit tester	Five sets
		• Tools	Five sets
8. Vehicles	One set	• 4WD	Four sets
		• Minibus	One set
9. Spare parts	One set	Details will be specified when the detailed design is conducted.	

If this project is implemented as a grant aid project by the Japanese government, the following time schedule is envisioned: 1.5 months for consultant contracting and detail planning, 1.5 months for bidding, 7.5 months for equipment manufacturing and transport, and 1.5 months for installation, adjustment, and testing.

The project cost to be borne by the United Republic of Tanzania is estimated at about TShs 532,000.

The following effects are expected from this project:

Direct effectiveness

(1) Improvement on self programme production factor

The self programme production factor is 40% at present due to lack of studio equipment. TVZ has enough potential because of the number and capability of the staff, so it can increase to about 63% in the future for the self programme production factor due to the well-planned operation of continuity studio, post production system and ENG/EFP system for new introduction.

(2) Improvement on broadcasting network of TVZ

Residents of Zanzibar (669,000) can to enjoy non stop for programmes if TV receivers (100,000 sets) have stable reception, and getting out of interruption of broadcasting of TVZ. Furthermore, residents of Pemba Island (267,000) can also enjoy stable reception due to improvement of TV picture quality.

(3) Recruitment of national TV broadcasting engineers

The TV broadcasting technical level of producer/programme production staff consisting of 74 persons and engineering staff of 60 persons who have difficulty in support and increase on the technical level, should be raised. This can result in improvement on the TV broadcasting technical level of all of Tanzanian country.

## Indirect effectiveness

TV broadcasting is an information source (35 to 40%) next to newspaper and radio in receipt of news. That is a result of hearing research of 100 TV viewers in Zanzibar. Besides, it is also an information source in medicine, health, agriculture and fishing, etc., equal to radio (35%).

Accordingly, its information shall be transformed for social, cultural and economic development by programming in accord with resident's needs along with improvement in the self programme production factor, thus further enlarging the role of basic informative television.

As stated above, the project is expected to contribute to a substantial degree to a better life for the people of Tanzania.

It will be of significant value for such a project to be implemented with Japanese grant aid cooperation.

It is expected to increase more result, to introduce as following recommendations in case of execute this project.

(1) It should be sum up repair charge and depreciation amount about television broadcasting facilities, based on a management and maintenance plan of total broadcasting system on fiscal year budget of the government of Zanzibar.

(2) It should be formulate their own training programmes after completion of the project, in succession to cooperation of Japan Overseas Cooperation Volunteer at the present time.

(3) Each engineer to intentionally execute periodical check and maintenance referring to the manual.

(4) It should be promote an cooperation with TVZ in programme production, technical aspects and exchange of programmes in case TV broadcasting starts in main land.



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## **Chapter 1 Background of the Project**



## Chapter 1 Background of the Project

### 1-1 Background of the Project

Zanzibar has a population of 669,000 and an area of 2,750 km<sup>2</sup>, and in regard to the government organs, a line is drawn between the island and the mainland, and it has a government with a president, a unicameral legislature, and a court. However, it has directly elected seats in the Parliament of the United Republic, and the president of Zanzibar is the vice-president of the United Republic.

The Tanzanian broadcasting is done by Radio Tanzania Dar es-Salaam on the mainland and by Radio Tanzania Zanzibar in Zanzibar. In order to expand the radio broadcasting area in regard to Radio Tanzania Dar es-Salaam, the Japanese government has extended grant aid cooperation in the amount of 1,682 million Yen from 1986 and a further 1,579 million Yen from 1989 for a total of 3,261 million Yen for construction of transmitting stations etc.

Presently, the mainland has no TV broadcasting. However, at the annual conference in March 1993, the United Republic of Tanzania has made a request to the Japanese government for grant aid cooperation for the erection of six transmitting stations as the first stage in a plan for providing a TV broadcasting network for the mainland. At this conference, the Japanese side answered that investigations were difficult because of priority for BHN etc. On the other hand, it was recognized that the plan for restoration of the Zanzibar TV station has an urgency for rehabilitation because of the aging of the equipment, and during the annual conference in April 1994, it was expressed that this should be done this year.

The Zanzibar TV broadcasting started in 1973, and presently broadcasting is executed for four hours a day from Monday to Friday and for five hours on Saturday and Sunday. The programme contents are mainly news, education, agricultural development, and public hygiene, and education programmes are stressed especially, with education programmes also being offered to primary and secondary schools. 60% or more of the programmes are foreign programmes, while 40% of the programmes are produced in the country. In 1990, there were 80,000 TV sets in Tanzania, and the programmes are believed to reach 669,000

people in Zanzibar and 100,000 people on the mainland (including the capital Dar es Salaam).

The broadcasting installations are the TV centre with a studio in Karume House on the island of Zanzibar, and from there, a programme transmission link is made to the transmitting station in Masingini. The broadcasts from Masingini are transmitted with relaying and amplification at Pemba Island. The equipment has many troubles because of aging, and especially the transmission equipment sometimes reaches a condition where broadcasts must be cancelled.

On the basis of the above situation, the government of Tanzania has asked Japan for grand aid cooperation in order to continue the TV broadcasts by renewal of the aged equipment. This project has not only a beneficial effect on the education for the population etc., but for the government of Tanzania also has the purpose of securing engineers for the start of TV broadcasts on the mainland.

At this TV station, Japan overseas cooperation volunteers are providing technical cooperation, and some of these volunteers who returned in June of this year reported that the Zanzibar TV station is renewing a part of the equipment on the Island of Zanzibar using its own budget.

On the basis of this request, the Japanese government has decided execution of a basic design study in regard to this project, and Japan International Cooperation Agency (JICA) has dispatched a basic design study team under Iwao Tatsumi, Director, General Affairs Division, Hachioji International Training Centre, from October 25 to November 23, 1994 to Dar es-Salaam, the Island of Zanzibar, and the Island of Pemba in the United Republic of Tanzania (Hereinafter referred to as Tanzania).

## 1-2 Outline of the Request and Main Components

The first request from Tanzania is a project for restoration and equipment of the broadcasting equipment of the Television Zanzibar. It concerns the TV broadcasting equipment and the equipment for recording outside the station, and the contents are as follows:

- |                                                                       |       |
|-----------------------------------------------------------------------|-------|
| (1) Solid-state 5 kW UHF transmitter                                  | 1 set |
| (2) Microwave link<br>(Karume House ~ Masingini Transmitting Station) | 1 set |
| (3) Continuity studio equipment                                       | 1 set |
| (4) Equipment for recording outside the studio                        | 1 set |
| (5) Editing equipment                                                 | 1 set |
| (6) Measuring equipment for maintenance                               | 1 set |
| (7) Spare parts                                                       | 1 set |
| (8) Installation materials                                            | 1 set |

### **1-3 Project and/or Programme of Other Donors**

The general corporation for Television Zanzibar has not yet received aid from any other country than Japan to help provide television facilities.

Radio Tanzania Zanzibar had received aid from the Chinese Government for the radio broadcasting centre building.

## **1-4 Outline of Development Plan Related to the Project**

### **1-4-1 National Development Plan**

The government of Zanzibar has its own structural development plan (RPFB: Rolling Plan and Forward Budget) 1994/95 - 1996/97. The main targets of this plan are as follows.

- (1) Support for activities of emergency donors in special development projects
- (2) Facilitation of new projects and fast completion of ongoing projects
- (3) Recognition of past economic achievements

### **1-4-2 Development Plan Radio and TV Sectors**

In the national development plan, under the heading of information and broadcasting, there is special mention of radio and television. These mass media are considered of great importance for the economic development of society, since they have considerable impact on public sentiment and opinion, and can provide motivation and incentives.

The government aims in this area are the fostering of cultural identity and the spread of knowledge and know-how. Freedom of information flow across borders is also a consideration.

In particular, the following targets are listed.

- (1) To increase the effectiveness of mass media performance in facilitating the national objectives
- (2) Mobilization of public support for national economic socio-cultural and political development
- (3) To provide comprehensive media coverage of the national culture and tradition
- (4) To promote national unity, peace security and tranquility
- (5) To deliver accurate information to the people
- (6) To provide balanced information between the urban and rural areas
- (7) To provide special broadcasting services in the field of education section
- (8) To enable the possibility of realizing balanced mass media technology transfer as well as technology innovation

- (9) To support the new international information order
- (10) To promote vertical and horizontal coverage of international events as well as local

The government is trying to realize these aims by restoring and overhauling the radio and television broadcasting network, and by providing training opportunities for private media organizations and journalists.

#### 1-4-3 Relation to Similar Projects and Other Assistance Projects

It is the first time that the Zanzibar government has made a request for grant aid.

There was one previous instance of assistance by Japan for television related equipment, as described below.

Material gathering and editing equipment

The following equipment was supplied to Television Zanzibar in the form of technical cooperation:

- One set of editing equipment including two cameras
- One set of S-VHS editing equipment

Since other equipment of Television Zanzibar is old and mostly defective, the above equipment is currently being used for editing tapes from outdoor news gathering activities and tapes made in the makeshift studio. This equipment will continue to be used also after completion of the current project.



## 1-5 Present Status of Implementing Organization

### 1-5-1 Television Zanzibar (TVZ)

The first color TV broadcasts in Africa started in 1973 by TV Zanzibar (TVZ) from Karume House on the Island of Unguja, Zanzibar. The channel was channel 21. Later, broadcasting for channel 9 started from the Island of Pemba.

As the economical conditions at that time for the export of cloves etc. as the source for acquisition of foreign currencies were good, the broadcasting equipment was purchased with funds on hand and broadcasting was executed. Top-grade products for 1973 were gathered, and the economical situation of that time can be seen.

A broadcasting station system using the centralized control system method was built.

However, practically the entire equipment is defective, and broadcasting presently is continued from a temporary studio and an OB van (using the usable equipment on the inside).

The transmission stations are the Masingini transmission station on the Island of Unguja and the Chake Chake station on the Island of Pemba. The Masingini transmission station has transmitted since 1973 with a 5 kW UHF transmitter, but this became defective in 1993, and continuation of the transmissions became impossible. TV Zanzibar introduced a 10 kW transmitter for restoration of the broadcasting. The 5 kW transmitter has remained as a spare transmitter, but it can not be used.

As a viewer service, a community centre is located in the vicinity and aims for diffusion of TV.

#### (Radio broadcasting)

##### (1) Broadcasting on the Tanzania mainland

###### (Short history)

The history of broadcasting on the mainland is outlined in the following.

- 1951 Start of small-scale (200W) shortwave broadcasting from Dar es-Salaam by the government during the era of being a British trust territory.

- 1956 The Tanganyika Broadcasting Service (TBS) set up a shortwave transmitter with an output of 20 kW in Pugu Road in Dar es Salaam. A station building with two studios and a main coordination room also was built, and regular broadcasting was started. At that time, Swahili and English were used for broadcasting.
- 1958 English broadcasts by 10 kW shortwave were started, and at the same time, AM broadcasting also was started on a small scale (250W x 3). The organization also was changed from TBS to the Tanganyika Broadcasting Corporation (TBC) with the purpose of a public broadcasting service.
- 1961 Independence of the Republic of Tanganyika
- 1964 Establishment of the United Republic of Tanzania
- 1965 Establishment of an AM large power station (100 kW) in Kunduchi and start of commercial broadcasting. In this year, TBC changed to the present Radio Tanzania Dar es-Salaam (RTD) and became a government organ under the Ministry of Information and Tourism.
- 1966 Establishment of a shortwave large power station (50 kW x 2) in Mabibo and start of external broadcasting.
- 1973 to 1974 Establishment of AM transmission stations (50 kW) in the regional cities of Mwanza, Arusha, and Mbeya and expansion of the AM broadcasting net by means of a Yen loan from Japan. Two 50 kW transmitters and one 10 kW transmitters were provided in Dar es-Salaam to strengthen the shortwave broadcasting.
- 1988 Two 100 kW AM broadcasting stations were established by free funds cooperation from Japan in Dodoma, during the plan of moving the capital, and in the city of Kigoma on the western border.
- 1990 to 1992 Two 100 kW AM broadcasting stations were built by free funds cooperation from Japan in the southern border cities of Nachingea and Songea.

### Present situation

RTD is broadcasting radio broadcasts on the mainland, and it is under the Ministry of Information and Broadcasting. There are 10 broadcasting stations in the entire country, and 79% of the country is covered.

### (2) Radio broadcasting in Zanzibar

RTZ is under the Ministry for Information, Culture, Tourism, and Youth of the Zanzibar government. Broadcasting was started in 1951 as the Zanzibar Broadcasting Company. In 1964, the name was changed to Voice of Tanzania and Zanzibar, and presently the name is Sauti Tanzania Zanzibar. Radio Tanzania Zanzibar normally is the name used in broadcasts.

The areas around Zanzibar are covered by the transmission stations at Chunbini and Dole. RTD and RTZ have very close connections, and they exchange their programmes for broadcasting.

The number of employees is 186 employees. The Ministry for Information, Culture, Tourism, and Youth on the Island of Pemba houses a recording studio. The recorded tapes are sent to the main station by regular air mail or via telephone lines.

The broadcast programmes cover education, information, entertainment, politics, culture, and commercial programmes.

Employees participate in overseas training in Germany, China, Egypt, etc.

Chunbini AM radio transmission station : 50 kW, 585 kHz

Two 50 kW transmitters, nondirectional antenna

Dole shortwave transmission station : 50 kW, 6,015 kHz

One 50 kW transmitter, nondirectional antenna

### (3) TV Programming

Television Zanzibar was founded in 1973 and currently broadcasts four hours per day from Monday through Friday and five hours per day on weekends. Programming contents are centred around news, education, agricultural development, and public health, with special emphasis given to educational programs. More than 60 percent of all programmes are imported, the rest are domestic productions.

The current project, scheduled for completion in 1996/1997, aims to expand programming and increase the percentage of domestic programmes in the areas of education, training, and news reporting. Also, an extension of daily programming by about 2 hours per day, for a total increase of 14 hours per week is planned.

1-5-2 Operation of TVZ

(1) TV broadcast programmes

The present broadcasts of the Television Zanzibar are

Table 1-5-1 Weekly Broadcast Programme Composition

Time	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
06 :00							
15	1. PHYSICS	1. SESAME STR.	1. DORAMA	1. CHEMISTRY	1. RELIGION (ISLAMIC)	1. CARTOON	1. SPORTS
30	2. ENGLISH LESSON	2. OTHERS	2. ADVENTURE STORIES	2. ENGLISH LESSON	2. OTHERS	2. OTHERS	2. OTHERS
45	3. OTHERS		3. OTHERS	3. OTHERS			
07 :00							
15	1. INTERVIEWS	1. INTERVIEWS	1. CHANNEL AFRICA	1. INTERVIEWS	1. CBN NEWS	1. MICHEZO YETU 15 MIN	1. TOMUABUU MUNGU 15 MIN
30	2. MAGAZINE PROGRAMMES	2. ANNOUNCEMENTO 3. MAGAZINNES	2. OTHERS	2. MAGAZINES 3. ANNOUNCEMENTO 4. OTHERS	2. OTHERS	2. SPORTS	2. STUDIO 7 15 MIN. 3. OTHERS
45	NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN
08 :00							
15	1. ADVERTS	1. ADVERTS	1. MACHI YETU	1. ADVERTS	1. MAONI YETU	1. ADVERTS	1. ADVERTS
30	2. AGRICULTURE	2. JICHO	2. ADVERTS	2. JICHO	2. ADVERTS	2. SPORTS	2. MUSIC
45	3. MGEHI WA WIKI	3. HEALTH	3. DORAMA	3. DEVELOPMENT PROJECTS	3. MICHEZO YETU	3. WEEKLY SCOPE	3. MOVIE
09 :00	4. MICHEZO YETU	4. OTHERS	4. MICHEZ YETS		4. RELIGION (ISLAMIC)	4. OTHERS	4. OTHERS
15	5. URTNA(DOC)		5. OTHERS	4. STASA/ YIWANDA	5. OTHERS		
30							
45							
10 :00	NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN		
15						NEWS LOCAL/FOREIGN	NEWS LOCAL/FOREIGN
30							
45							
11 :00							

The programme composition by types is approximately as shown below.

Table 1-5-2 Broadcasting Time by Programmes (per week)

Childrens programme	420 min.	(23.3%)
Entertainment programme	210 min.	(11.7%)
Religion programme	105 min.	(5.8%)
Adult programme	735 min.	(40.8%)
News	210 min.	(11.7%)
Week-end programme	120 min.	(6.7%)
Total	1,800 min.	(100.0%)

(2) Present situation of the Zanzibar TV station

1) Transmission equipment

a) Island of Unguja, Masingini transmission station

Presently, as continuation of broadcasting had become difficult because of aging, a vacuum tube type UHF 10 kW TV transmitter made by the German company Rohde-Schwartz was purchased with funds at hand and is being used.

However, the 5 kW transmitter presently serving as a spare is the aged transmitter put into service in 1973, and it is to be feared that broadcasting will not be possible in case of defects of the transmitter presently being used. Further, it is necessary to provide a maintenance-free solid-state transmitter with high reliability as the main transmitter for stable broadcasting.

When the programme transmission wireless line to the Chake Chake station on the Island of Pemba is to be broadcast wave reception method, a transmitter output of 10 kW is required for the Masingini transmission station.

b) Island of Pemba, Chake Chake station

The transmitters are two-sets (main/standby) of VHF 5 kW transmitter made by Rohde & Schwartz, and these are operating in good condition. The studio and its equipment presently are defective and are not being used. The studio building and the lighting suspension pipes can be used.

The microwave programme transmission equipment between the Masingini station and the Chake Chake station was used for transmission of programmes from the Masingini station since the start of TV broadcasting in 1973, but presently it is defective. The transmissions of the Masingini station are received, amplified, and relayed. The reception field strength of the Masingini broadcasts is 76 dB $\mu$ /m (60m) and 60 dB $\mu$ /m (3m) at Mizemiumbi and 47 dB $\mu$ /m at Chake Chake station (top of the tower).

The reception condition in regard to the field strength is so that reception is possible with a high-gain reception

antenna, and the picture evaluation has a good picture quality, but with some noise.

However, the quality decreases with strong rain in the rainy season, and considering that the quality is good when the weather is good, but becomes bad when a strong wind blows, improvement should be made.

On the Island of Pemba, where 40% of the population of Zanzibar live, early improvement of the present situation is required.

2) Studio equipment (KARUME House)

This was established in 1973, but presently it is defective and can not be used. The composition of the main equipment is the main studio equipment, service studio equipment, telecine and VTR equipment, and central equipment room equipment.

The Continuity studio is operated with a temporary VTR room, a Satellite reception station, a temporary announcement studio, and an OB van.

a) Continuity studio

New continuity studio equipment is required for the 7.0m x 5.7 main coordination room and the 5.5m x 7.0m studio. The air conditioning equipment is being renewed by the Zanzibar TV station with funds at hand.

The various new equipment units used for OB van, VTR room, and temporary announcement studio can be used for this new continuity studio, but the equipment provided in 1973 and the equipment not used since 1987 can not be used because of capacitor defects and because spare parts can not be obtained.

b) Editing equipment

The editing equipment is a simple two-system U-matic system with added tape format conversion for S-VHS and Beta.

This equipment is composed of products made around 1988, and at the time of execution of this plan, about eight years will have passed, and with sufficient repair, use will be possible for several years.



c) Outside broadcasting van (OB van)

This has been introduced in 1973 and still is being used, but its life has been exceeded and trouble occurs frequently. The key function, the wipe function, etc. of the video mixer for programme transmission are defective, and only a simple switching function is operating. The TV camera and the VTR presently are defective. The OB van has no generator. There was a separate engine generator car, but it already has been disposed of.

d) Microwave link equipment

(Between Karume House and Masingini transmission station)

This has been modernized by the Zanzibar TV station with funds at hand.

(Between Masingini, Kilidi Nduwi, Mizemiumbi, and Chake Chake)

(Between Masingini, Mizemiumbi, and Chake Chake)

These lines on the Island of Zanzibar and on the Island of Pemba have been used since 1973 to transmit broadcast programmes from the Masingini transmission station, but presently they are defective.

(3) Diffusion situation for TV receivers

The number of TV receivers on Zanzibar is 100,000 sets. In the city, a 14 inch TV is being sold for TShs 160,000, and a 20 inch set is sold for TShs 215,000 (according to the questionnaire answers). Further, there are so-called community centres for communal viewing at various locations on the island, and many viewers assemble there during broadcasting time and view the TV broadcasts with deep interest.

### 1-5-3 TVZ's Organization and Number of Staff

The Zanzibar TV Station is a national broadcasting station. In 1973 it started color TV broadcasting as the first station in Africa. It is the TV station of the Ministry for Information, Culture, Tourism, and Youth of the Zanzibar government, and it has 211 employees under the Director.

(Number of employees of the Television Zanzibar)	
Director	1
Deputy director	1
Chief engineer	1
Programme manager	1
Administration manager	1
Engineers, technicians	60
Producers, programme creation engineers, reporters	74
Administration department personnel	52
<hr/>	
Total	211

The organization is shown in Fig. 1-5-1.

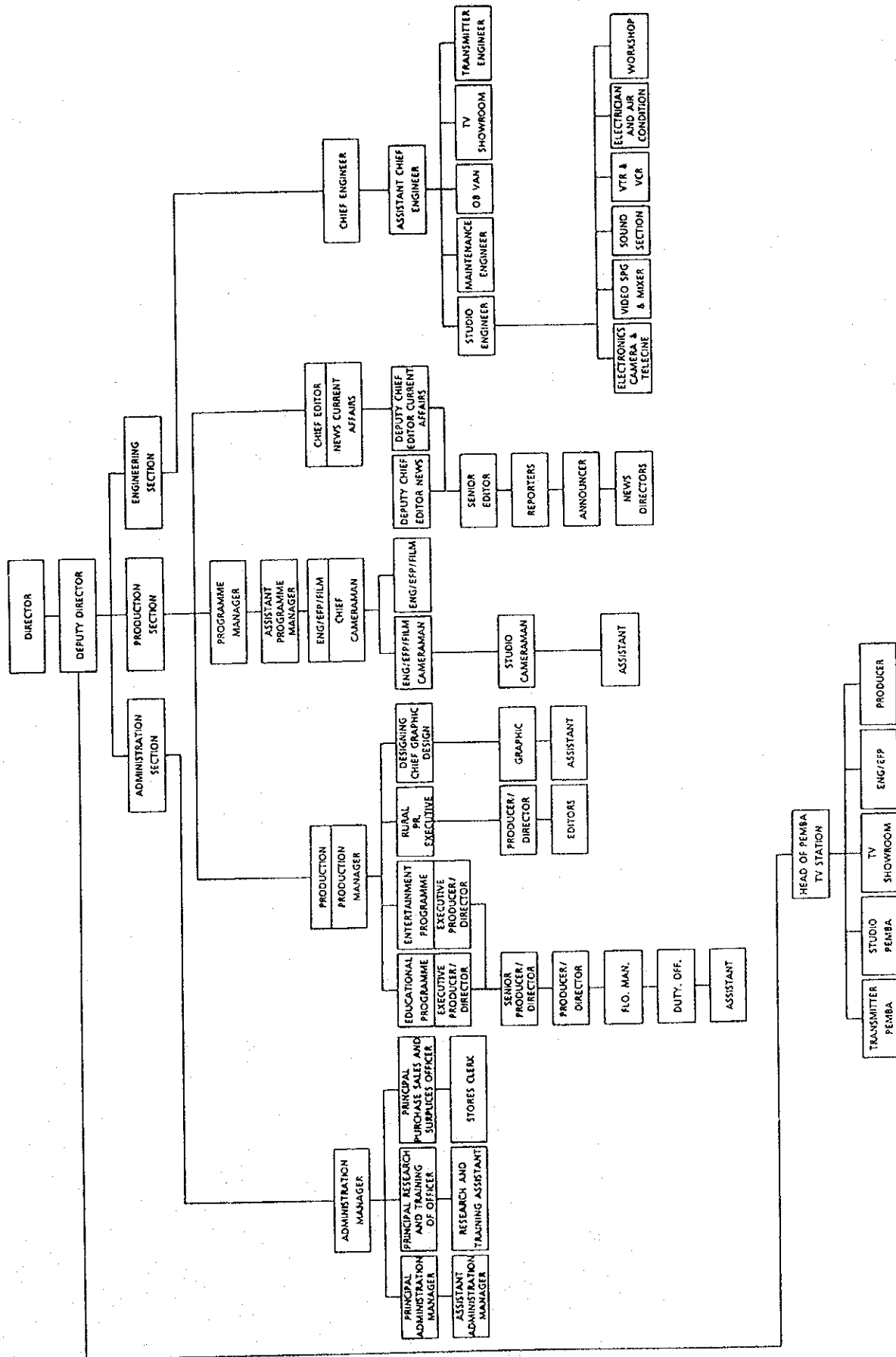


Fig. 1-5-1 Organization of the Zanzibar TV Station



## Chapter 2 Outline of the Project



## Chapter 2 Outline of the Project

### 2-1 Objective of the Project

Television broadcasting in Zanzibar started in 1973 and currently extends to four hours per day from Monday through Friday and five hours per day on weekends. More than 60 percent of all programmes are imported, the rest are domestic productions. The broadcast centre and studio are located in Karume House, from where programmes are relayed by a radio link to the transmitting station at Masingini. Another station at Chake Chake on Pemba island receives broadcasts directly from Masingini for amplification and retransmission. However, most equipment and facilities suffer from severe aging and are not in proper operating condition.

The Tanzanian government is now trying to replace worn equipment in order to restore broadcast capability. It has requested a grant aid from Japan, to allow the continuation of TV broadcasting.

The current plan aims at improving the quality of broadcasting within the range of Television Zanzibar, which in turn will contribute to fostering education and agricultural development. By improving the general level of communications knowledge in Tanzania, the plan will also have benefits in view of extending broadcast activities on the mainland.

## **2-2 Study and Examination on the Request**

### **2-2-1 Scope of Cooperation**

The project is the rehabilitation plan on the transmission system which ensures broadcasting service including Pemba Island and on the studio system of Karume House. The implementation of the project is divided into two phases. The initial request from the Government of the United Republic of Tanzania was the total rehabilitation plan for the almost superannuated facilities to continue their television broadcasting services, but some of them were unable to continue their mission and had been renewed by their Government budget.

However, it is indispensable to equip the stand-by transmitter for the continuation of a stable broadcasting service, and is necessary to improve both the programme quality and quantity.

In the following, consideration of the project outline and the implementation of the Basic Design Study shall be made under the condition of a grant aid from the Government of Japan.

### **2-2-2 Study and Examination on the Request**

As for the major facilities of the Television Zanzibar, there is a TV centre(Karume House) which contains studios in Zanzibar Island. Broadcasting programmes are sent from the TV centre to Masingini transmitting station by a programme transmission link.

The transmitted programmes from Masingini are received and retransmitted in Penba Island. As to the equipment, almost of it is in the wear-out failure period and are easy to meet operation failure, much of the equipment for transmission are especially is especially poor and easily leads to the interruption of transmission.

The Government of the United Republic of Tanzania has requested the grant aid cooperation to the Government of Japan for the rehabilitation of the superannuated equipment above mentioned to carry on its TV broadcasting activity.

The initial request is described in chapter 1, 1-2 Outline of the Request and Major component, and covers the implementation plan on the broadcasting facilities of Television Zanzibar.



However, it is considered appropriate to change the equipment composition on the subject mentioned following due to the conditions concerned.

(1) Masingini transmitting station

In January 1993, a German-made 10-kW tube type television broadcast transmitter (Rohde & Schwartz) was installed as backup equipment. However, possibly for contract reasons, technology transfer regarding measures in case of operation problems was not carried out properly at the time of installation. In September 1994, acceptance testing was performed, in the course of approval testing for equipment by this manufacturer in various African countries.

After installation, the transmitter has broken down repeatedly. Although restored to service, the current condition of the transmitter cannot be considered stable. Repair procedures are not firmly established, and there is a lack of replacement parts and spare units (possibly because the Tanzanian side acquired the transmitter in the course of an emergency purchase). Therefore a long time is required to restore operation in case of a failure.

The current backup unit is the 5-kW transmitter installed in 1973, but it may not be usable for broadcasting should the need arise.

In order to assure stable broadcasting capability, it is therefore essential to install a highly reliable, modular, maintenance-free transmitter as the main unit.

If programme transfer to the station at Chake Chake on Pemba island is to be carried out using a regular broadcast signal, the required output power for the Masingini transmitter is 10 kW.

(2) Chake Chake station on Pemba island

This station uses two Rohde & Schwartz 5-kW VHF transmitters (one main and one spare) which are in good operating condition. The studio and equipment are currently defective, but the studio building and lighting framework are usable. A microwave link for programme transmission between Masingini transmitting station and Chake Chake station was established in 1973, at the start of television broadcasting, but it is currently defective. Therefore Chake Chake station receives the regular broadcast signal from Masingini transmitting station and amplifies it for retransmission. However, in

case of heavy rains or strong wind, picture quality deteriorates, and it is therefore desirable to improve the reception facilities, especially in view of the fact that 40% of the population of Zanzibar live on Pemba island.

(3) Programme transmission link (Karume House to Masingini transmitting station)

A programme transmission link was requested from Karume House to Masingini transmitting station. On the first request, renewal by self finance on 1993. The equipment structure of the standby system is in good operation, and it is not necessary renew the programme transmission link.

(4) Vehicles

These are necessary for news gathering, maintenance for transmitting station and diffusion of TV viewing.

Regarding the execution of this project, it shall be judged appropriate to be executed on Japanese grant aid due to the above examination, and that effectiveness of this project is agreed on a system of grant aid, and that its effectiveness, reality and execution ability of recipient country are confirmed.

## 2-3 Project Description

### 2-3-1 Execution Agency and Operational Structure

The execution agency for this plan is the Zanzibar TV station, but the plan is being advanced with cooperation by the Ministry for Information, Culture, Tourism, and Youth as the superior agency. The administration after completion of the project also will continue to be done by the Zanzibar TV station, but with cooperation by the Ministry for Information, Culture, Tourism, and Youth and the Education Ministry, it will be possible to create and edit cultural information programmes with substantial contents, and administration will take place with close joint relations with related agencies and ministries.

The Zanzibar TV station as the executing agency started TV broadcasts in 1973 and has over 20 years of experience. It was also the first African station to broadcast color broadcasts, and it is showing a desire to improve the quality and the quantity of the programmes and to expand the broadcast programmes.

2-3-2 Budget Plan

Table 2-3-1 Expenditure of TVZ

(Unit : TShs)

Details	Actual 91/92	Actual 92/93	Actual 93/94	Actual 94/95
Personal Emoluments	12,015,000	17,643,000	21,310,000	29,423,000
Transport and Traveling	3,911,000	2,641,000	3,534,000	3,840,000
Office Expenses	1,619,000	383,000	3,984,000	4,930,000
Office Electricity	761,000	0	1,640,000	1,500,000
Other	858,000	383,000	2,344,000	3,430,000
Vehicles Maintenance and Running Expenses	4,402,000	4,328,000	5,018,000	4,500,000
Miscellaneous	3,023,000	22,755,000	6,845,000	7,302,000
Upkeep of Station and Establishment	249,000	0	732,000	500,000
Machinery and Equipment Maintenance	222,091,000	1,738,000	20,800,000	5,600,000
Special Expenditure	0	706,000	1,271,000	6,780,000
House Rent	0	0	72,000	0
Seminars and Conference	196,000	201,000	236,000	300,000
General Training	465,000	3,410,000	679,000	1,200,000
Information and Broadcasting Service (Studio Programme Service)	217,000	124,000	312,000	370,000
Total	248,188,000	53,929,000	64,793,000	64,745,000

### 2-3-3 Operation and Maintenance Plan

#### (1) Personnel plan

The minimum number of staff required for studio operations within the framework of the current project is shown in the Table 3-3-2 below.

Table 2-3-2 Personnel Required (Personnel Plan)

Personnel	Continuity studio	Post Production	Outdoor equipment coverage	Editing equipment	Total
Producer	2	1	4	3	10
Technical director	1	1			2
Video Engineer	1				1
Cameraman	2	1	4		7
Video Switcher	1				1
Lighting Director	1		4		5
Audio Mixer	1		4		5
Editing Crew		1		3	4
Personnel Total	9	4	16	6	35
2 shifts	18	8	32	12	70

It should be executed by present personnel for these personnel.

The current staff structure is suitable to cover the above requirements.

#### (2) Maintenance system

Since the skill level of current servicing and maintenance personnel is high, it will be possible to carry out regular maintenance within the established framework. This will require proper on-the-job training and thorough explanation of checking and maintenance procedures by Japanese technicians at the time of installation.

(3) Budget plan

The following is an estimated increase of annual spending, including the cost for additional personnel, after the project has been completed:

Electricity charges	TShs	9,486,000.-
Video tapes	TShs	6,750,000.-
Light bulbs for studio lighting	TShs	2,703,000.-
Maintenance and repair	TShs	50,000,000.-
Vehicle operation	TShs	1,711,000.-
<u>Total</u>	<u>TShs</u>	<u>25,650,000.-</u>

1) Calculation of electricity charges

Karume House

Consumption	:	Estimated at 850 kWh/day
Rate	:	TShs 31/kWh
Monthly charges	:	TShs 790,500 (= 850kWh × 30days × TShs 31)
Annual charges	:	TShs 9,486,000 (= TShs 790,500 × 12months)

2) Calculation of expenses for purchasing video tapes

a) Tapes for studio production

In all, 22 programmes are broadcast a week (three 30-minute programmes × 4 days for Monday to Friday, five 30-minute programmes × 2 days for Saturday and Sunday).

Video tapes are used repeatedly. For each program they are recorded, edited and broadcast and preserved for a short period of time. If this cycle is repeated every four weeks, video tapes will exhaust their service life after one year of use and will then be discarded.

This means that the number of video tapes needed each year would be 246 (66 × 4 weeks). But considering that some tapes will be preserved for a longer period of time and that there should also be some spare video tapes, about 400 video tapes will be needed each year.

The number of video tapes needed yearly

: Estimated at 400 rolls

Roll for one 30-minute tape

: TShs 7,500/rolls

Annual cost for the purchase of video tapes

: TShs 3,000,000

(= 400 rolls × TShs 7,500)

b) Tapes for outdoor coverage

Assuming that each of the three ENG systems will be operated for one hour a day and that the systems will be repeatedly used for a cycle of two weeks, the following equation is obtained:

$4 \text{ rolls/day/one system} \times 4 \text{ ENG} \times 7 \text{ days} \times 2 \text{ weeks} =$   
224 rolls

Since video tapes for ENG systems should be supplied twice a year, the number of tapes to be needed each year will be as follows:

$224 \text{ rolls} \times 2 \text{ times} = 448 \text{ rolls}$

Generally speaking, programs to be taped by ENG systems tend to be the ones preserved for longer periods of time. When this is taken into consideration, about 500 rolls in all would be necessary for a year.

The number of ENG tapes needed each year

: Estimated at 500 rolls

Roll per one 20-minute tape

: TShs 7,500/rolls

Annual cost for the purchase of ENG video tapes

: TShs 3,750,000

(= 500 rolls × TShs 7,500)

In all, the annual cost of purchasing video tapes is estimated at TShs 6,750,000.

3) Calculation of expenses for light bulbs for studio lighting

a) Continuity studio

Operation hours : Estimated at 1,456 hours  
(= 4hours × 7days × 52weeks)  
Average electric power needed for lighting : Estimated at 20kW  
Annual consumption : 14,560kWh  
(= 10kW × 1,456hours)  
Average life of bulb : Estimated at 300 hours  
Price for one 1kW bulb : TShs 30,000  
Annual cost for bulbs : TShs 1,455,000  
(= 14,560kWh ÷ 300hours  
× TShs 30,000)

b) Post production

Operation hours : Estimated at 2,496 hours  
(= 8hours × 6days × 52weeks)  
Average electric power needed for lighting : Estimated at 5kW  
Annual consumption of electricity for lighting : 12,480kWh  
(= 5kW × 2,496hours)  
Average life of bulb : Estimated at 300 hours  
Price for one 1kW bulb : TShs 30,000  
Annual cost for bulbs : TShs 1,248,000  
(= 12,480kWh ÷ 300hours  
× TShs 30,000)

From the above, the cost of purchasing light bulbs for lighting is estimated at TShs 2,703,000.

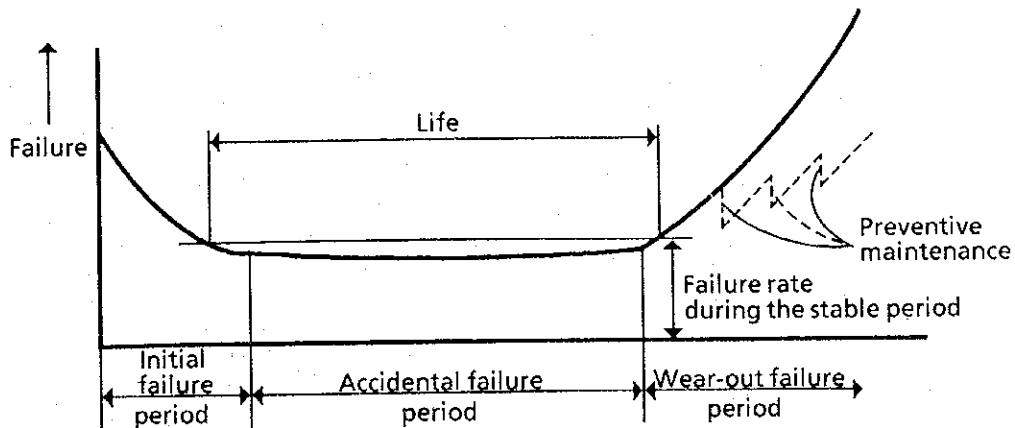
(Maintenance and management expenses)

All the items of equipment to be provided under this project will be those using semiconductors and, therefore, unlike vacuum tube types, they have no elements requiring periodical replacement. However, in the case of video tape recorders and audio tape recorders, there is the need for periodical changing



of their heads as the heads become worn out. Also indispensable are the supplies of such consumables as fuses and lamps.

Generally speaking, failures of broadcasting equipment occur at the following rate with the passage of time:



① Initial failure period

The failures occurring during this period are initial failures caused by shortcomings in designing or manufacture. So, during this period, it is important to ensure the speedy exchange of information between the user and the supplier so that necessary measures may be taken quickly to detect the cause of the failure.

② Accidental failure period

After improvements are made during the above-mentioned initial failure period, the failure rate thereafter will be kept at a certain low level. The service life of a unit of equipment is the period when the failure rate is maintained below the prescribed level, prior to entering the next period, that is, the wear-out failure period.

③ Wear-out failure period

After the accidental failure period in the service life of the parts, unit devices or systems is over, the failure rate will again go up.

The failures occurring during this period are caused by the wear and deterioration of the parts constituting the

device or the system. By taking appropriate preventive maintenance measures, it is possible to reduce failures and thereby extend, to some degree, the life of the device or the system.

The failures during the accidental failure period, which constitute the greater part of the service life of a device or a system being used, occur at any time at random. The failure rate is constant in terms of duration and is relatively low. Yet, the conditions of the failures are extremely wide-ranging. These failures are heavily affected by stresses from such environmental conditions as the conditions of use, temperature and humidity. Most devices and systems can be used in fairly good condition for ten years on average, if they are periodically maintained.

It is necessary to change every year: 1,000 hours—that is supposing for high usage times for installing 10 VTR sets at continuity studio, post production and editing system.

VTR head, parts of overhaul

· VTR head	¥ 80,000
· Running parts (motor, etc.)	¥ 15,000
· <u>Function parts</u>	<u>¥ 5,000</u>
Total	¥ 100,000

¥ 100,000/set × 10 sets = ¥ 1,000,000 (TShs 5,000,000)

This corresponds to double the usual budget. It should be necessary to secure at least the above budget due to expenses for procurement of spare parts so as to make sure that the supply of spare parts of after three years expire of supply of spare parts for two years.

Further, it will though of not big responsibility, less than 10% for amount increase compared with total budget of Television Zanzibar.

5) Vehicle operation

It is estimated that fuel expense for 4WDs at 50 km/day and minibus 30 km/day will be as follows,

• 4WD (50 km/day × 5 days × 4 weeks ÷ 8 km/ℓ) × 12 months

= 1,500ℓ

1,500ℓ × TShs 230 = TShs 345,000

TShs 345,000 × 4 cars = TShs 1,380,000

• Minibus (30 km/day × 5 days × 4 weeks ÷ 5 km/ℓ) × 12 months

= 1,440ℓ

1,440ℓ × TShs 230 = TShs 331,200

Total      TShs 1,711,200

## 2-4 Technical Cooperation

It is considered that the general corporation for Television Zanzibar shown in section 2-3-3, operation and Maintenance plan, the corporation already has a plan to educate and train personnel through training in and out of the station. In addition, the current staff capabilities to operate and maintain equipment are at a rather high level, in view of the fact that they are managing to ensure broadcasting and maintaining the equipment that is reached durable length of time about 20 years old. Further, two overseas cooperation volunteers have aided with the equipment maintenance and programme creation, and it can be recognized that the technological level of the staff of the Zanzibar TV station has improved. The corporation is hoping that Japan will send experts to Tanzania to raise the general technical level of programme production.

The actual results of dispatch is as follows.

Table 2-4-1

Beginning Year	Finish Year	Classification
7 OCT. 1980	6 OCT. 1983	Electrical equipment
29 MAR. 1987	28 SEP. 1989	Electrical equipment
2 AUG. 1987	1 AUG. 1990	Art
13 DEC. 1991	12 JUN. 1994	Electrical equipment
8 DEC. 1992	7 DEC. 1995	Audio visual education

## Chapter 3 Basic Design



## Chapter 3 Basic Design

### 3-1 Design Policy

For the basic design of this plan, the design was executed according to the following policy under consideration of the present operation of the Zanzibar TV station and future plans and with ease of operation and maintenance, economy, and setting of a suitable scale without waste as important themes.

- The scale of the equipment shall be as required by the contents of the plan, but limited to the essentials, and it shall match the local work environment and work policy.
- Existing usable equipment shall be introduced into the new system as far as possible, and efficiency of the total system shall be aimed for.
- For decision of the types and specifications of the equipment, special emphasis shall be placed on the ease of servicing and management, simple construction and high durability, and the easy obtaining of spare and consumption parts.
- The equipment composing the system of this plan shall be standardized as far as possible to aim for ease of operation and maintenance and reduced servicing and operation expenses.
- Receiving equipment of Chake Chake station should be durable to avoid the strong force of the wind, based on maximum velocity (30 km/h) of the wind of the past.
- The design for studio system should be use of existing equipment, to get most effectively benefit that is to intend complete of system for agreement on objective of project.  
Equipment arrangement not use fixed equipment as soon as possible, basic policy is portable and moving type, it should be professional equipment (CATV, etc.) for Karume House studio equipment due to easy maintenance and operating cost down.

These are the main of the S-VHS VTR, and considerations economical should be make to standardize tape format by use of the S-VHS type format.

Further, the equipment should be standard design that is easy to operate for the engineers of Television Zanzibar, and should be durable and high reliability.

At the time of investigation of the equipment parts, introduction of the following equipment shall be considered on the basis of the above design policy.

(1) Introduction of 1/2 inch tape VTRs

Presently, VTRs for tapes with a width of 2, 1, 3/4, and 1/2 inch are being used by TV Zanzibar.

However, the VTRs used for this plan also must consider programmes recorded by 3/4 inch U-matic VTRs, and the system shall be designed so that programmes according to each method can be sent out. However, as it is believed that the use frequency of 3/4 inch VTRs will decrease in the future, the present equipment shall be used at different locations.

General household VTRs also use 1/2 inch tape, but the VTRs to be introduced according to this plan shall be S-VHS for business use.

(2) Introduction of CCD cameras

CCD (Charge Coupled Devices) are a type of solid-state picture image sensor elements. In recent times, there has been notable improvement of CCDs, and cameras using CCD elements are being used frequently instead of cameras using the conventional picture tubes. In comparison to the picture tube method, there are considerable merits like good picture quality, small weight, solidity, easy handling, semipermanent life, easy maintenance, etc.

With this plan, only cameras using CCDs shall be introduced.

Further, standardization with various studio and reporting equipment shall be obtained, and effective use shall be possible.



### 3-2 Study and Examination of Design Criteria

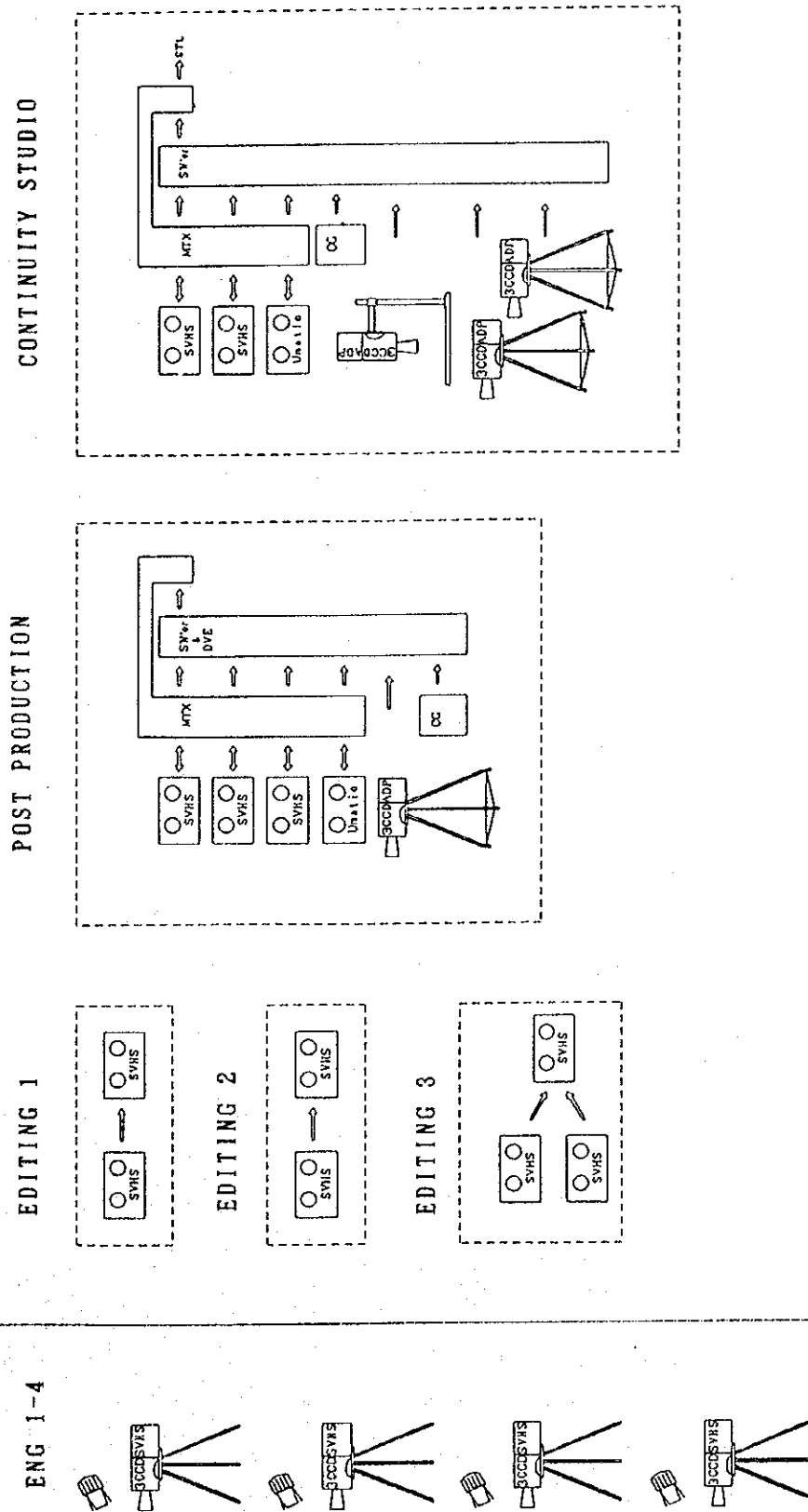


Fig. 3-2-1 Studio System



In regard to the equipment design, the operation of the various installations shall be taken into consideration, as Fig. 3-2-1 studio system, and the following conditions shall apply.

(1) Transmission equipment

The transmission stations are located on top of the low hill Masingini at the centre of the Island of Unguja and at Chake Chake at the centre of the Island of Pemba. The transmitter installation place shall be the installation place of the 5 kW transmitter. Connection shall be made to the existing transmitter switching panel as the main transmitter, and the installed transmitter shall be used as the spare.

A solid-state 10 kW UHF TV transmitter with high reliability and easy maintenance is planned. The channel shall be the European channel 21. The installed 10 kW transmitter shall be become a spare in standby operation. The existing transmitter switcher and dummy load shall be used. The transmission output shall be 10 kW, as broadcasting wave reception is used for the transmissions to the Chake Chake station on the Island of Pemba.

(2) Off-air receiving equipment

It shall be renewal super for receiving block line of Chake Chake station.

- Receiving antenna gain shall be more than 25 dB
- To renewal for Booster and receiver

(3) Continuity studio

This studio shall be used for broadcast programme transmission according to the daily programme time sheet and for live news broadcasts and creation of simple programmes. Creation of small scale folk music, traditional arts, dance, and listener participation programmes and dramas can be created.

The continuity studio of the Television Zanzibar station also shall serve as the main coordination equipment, and the main coordination equipment shall be used for distribution management and monitoring for indoor and outdoor video and audio signals and for final selection of the programmes to be sent to the transmission stations, so that it is the heart of the broadcasting station.

The main equipment to be installed here is the distribution switcher managing the distribution of signals in the station, the master switcher selecting the program to be transmitted by the transmission stations, the master sync signal generator becoming the sync reference for the video signals inside the station, etc.

In the master control room, the above named distribution switcher is used to distribute the playback output from the various tapes, the external signals of the station (Satellite, OB van, etc.), the studio output, etc. to the required locations while monitoring the signal quality at the same time.

As shown below, there are 10 input types to the video switcher.

Camera	2
VTR	3
Character generator	1
External input	2
Station name generator	1
Color bar	1

Video monitors shall be arranged in the following quantities.

• For the auxiliary coordination room

14 inch color monitor	11 sets
Camera	2 sets
VTR	3 sets
Character generator	1 set
External input	2 sets
Table top still camera	1 set
Station name generator	1 set
Time generator	1 set
15 inch monitor	1 set
10 inch high-resolution camera monitor	9 sets
20 inch color monitor	3 sets
Video monitor	1 set
Video switcher review	1 set
Video switcher main line output	1 set
14 inch TV receiver	1 set

29 inch color monitor

1 set

Inside the studio

Three VTRs are planned so that program output from playback of video tapes can be executed positively. One station name generator and a one time generator shall be installed in this studio, and insertion of the station name or the time shall be possible between programs.

In addition, a character generator is planned for superimposing of titles, announcements, etc.

As the following input equipment is being considered for the audio coordination desk, the number of input channels shall be 12 channels.

Microphone

Tape recorder/player

Cassette tape recorder/player

External input

As additional audio equipment, a tape recorder/player, a cassette tape recorder/player, a microphone set (including wireless microphone), and an intercom set for program creation shall be installed.

The existing equipment shall be used for studio illumination, but lighting bulbs shall be provided.

Two U-matic VTR, two Betacam VTR and two professional S-VHS VTRs shall be installed in the sub control room of continuity studio.

The continuity studio shall be located at the centre of the ground floor of Karume House, and the floor space shall be approximately 40m<sup>2</sup>. The auxiliary coordination room shall be beside it, and coordination of video, audio, and lighting shall be executed.

#### (4) Post production equipment

This is the equipment for editing of tapes recorded in the service studio or outdoors to produce studio insert material or finished programs. Special effects and other performance effects are produced.

The post production room shall be set up on the ground floor at the location of the present U-matic editing room, and the U-matic editing equipment shall be moved.

(5) ENG/EFP system

So-called ENG equipment with VTR and camera combined into a single body, microphones, lighting equipment, etc. are planned for the purpose of visiting elementary, junior high, and high schools for production of education programs, visiting ministries, companies, the Island of Unguja, the Island of Pemba, and other locations for news programs, discussion programs, and introduction of local customs to deepen the mutual understanding of the population, etc. Battery operation shall be possible to maintain mobility.

- Small and light-weight combinations of camera and VTR.
- The picture quality shall be so that use together with material created in the studio is possible.
- In addition to free-hand use, use on a tripod also shall be possible.
- Clear recording capability and mixing function for outdoor voices and sound effects.
- It shall be possible to view the recorded material immediately.
- Lighting function.

(6) Editing equipment

This is electronic editing equipment to finish the material gathered by the outdoor recording equipment to finished programs.

One set of A/B roll editing equipment and two sets of 1:1 editing equipment are planned for editing the material recorded by the ENG/EFP equipment.

1) 1:1 editing equipment

This is a most basic editing system using two VTRs for playback and recording. Two sets of editing equipment using S-VHS VTRs for editing of material recorded mainly by ENG/EFP equipment are planned.

2) A/B roll editing equipment

While the above mentioned 1:1 editing uses one VTR for playback, A/B roll editing uses two playback VTRs. This makes it possible to combine and edit the material from two tapes, so that more complicated programs can be edited.

(7) Vehicle

It shall be used for programme gathering, maintenance for transmitting station and local TV viewer service. There are necessary four cars due to use for two cars for news gathering and transmitting station maintenance, one car for programme production of educational programme and one car for gathering of Pemba Island and/or news gathering. It is necessary one car for minibus due to shift for production staffs and actors for drama programme production.

- 4WD car shall be short wheel type as engine capacity 2,500 cc
- There are 26 passengers as minibus. It shall be 26 passengers.

(8) Measuring equipment and tools

Suitable daily maintenance work is important to maintain the equipment in a good condition, and this required measuring equipment with which the equipment status can be grasped accurately. Oscilloscopes, test signal generators, audio characteristic testers, circuit meters, etc. with easy use, reliability, and solid construction shall be provided according to the required maintenance items.

Also, standard tool sets composed of screwdrivers, pliers, nippers, soldering irons, and special tools shall be prepared.

(9) TV receivers for public information and diffusion

There are 78 places community centre as for Table 4-4-1 which is divided three region and ten district in Zanzibar.

It should be renewal of TV receiver for reached durable years, it should be supply ten sets TV receiver for objective as for transmission to resident's for news, education, culture/information programme, etc.

Table 4-4-1

(Unit : Place)

	Region	District	Community Centre
Unguja Island	3	6	54
Pemba Island	2	4	24
Total	5	10	78

## (10) Spare parts

The detailed contents shall be decided at the time of the execution design, but at least the following basic parts shall be included. Except for consumption parts, the quantities shall be so that operation for about two years shall be possible without supply of parts. The consumption of spare parts by the Zanzibar TV station during this time shall be understood, and considerations shall be made for budget measures.

Main equipment modules and units	1 set
Relays, switches	1 set
Lamps, fuses	1 set
Semiconductors which can be exchanged at the site	1 set



### 3-3 Basic Plan

#### 3-3-1 Equipment Plan

The outline of the main equipment list and specifications are as follows.

- |                                                        |           |
|--------------------------------------------------------|-----------|
| (1) Masingini transmitting station                     | One set   |
| 1) UHF 10 kW TV transmitter                            | One set   |
| 2) AVR (inc. over voltage cut off) 50 kVA              | One set   |
| 3) Isolation transformer 60 kVA                        | One set   |
| (2) Programme transmission link                        | One set   |
| (Masingini transmitting station - Chake Chake station) |           |
| 1) Receiving antenna                                   | Two sets  |
| 2) Booster                                             | Two sets  |
| 3) Receiver                                            | Two sets  |
| 4) Demodulator                                         | Two sets  |
| (3) Continuity studio (Karume House) system            | One set   |
| 1) TV colour camera (inc. Head, CCU, Lens)             | Two sets  |
| 2) Tripod                                              | Two sets  |
| 3) 14" monitor                                         | Two sets  |
| 4) Teleprompter                                        | One set   |
| 5) Video switcher                                      | One set   |
| 6) Wave form monitor                                   | One set   |
| 7) Vector scope                                        | One set   |
| 8) Colour master monitor                               | One set   |
| 9) Video jack panel                                    | One set   |
| 10) Video distribution amplifier                       | Four sets |
| 11) Umatic VTR                                         | Two sets  |
| 12) Betacam VTR                                        | Two sets  |
| 13) S-VHS VTR (R/P)                                    | Two sets  |
| 14) Wave form monitor                                  | Two sets  |
| 15) Table top stile camera                             | One set   |
| 16) Character generator                                | One set   |
| 17) Time super generator                               | One set   |
| 18) Monitor equipment                                  |           |
| a) 20" monitor (line)                                  | Two sets  |

b) 14" monitor (input)	Nine sets
c) 29" monitor (studio)	One set
d) Cart for monitor	One set
e) Sync. signal generator	Two sets
19) Video sync. distribution	One set
20) Audio mixer equipment (12 CH)	One set
21) Audio monitor	Two sets
22) Tape recorder	One set
23) Cassette tape recorder	Two sets
24) CD player	One set
25) Monitor equipment for the above	One set
26) Audio distribution	One set
27) Microphone and stand	
a) Condenser mic	Two sets
b) Liverlile mic	Two sets
c) Dynamic mic	One set
d) Table stand	Two sets
e) Floor stand	Two sets
28) Clock	Two sets
29) Rack	Four sets
30) Console	Three sets
31) Monitor shelf	One set
32) Intercom system for production	One set
33) Programme switching system	
a) V/A switcher 10:1	One set
b) 10" colour monitor	One set
c) TV receiver 14", w/antenna	One set
34) Lighting lump	One set
35) cyclorama	One set
36) Programme recording tape, etc.	One set
(4) Post production equipment	
1) Umatic VTR	One set
2) S-VHS VTR	Three sets
3) Editing controller	One set
4) TV Colour camera (inc. Head, CCU, Lens)	One set
5) Tripod	One set
6) Video switcher	One set

7) DVE (Digital Video Effect)	One set
8) Video typewriter	One set
9) Wave form monitor	One set
10) Vector scope	One set
11) 15" colour monitor	Eight sets
12) Sync. signal generator	One set
13) Audio mixer	One set
14) Cassette recorder	One set
15) Dynamic microphone	One set
16) Table mic stand	One set
17) Announcer desk	One set
18) Audio amplifier	One set
19) Monitor speaker	Two sets
20) Rack	Two sets
21) Console	One set
22) Lighting equipment	One set
(5) ENG/EFP system (S-VHS, handy type, PAL)	Four sets
1) VTR camera	Four sets
a) TV colour camera	Four sets
b) S-VHS dockable type	Four sets
c) Condenser mic	Four sets
d) Battery, charger	Four sets
e) Tripod	Four sets
2) Portable audio mixer	Two sets
3) Portable monitor equipment	Four sets
4) Portable lighting equipment	Four sets
(6) Editing system	One set
1) 1:1 Editing system	Two sets
a) 1/2" VTR (R/P)	Two sets
b) 1/2" VTR (DT/P)	Two sets
c) Editing control equipment	One set
d) 15" monitor	Four sets
e) editing table	Two sets
2) A/B roll editing system	Two sets
a) 1/2" VTR (R/P)	One set
b) 1/2" VTR (DT/P)	Two sets

c) Editing control equipment	One set
d) Special effect equipment	One set
e) Audio mixer	One set
f) Wave form monitor	One set
g) Vector scope	One set
h) Cassette recorder	One set
i) 15" monitor	Three sets
j) Audio amplifier	One set
k) editing table	One set
(7) AVR (60 kVA) included over voltage cut off switch	One set
(8) Air conditioner (split type)	Four sets
(9) Measuring equipment and tools	
1) Oscilloscope, cart	Three sets
2) Wave form monitor	One set
3) Vector scope, cart	One set
4) Test signal generator	One set
5) Audio test Measuring equipment	One set
6) Circuit tester	Five sets
7) Tools	Five sets
(10) TV receivers for public information and diffusion	Ten sets
(11) Vehicle	
1) 4WD	Four cars
2) Minibus	One car

### 3-3-2 Basic Design Drawing

- FIG. 3-3-1 SITE LAYOUT OF MASINGINI TRANSMITTING STATION
- FIG. 3-3-2 FLOOR LAYOUT OF MASINGINI TRANSMITTING HOUSE
- FIG. 3-3-3 FLOOR LAYOUT OF ENGINE GENERATOR HOUSE AT MASINGINI TRANSMITTING STATION
- FIG. 3-3-4 SITE LAYOUT CHAKE CHAKE STATION
- FIG. 3-3-5 FLOOR LAYOUT OF TRANSMITTER ROOM AT CHAKE CHAKE STATION
- FIG. 3-3-6 SITE LAYOUT OF KARUME HOUSE
- FIG. 3-3-7 FLOOR LAYOUT OF KARUME HOUSE (GF)
- FIG. 3-3-8 EQUIPMENT LAYOUT OF CONTINUITY STUDIO
- FIG. 3-3-9 LIGHTING LAYOUT OF CONTINUITY STUDIO
- FIG. 3-3-10 EQUIPMENT LAYOUT OF POST PRODUCTION ROOM
- FIG. 3-3-11 FLOOR LAYOUT OF KARUME HOUSE (1F)
- FIG. 3-3-12 EQUIPMENT LAYOUT OF EDITING ROOMS
- FIG. 3-3-13 FLOOR LAYOUT OF KARUME HOUSE (2F)
- FIG. 3-3-14 SCHEMATIC DIAGRAM OF CONTINUITY STUDIO VIDEO SYSTEM
- FIG. 3-3-15 SCHEMATIC DIAGRAM OF CONTINUITY STUDIO AUDIO SYSTEM
- FIG. 3-3-16 SCHEMATIC DIAGRAM OF POST PRODUCTION SYSTEM
- FIG. 3-3-17 SCHEMATIC DIAGRAM OF EDITING SYSTEM



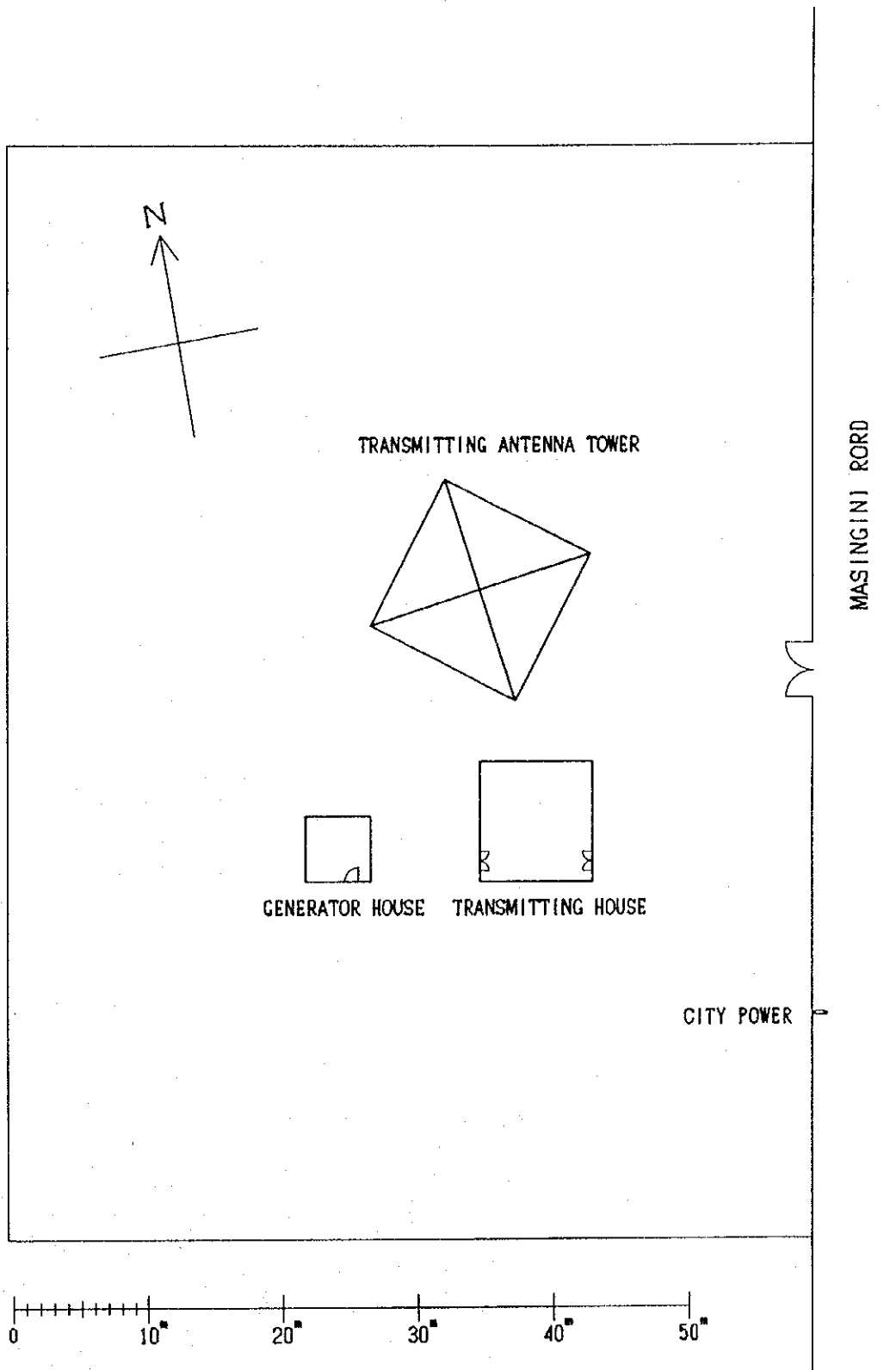
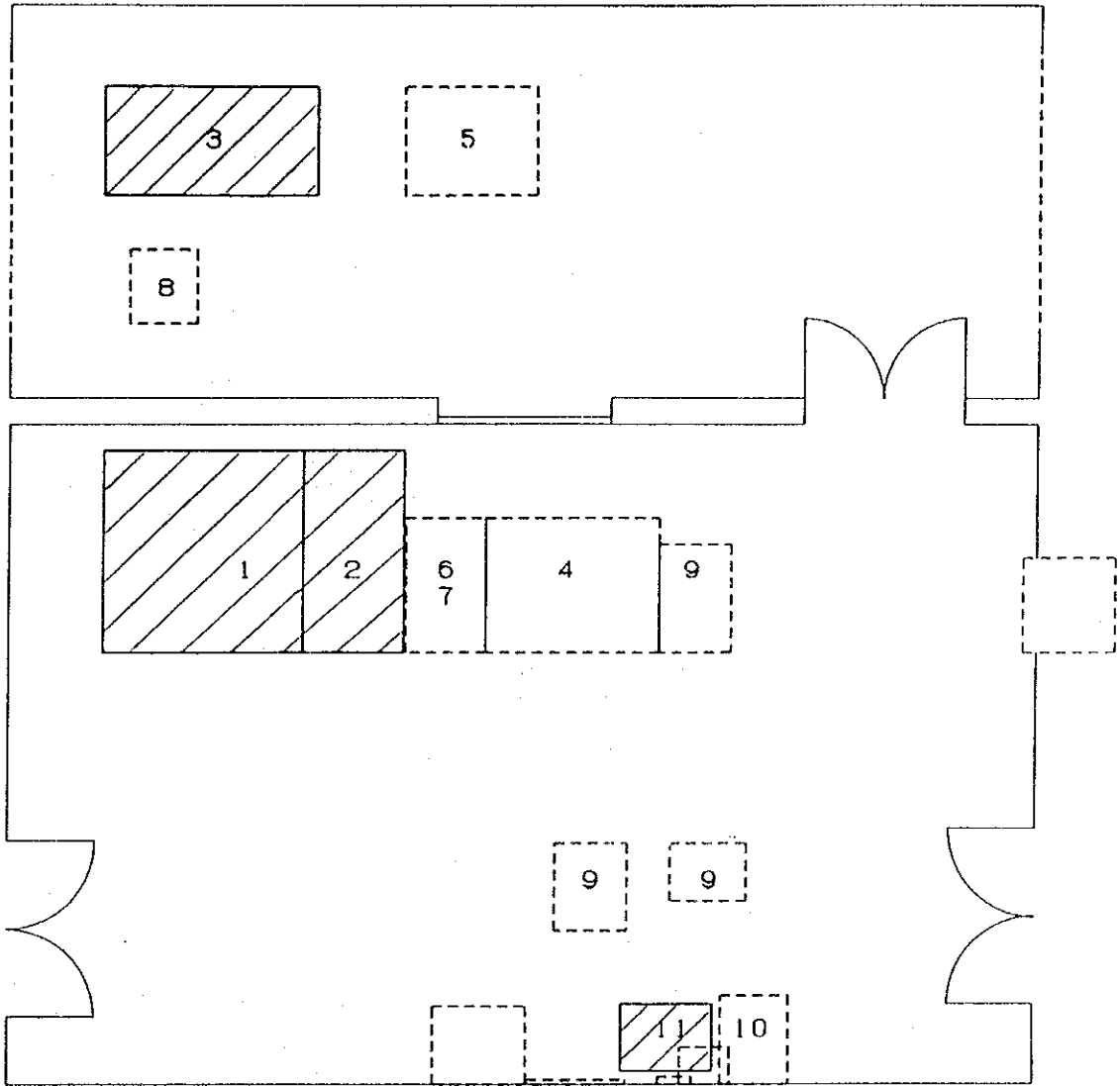


FIG. 3-3-1 SITE LAYOUT OF MASINGINI TRANSMITTING STATION







1. 10kW TV TRANSMITTER(TX-a)
2. CIN(TX-a)
3. BLOWER(TX-a)
4. 10kW TV TRANSMITTER(TX-b)
5. BLOWER(TX-b)
6. COAXIAL SWITCH (TX-a, b)
7. 10kW DUMMY LOAD(TX-a, b)
8. WATER COOLING FAN FOR DUMMY LOAD(TX-a, b)
9. PROGRAM INPUT EQUIPMENT(TX-a, b)
10. AVR(TX-a)
11. AVR(TX-b)

FIG. 3-3-2 FLOOR LAYOUT OF MASINGINI TRANSMITTING HOUSE



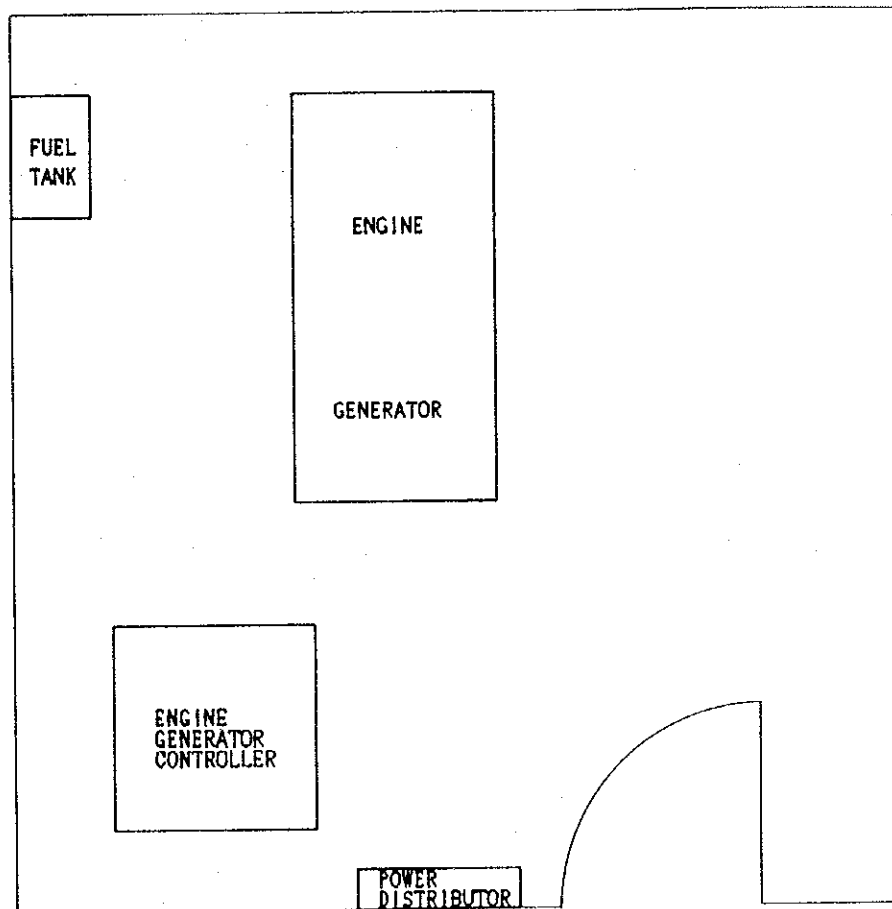


FIG. 3-3-3 FLOOR LAYOUT OF ENGINE GENERATOR HOUSE AT MASINGINI TRANSMITTING STATION



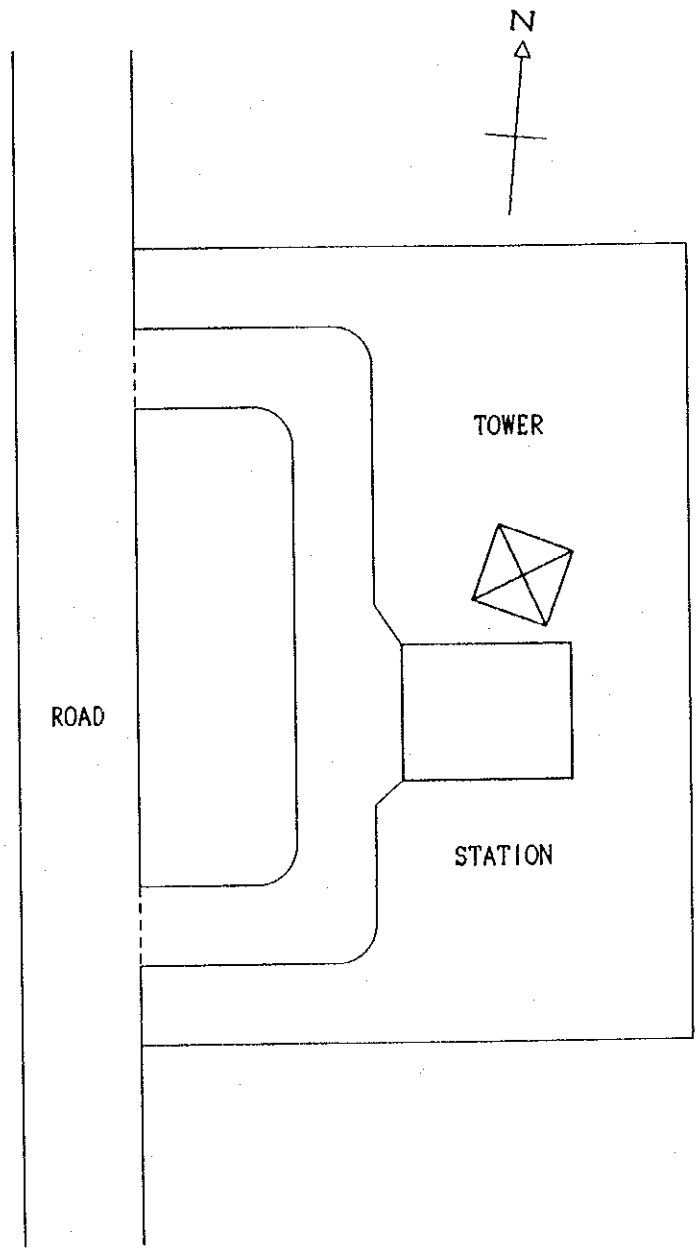
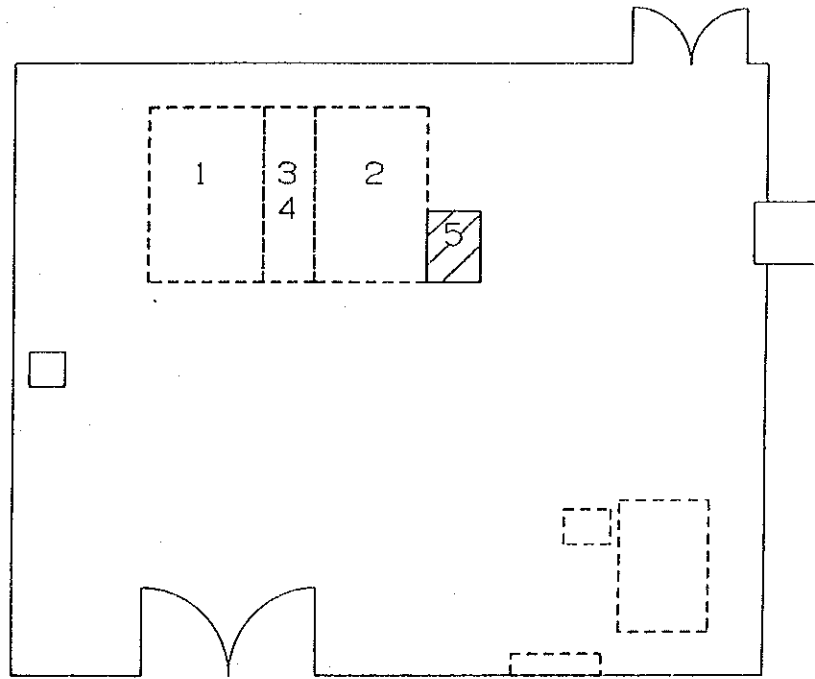


FIG. 3-3-4 SITE LAYOUT CHAKE CHAKE STATION





1. 5kW TV TRANSMITTER(TX-a)
2. 5kW TV TRANSMITTER(TX-b)
3. COAXIAL SWITCH(TX-a, b)
4. 5kW DUMMY LOAD(TX-a, b)
5. PROGRAM INPUT EQUIPMENT(TX-a, b)

FIG. 3-3-5 FLOOR LAYOUT OF TRANSMITTER ROOM  
AT CHAKE CHAKE STATION





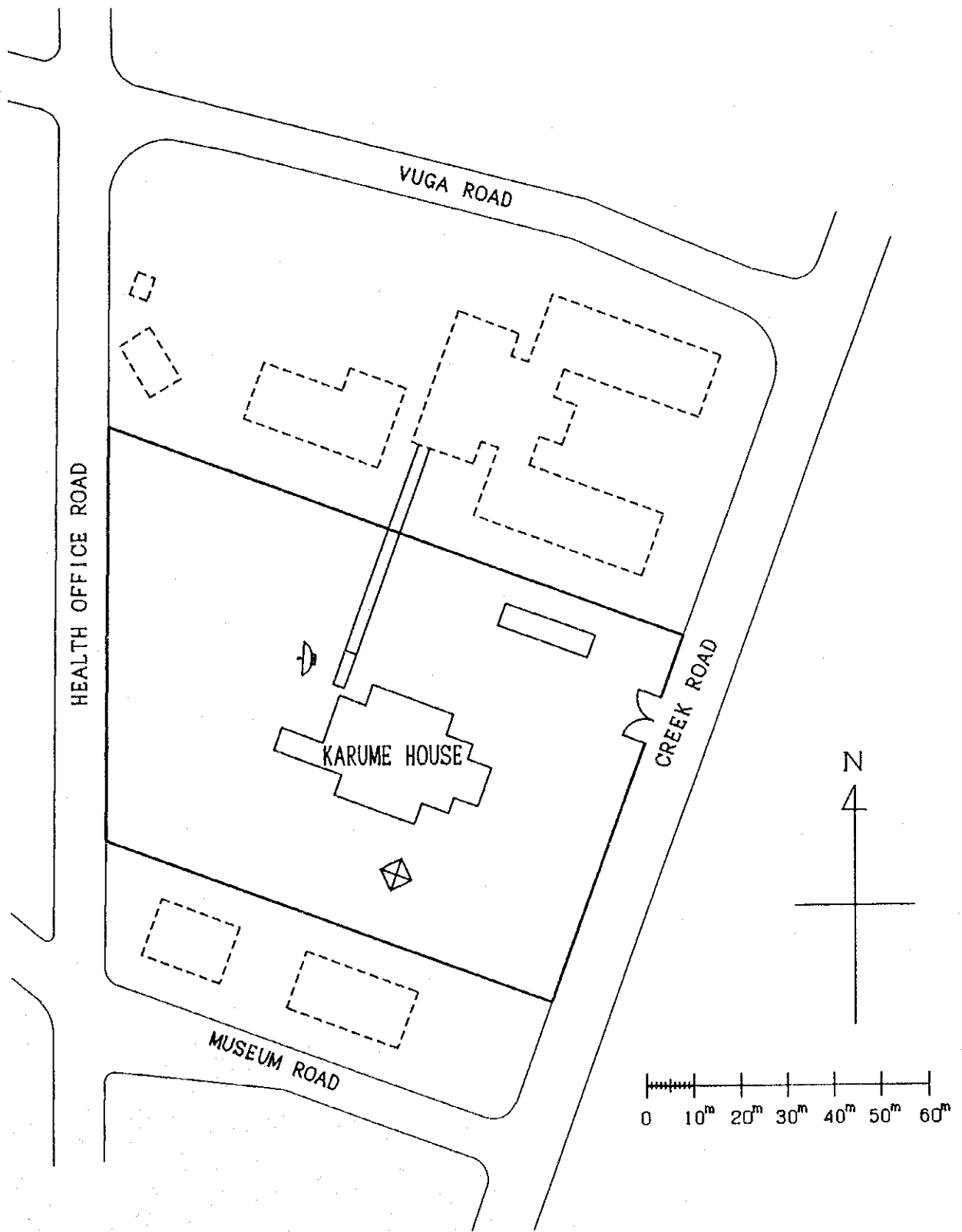


FIG. 3-3-6 SITE LAYOUT OF KARUME HOUSE



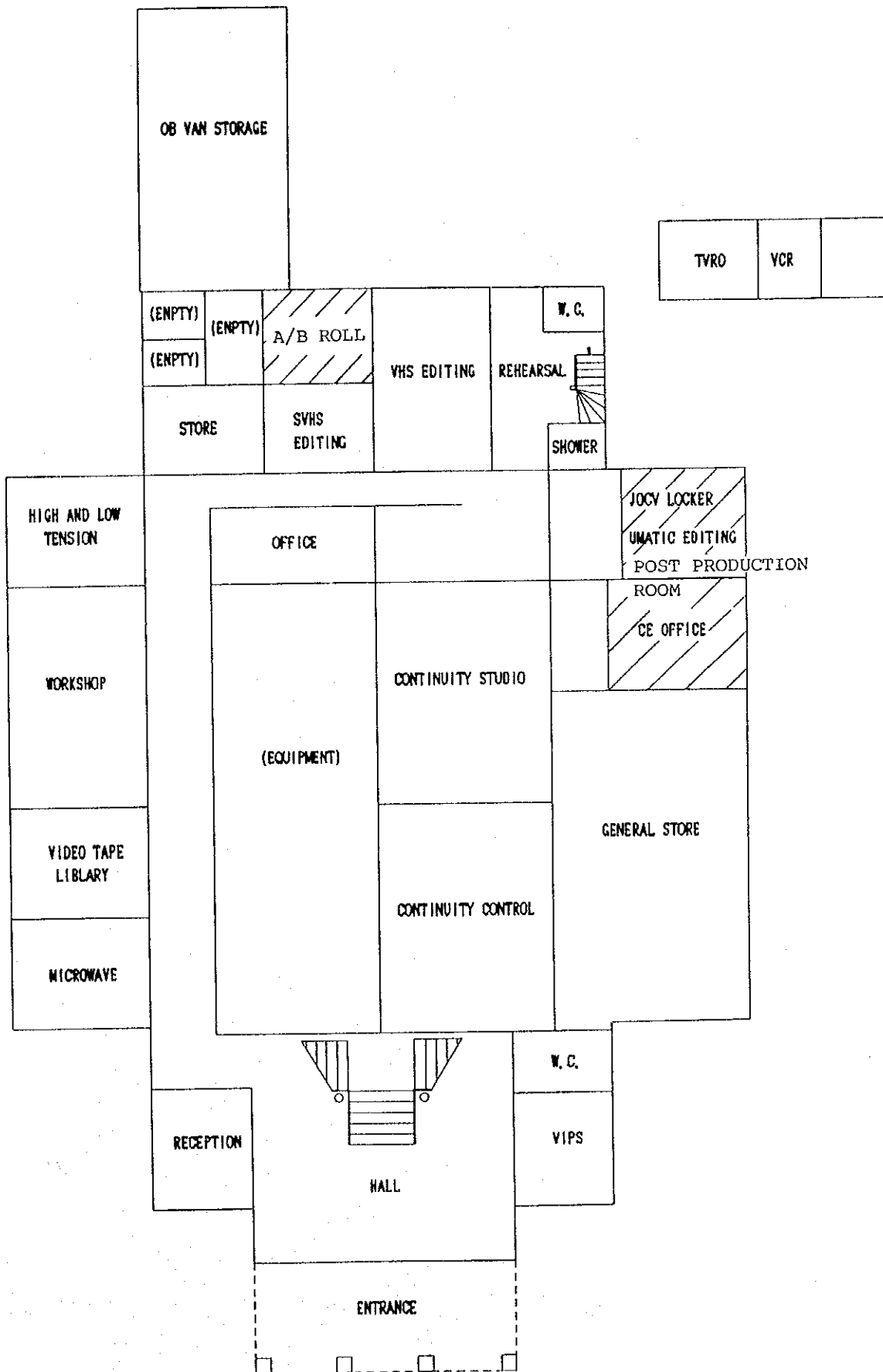


FIG. 3-3-7 FLOOR LAYOUT OF KARUME HOUSE (GF)



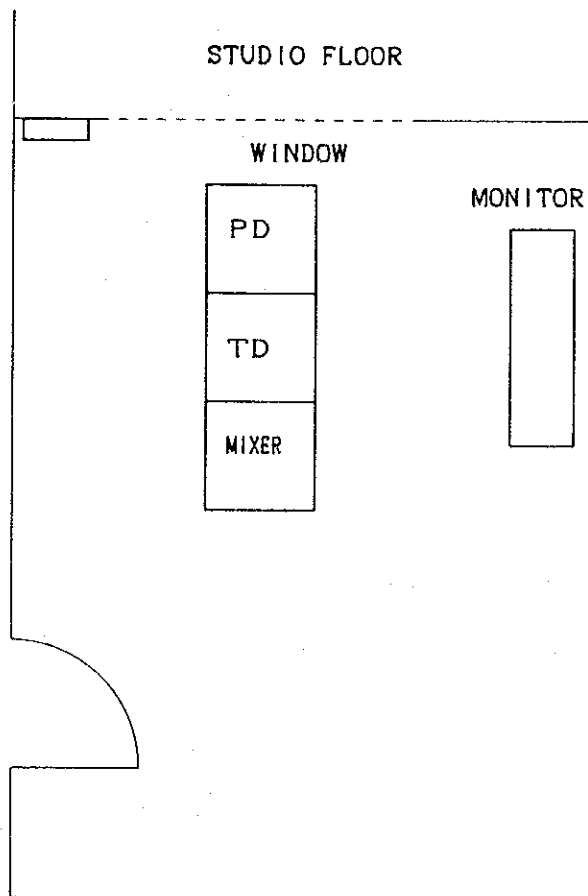


FIG. 3-3-8 EQUIPMENT LAYOUT OF CONTINUITY STUDIO



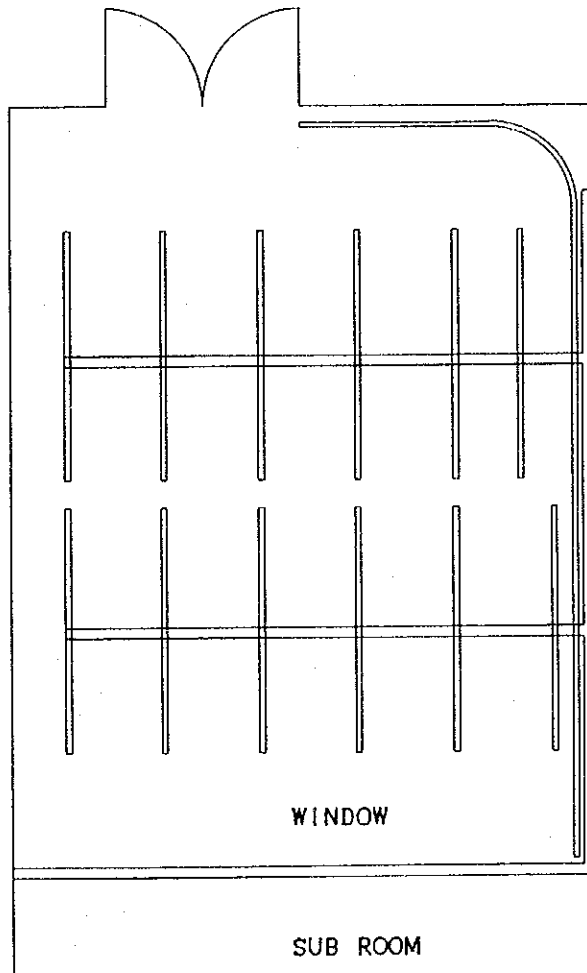


FIG. 3-3-9 LIGHTING LAYOUT OF CONTINUITY STUDIO





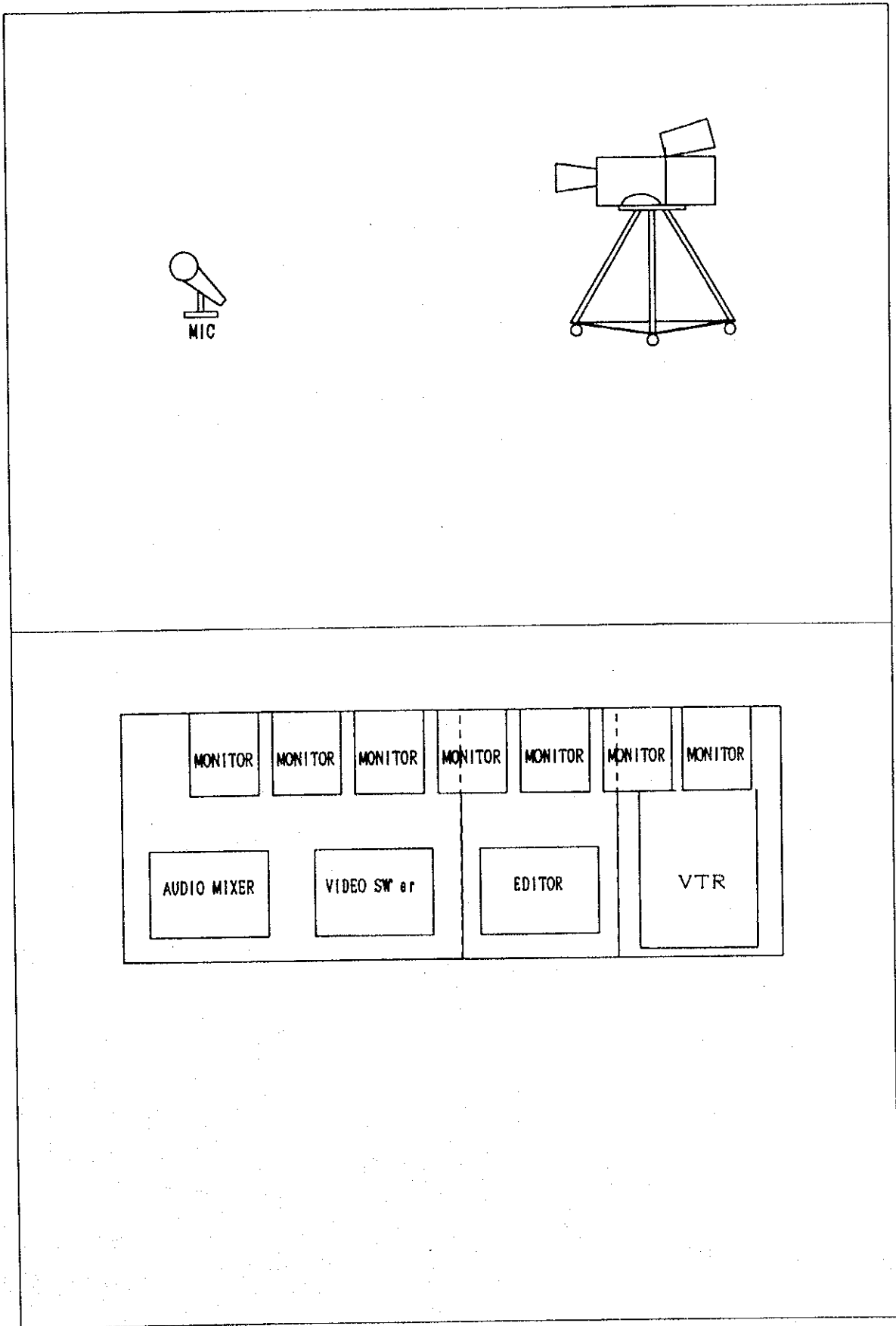


FIG. 3-3-10 EQUIPMENT LAYOUT OF POST PRODUCTION ROOM



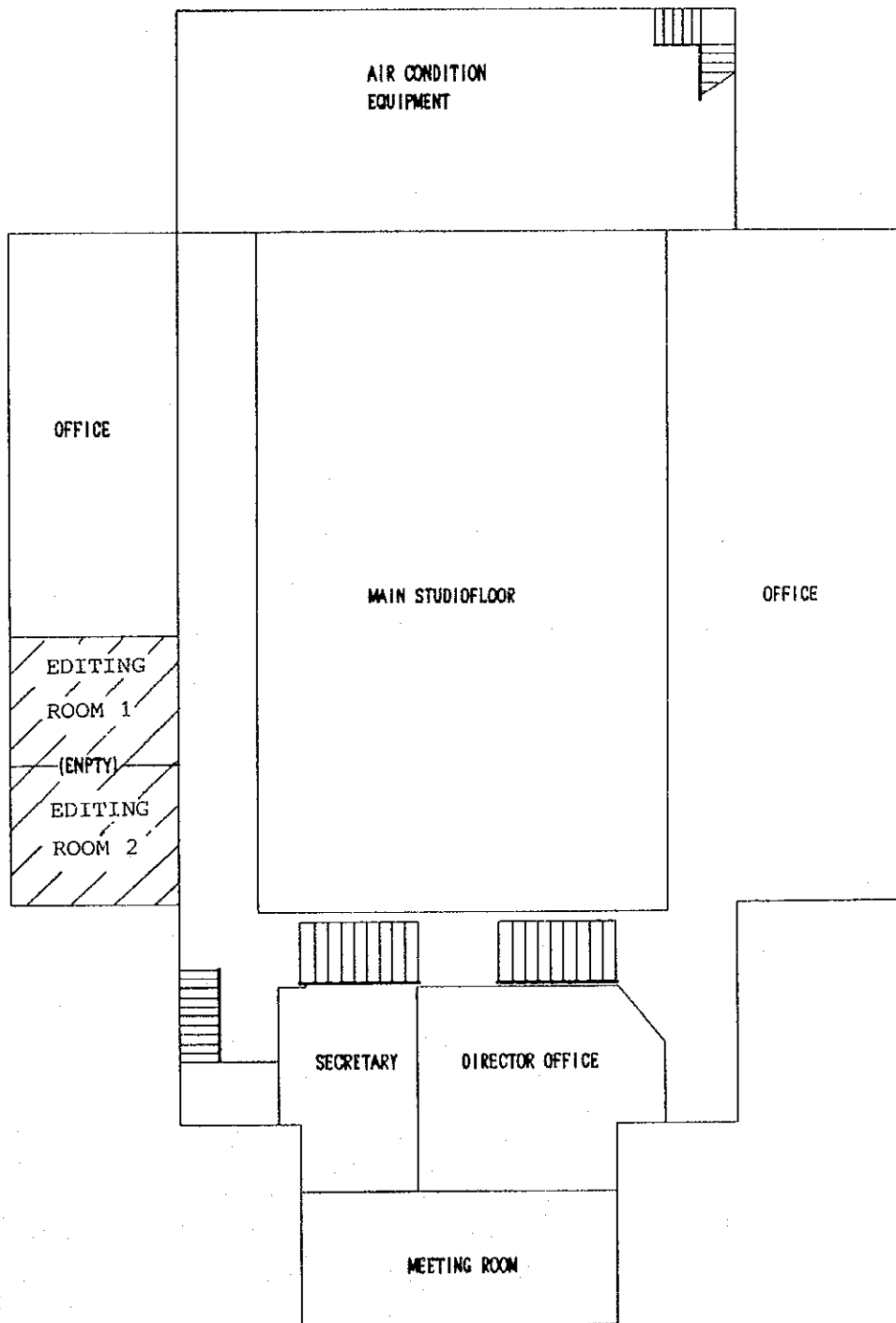


FIG. 3-3-11 FLOOR LAYOUT OF KARUME HOUSE (1F)



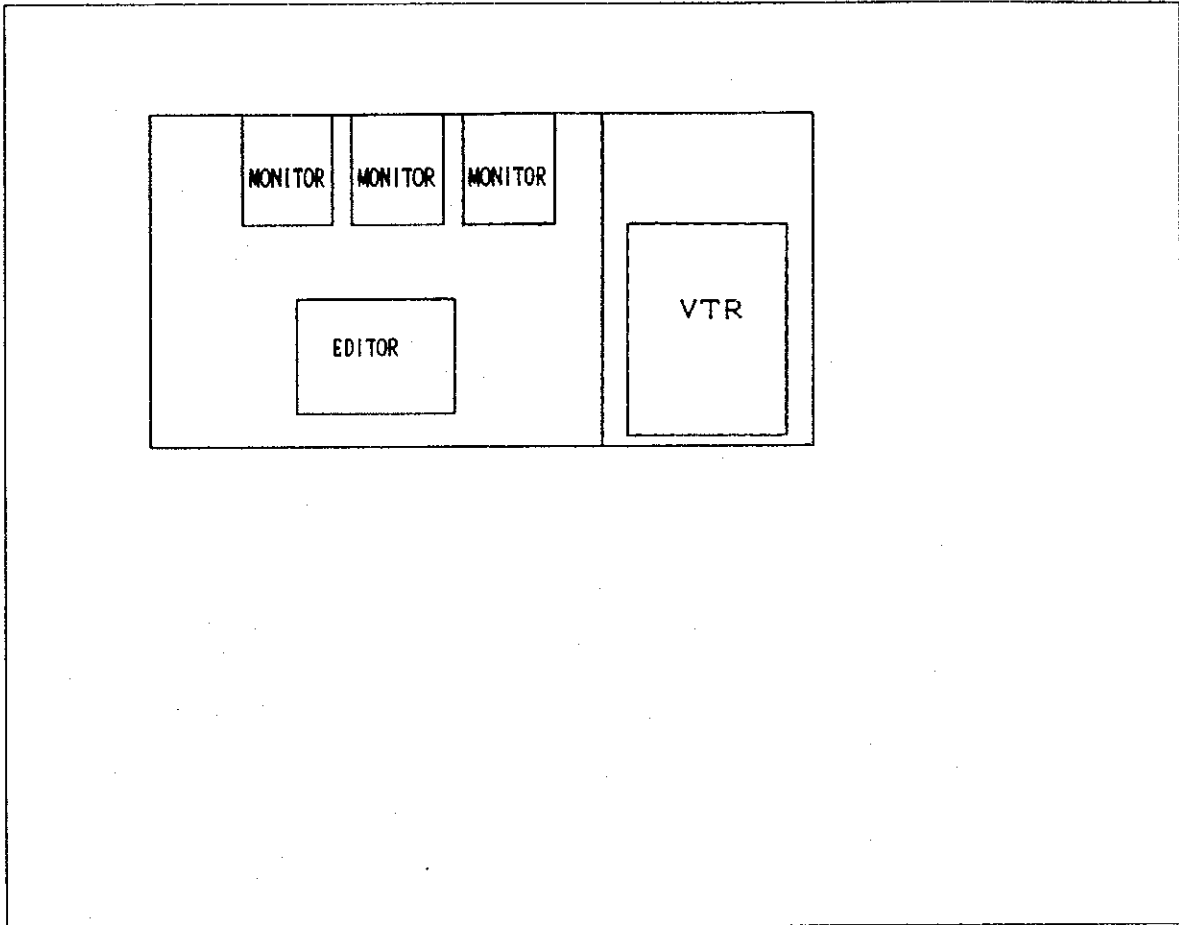


FIG. 3-3-12 EQUIPMENT LAYOUT OF EDITING ROOMS



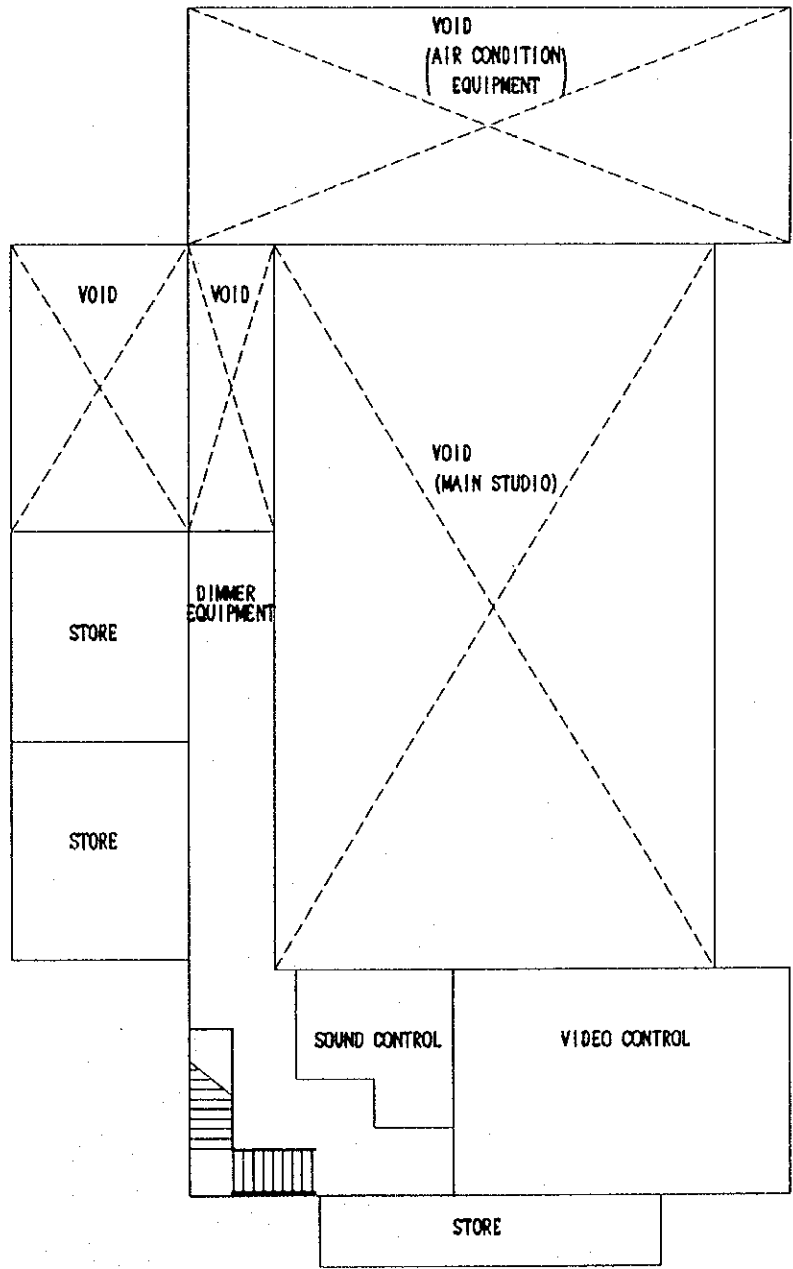


FIG. 3-3-13 FLOOR LAYOUT OF KARUME HOUSE (2F)







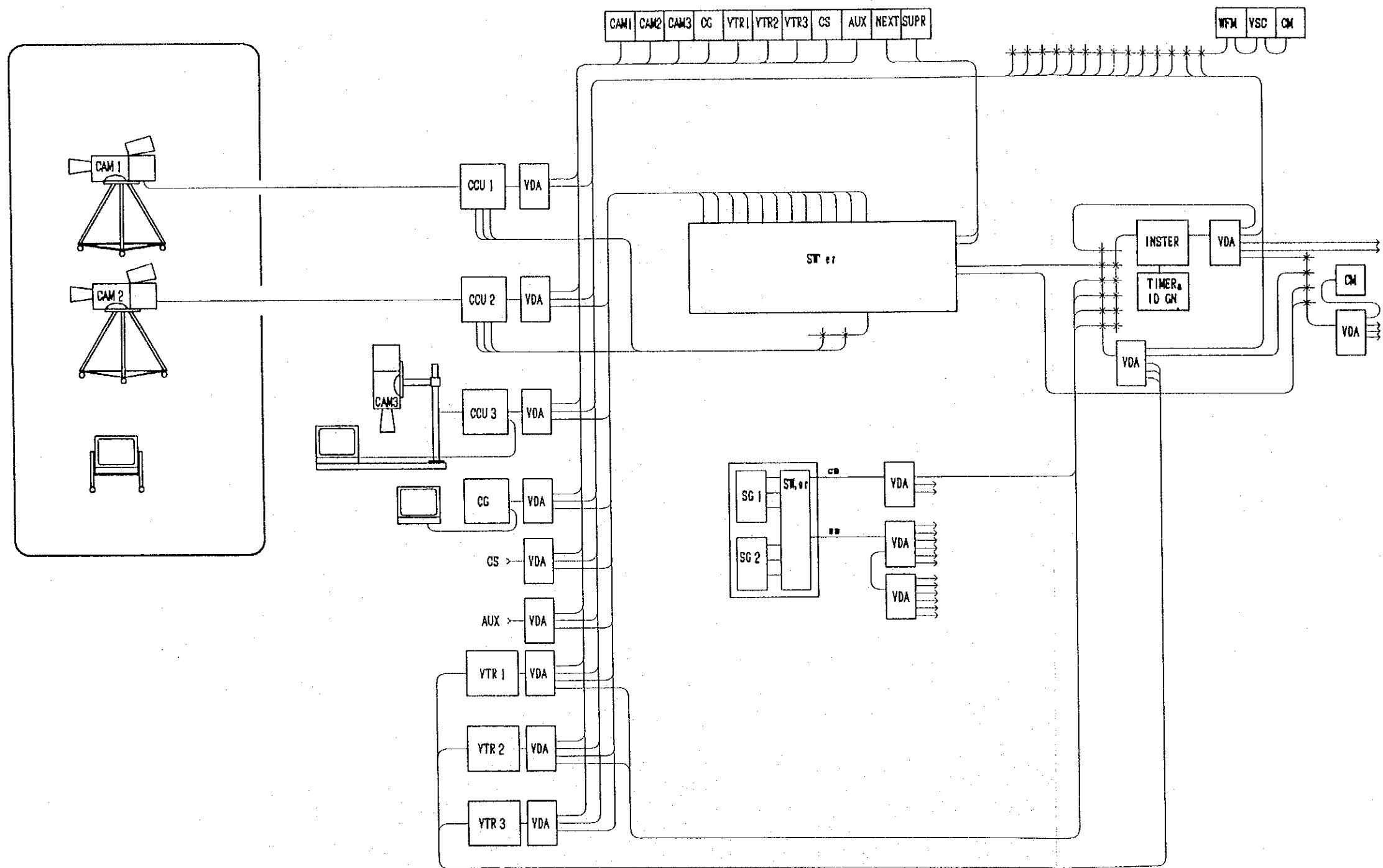


FIG. 3-3-14 SCHEMATIC DIAGRAM OF CONTINUITY STUDIO VIDEO SYSTEM





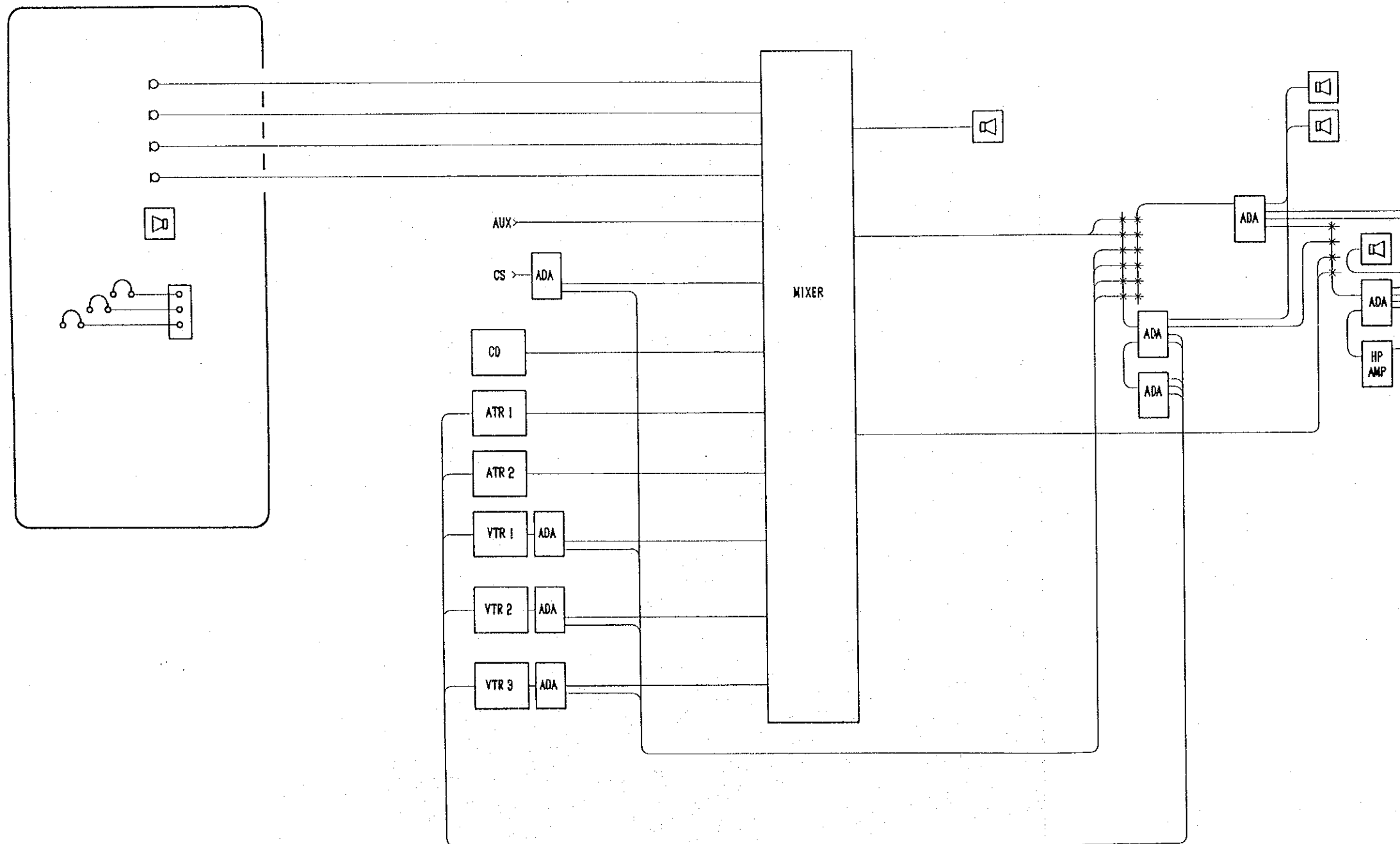


FIG. 3-3-15 SCHEMATIC DIAGRAM OF CONTINUITY STUDIO AUDIO SYSTEM





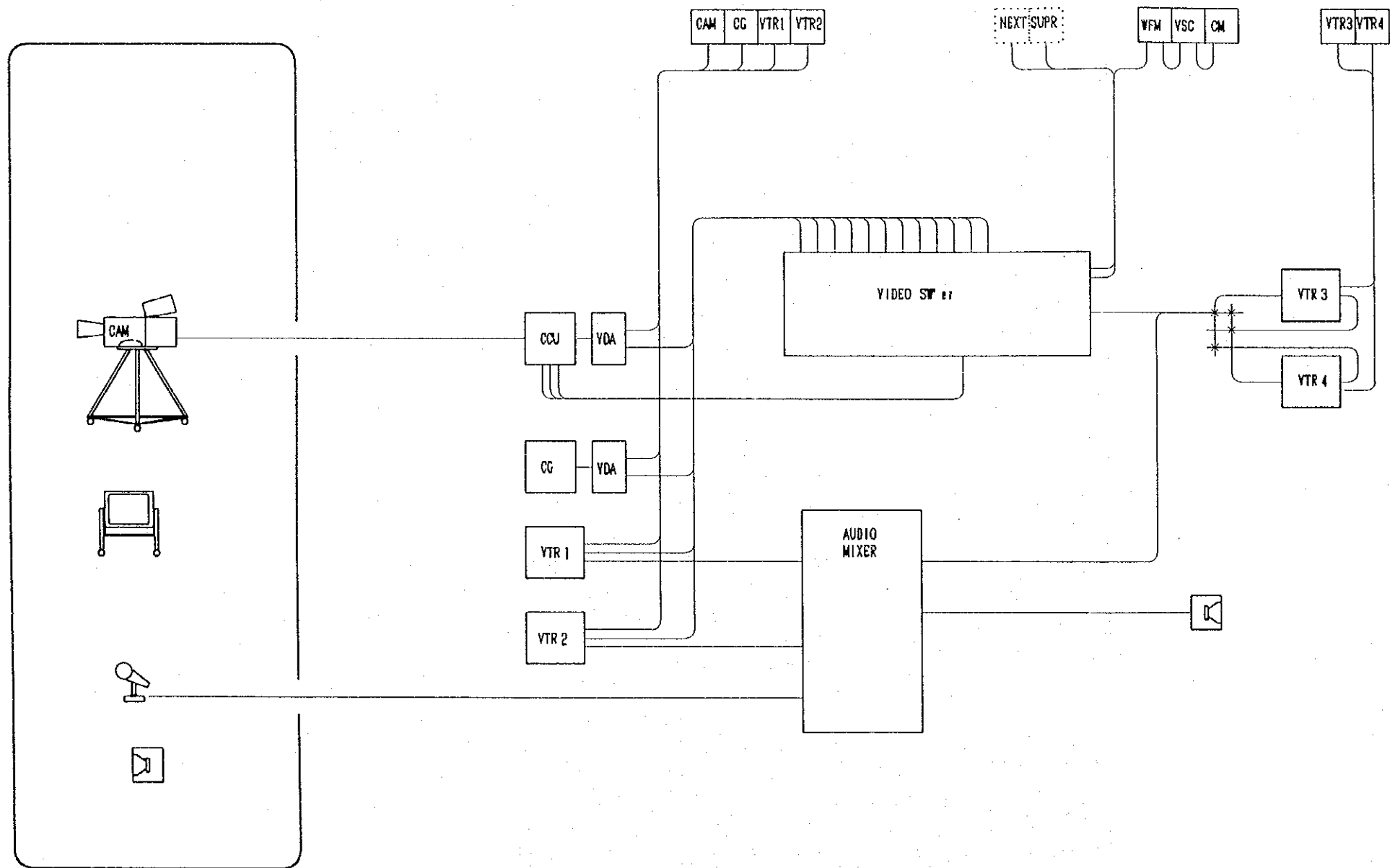


FIG. 3-3-16 SCHEMATIC DIAGRAM OF POST PRODUCTION SYSTEM









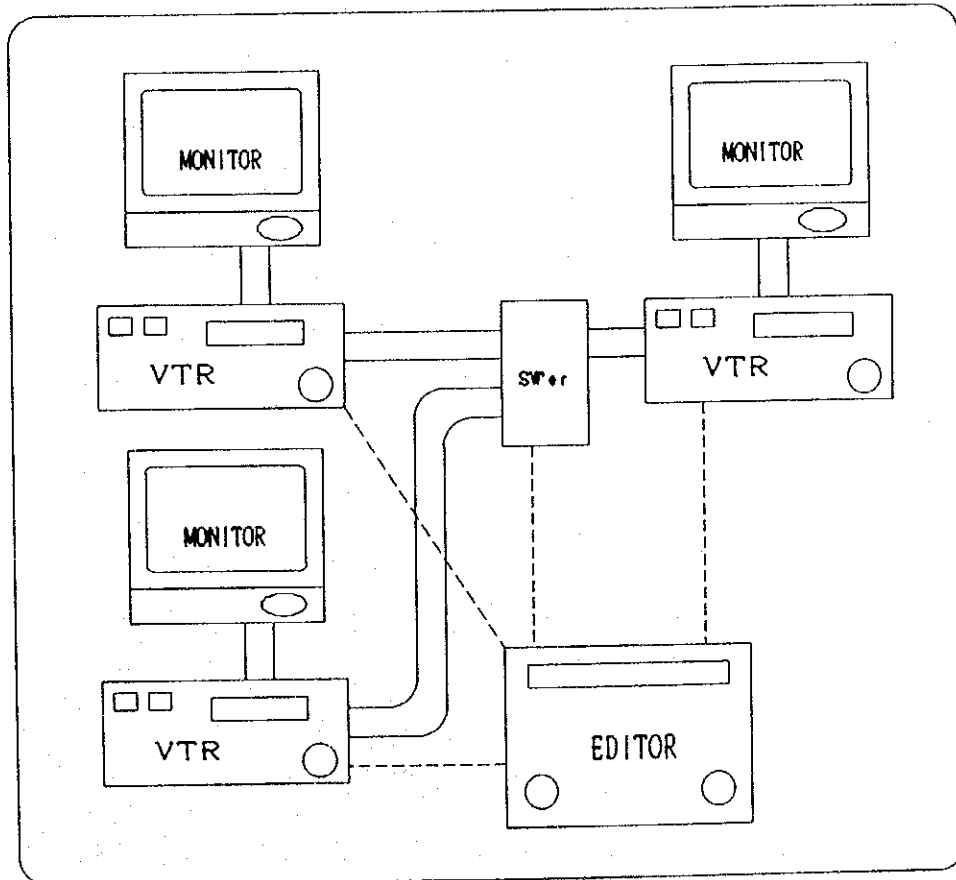
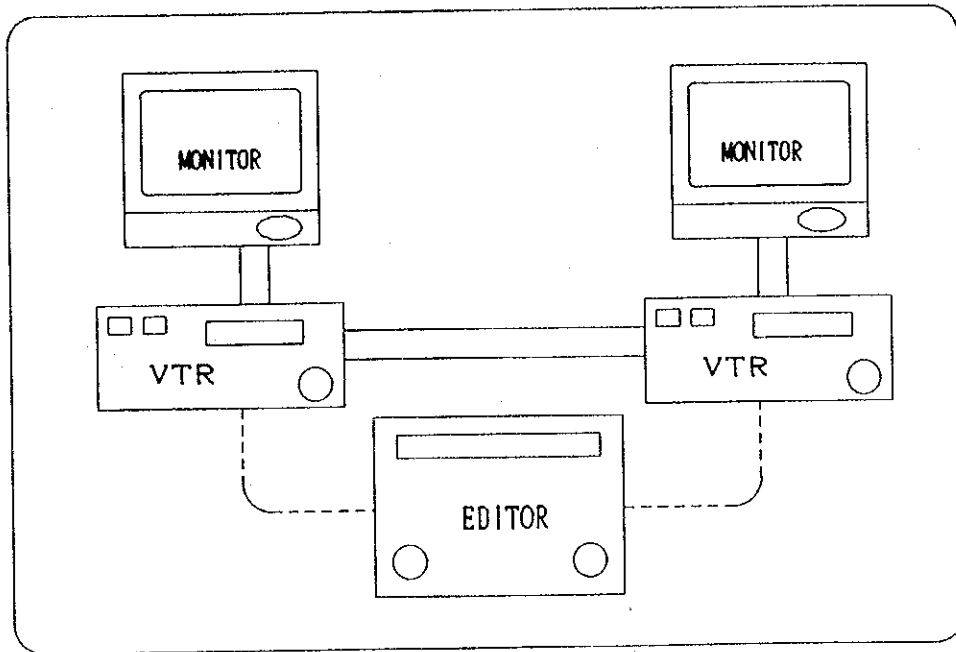


FIG. 3-3-17 SCHEMATIC DIAGRAM OF EDITING SYSTEM



### 3-4 Implementation Plan

#### 3-4-1 Implementation Method

Based on the fundamental idea of the Japanese Government's Grant Aid System, the consultant needs to keep the objectives in mind and to be in charge of the entire implementation of the project from detailed design until completion. The following are the policies for implementing the project:

- ① Based on the consultant contract between Tanzania and the Japanese consultant, the consultant will be stationed at the site of the work during the installation period and maintain close contact with its counterpart in Tanzania and the contractor. The consultant will work to establish a proper system of cooperation to ensure smooth implementation of the project.
- ② To work to coordinate new equipment with the existing equipment that will be moved in, the existing buildings, and the new building.
- ③ To pay the utmost attention to safety and see to it that the work is completed within the scheduled deadline.
- ④ To abide by laws and regulations involving electricity, construction, wireless and other related matters, and respect the customs and habits and working situation in Tanzania.
- ⑤ To ensure safe storage of materials and equipment while the work is going on.

#### 3-4-2 Supervision Plan

In order to implement the project smoothly with Japan's grant aid, the following will be taken into consideration at each stage of the project:

- (1) Detailed design
  - To pay attention to coordination of existing equipment and new equipment.
  - To design a system with appropriate scales of appropriate equipment, according to the design policy.
  
- (2) Tendering
  - To procure the equipment and services through an open tender in Japan.
  - To make the tender notice in an English newspaper widely circulated in the country.
  
- (3) Contract
  - To examine carefully statements of items of work, work conditions, etc. to ensure there will be no faults and to report to Tanzania to make a contract with the selected Japanese Contractor.
  
- (4) Approval of drawings
  - To check the system.
  - To check whether the amount of equipment and the specifications agree with the ones specified in the tender documents.
  
- (5) Factory inspection
  - To inspect equipment at plants. For inspection purposes, equipment will be arranged in a way as close as possible to how it would be installed in Tanzania. There is a certain limit to what can be done by checking drawings alone. This is the stage to check what could have been missed when checking the drawings and to ensure that equipment and systems agree with the specifications of the tender documents.
  
- (6) Supervision at the site
  - To accelerate the utmost attention to safety when work is going on.
  - To ensure close contact among those involved with the project.

- To accelerate to it that necessary technological knowledge is transferred to Tanzanian personnel.

(7) Acceptance inspection at site

- To see to it that all equipment work as shown in factory inspection data.

(8) Completion of work

- To supervise for all the residue materials should be removed and the work site should be cleaned up before the equipment included in the project are officially handed over to Tanzania.

This project calls on Japan to install equipment procured in Japan into existing station house.

The installation work shall be completed in a short time. In order to complete the necessary work within a specified period of time, smoothly and efficiently, appropriate experts and engineers should be dispatched at appropriate times. In any project, transportation can affect the time needed for completion. This is especially true of this project, because a large amount of electronic equipment has to be transported. With this in mind, it is important to choose a contractor who has experience in similar projects. It is also necessary to closely examine work processes and plan ahead carefully. Japan and Tanzania should also exchange information and cooperate with each other to ensure smooth implementation of the project.

The consultant makes the detailed design, assigning of appropriate staff for supervision of the work, consulting closely with not only related organizations of the Japanese side but also those of the Tanzanian side to make the execution of the work go smoothly. Also he gives an appropriate and timely advice and guidance concerning the various problems that may occur or matters on safety.



### 3-4-3 Equipment Procurement Plan

The equipment materials and the installation materials for this project shall be procured in Japan without TV receivers procured in Tanzania. The equipment materials shall be inspected after manufacture and assembly in Japan, and shipping shall be done after disassembly as required. After arrival at the site, they shall be restored by installation and adjustment.

### 3-4-4 Implementation Schedule

#### (1) Scope of work for both country

The division between the scope to be covered by free funds cooperation and the scope to be executed by the Tanzanian side at to own expenses is shown in Table 3-4-1.

Table 3-4-1 Scope of Work

Items	Work to be undertaken by Japanese side	Work to be undertaken by Tanzania side
(1) Work to modify buildings or reinforce ceiling structure of production studio when needed to install the broadcasting equipment	—	To confirm strength of ceiling structure in accordance with the information provided by the Japanese side. Work to be implemented, when need arises
(2) Equipment under the project	To be manufactured, transported, installed, and adjusted	To provide office and storage space with lock during installation period

In addition to the above, the following will be carried out by the Tanzania side and their cost should be covered by Tanzania:

- To provide data and information necessary for the detailed design.
- To obtain all licensing necessary for implementation of the project.

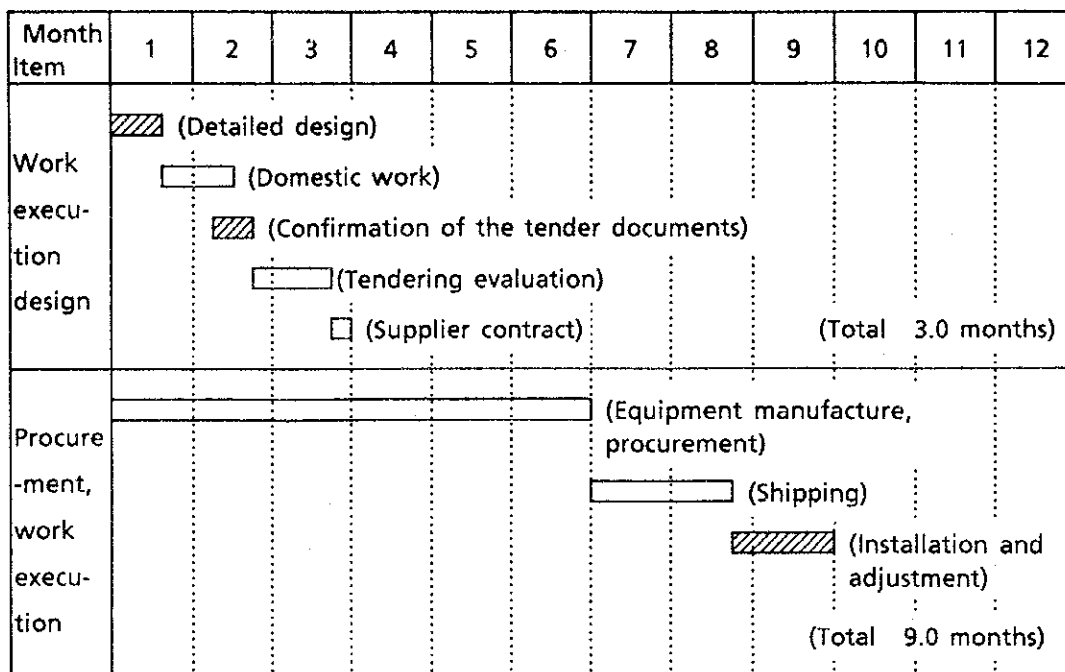
- To ensure prompt unloading, tax exemption and customs clearance at ports of disembarkation in Tanzania and internal transportation therein of the materials and equipment provided under the Grant.
- To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contract such facilities as may be necessary for their entry into Tanzania and stay therein for the performance of their work.

## (2) Implementation Schedule

This project shall be completed according to the following procedure. After conclusion of an Exchange of Notes (E/N) between the Japanese government and the Tanzanian government, design supervision contracts shall be concluded between the Tanzanian government and Japanese consultant companies. Afterwards, the detailed design and the tender documents shall be drawn up, and tender shall be done on the basis of these documents by Japanese enterprises. Supplier contracts shall be concluded via tendering evaluation, and the work shall be started.

The execution period shall require 3.0 months for detailed design and 9.0 months for procurement and installation. The Implementation schedule is shown in Table 3-4-2.

Table 3-4-2 Implementation Schedule



3-4-5 Approximate Project Cost

The approximate project cost to be borne by the Tanzania side is estimated as shown in Table 3-4-4.

Table 3-4-4 Project Cost

(Unit: thousand TShs)

Items	Phase	Total
Modification and interior finish work		532
Total		532

## **Chapter 4 Project Evaluation and Conclusion**



## Chapter 4 Project Evaluation and Conclusion

### 4-1 Benefits

The following effects can be expected from the execution of this plan.

#### Direct effectiveness

##### (1) Improvement on self programme production factor

The self programme production factor is 40% at present due to lack of studio equipment. TVZ has enough potential because of the number and capability of the staff, so it can increase to about 63% in the future for the self programme production factor due to the well-planned operation of continuity studio, post production system and ENG/EFP system for new introduction.

##### (2) Improvement on broadcasting network of TVZ

Residents of Zanzibar (669,000) can to enjoy non stop for programmes if TV receivers (100,000 sets) have stable reception, and getting out of interruption of broadcasting of TVZ. Furthermore, residents of Pemba Island (267,000) can also enjoy stable reception due to improvement of TV picture quality.

##### (3) Recruitment of national TV broadcasting engineers

The TV broadcasting technical level of producer/programme production staff consisting of 74 persons and engineering staff of 60 person who have difficulty in support and increase on the technical level, should be raised. This can result in improvement on TV broadcasting technical level of all of Tanzania.

## Indirect effectiveness

TV broadcasting is an information source (35 to 40%) next to newspaper and radio in receipt of news. That is a result of hearing research of 100 TV viewers in Zanzibar. Besides, it is also an information source in medicine, health, agriculture and fishing, etc., equal to radio (35%).

Accordingly, it information should be transformed for social, cultural and economic development by programming in accord with resident's needs along with improvement in the self programme production factor, thus further enlarging the role of basic informative television.

#### **4-2 Appropriateness of the Project**

This project is the rehabilitation of Television Zanzibar which is a sole TV station at Zanzibar, one of important mass media as well as national radio broadcasting in the way of transmission of basic information.

It's objectives are to restore for function of stable transmission and to improve the self programme production factor by renewal of studio equipment which has reached durable years. Zanzibar people can enjoy basic information programmes such as political and economic, and inherent culture and educational programmes such as language study, agriculture, fishing and medical treatment, etc.

Furthermore, it should be conclude that there is no problem about operation, maintenance and management, and that staffs of Television Zanzibar have been engaged in operation since 1973, the beginning of broadcasting and have also received technical guidance from Japan Overseas Cooperation Volunteers, moreover this project is basically a rehabilitation project.



### 4-3 Recommendations

(1) It is expected to sum up repair charge and depreciation amount about television broadcasting facilities, based on a management and maintenance plan of total broadcasting system on fiscal year budget of the government of Zanzibar.

(2) It is expected to formulate their own training programmes after completion of the project, in succession to cooperation of Japan Overseas Cooperation Volunteer at the present time.

(3) It is necessary for each engineer to intentionally execute periodical check and maintenance referring to the manual.

(4) It is expected to promote an cooperation with TVZ in programme production, technical aspects and exchange of programmes in case TV broadcasting starts in main land.

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## **1. Member List of Survey Team**

## 1. Member List of Survey Team

### (1) Basic Design Study

Itaru TATSUMI	Leader	Director, General Affairs Division, Hachioji International Training Centre, JICA
Yutaka SASAKI	Broadcasting Planner	International Organization Division, international Affairs Department, Ministry of Posts and Telecommunications
Kaoru OKA	Chief Consultant/ Studio Equipment	NHK Integrated Technology Inc.
Hiroshi SONODA	TV Broadcasting Transmission System Planner	NHK Integrated Technology Inc.
Kaoru MATSUMOTO	Radio Transmission System Planner/ Cost Estimation	NHK Integrated Technology Inc.

(2) Explanation of Draft Report

Wataru HAMAKAWA	Leader/ Project Coordinator	Deputy director, Second Project Management Division, grant Aid Project Management Department, JICA
Genichi NISHIMORI	Broadcasting Planner	International Organization Division, International Department, Ministry of Posts and Telecommunications
Kaoru OKA	Chief Consultant/ Studio Equipment	NHK Integrated Technology Inc.
Hiroshi SONODA	TV Broadcasting Transmission Planner	NHK Integrated Technology Inc.

## 2. Survey Schedule



## 2. Survey Schedule

### (1) Basic Design Study

	Date	Study Description, Schedule	
		Government Official	Consultants
1	Oct. 25 (Tue.)	Narita ~ Paris AF275, LV. 12:45 - AR. 17:10	
2	26 (Wed.)	Paris AF456, LV. 22:20 -	
3	27 (Thu.)	Arrive at Dar es Salaam AR. 11:00, Courtesy call to Embassy of Japan and JICA	
4	28 (Fri.)	<ul style="list-style-type: none"> <li>Courtesy call and discussion of Ministry of Finance and Ministry of Information and Broadcasting, etc.</li> <li>Submit of Inception Report and Questionnaire and explanation of Japanese Grant Aid</li> </ul> Dar es Salaam ~ Zanzibar Ship, LV. 16:00 - AR. 17:00	
5	29 (Sat.)	<ul style="list-style-type: none"> <li>Courtesy call to Television Zanzibar (TVZ)</li> <li>Submit of Inception Report and Questionnaire and explanation of Japanese Grant Aid</li> </ul>	
6	30 (Sun.)	Site survey for Pemba by charter flight	
7	31 (Mon.)	<ul style="list-style-type: none"> <li>Courtesy call and discussion of Ministry of Finance and related Ministry</li> <li>Discussion with TVZ for background of the Project, description of the request, executing system, personnel plan, scale and description of the Project, operation and maintenance plan</li> </ul>	
8	Nov. 1 (Tue.)	The same as the above	
			Chief Consultant In charge of TV Broadcasting Transmission In charge of Radio Transmission
9	2 (Wed.)	The same as the above (signing of minutes of discussions for related Ministry)	Zanzibar ~ Pemba LV. 08:20 - AR. 09:00 <ul style="list-style-type: none"> <li>Detail survey for existing facilities, Pemba</li> <li>Measuring of TV field strength, Pemba</li> </ul>
10	3 (Thu.)	Zanzibar ~ Dar es Salaam LV. 17:45 - AR. 18:10	<ul style="list-style-type: none"> <li>Discussion with TVZ, additional survey</li> <li>Measuring of TV field strength</li> </ul>
11	4 (Fri.)	<ul style="list-style-type: none"> <li>Signing of minutes of discussions</li> <li>Reporting to Embassy of Japan and JICA</li> </ul>	Pemba ~ Zanzibar LV. 18:20 - AR. 09:00
12	5 (Sat.)	Dar es Salaam ~	Dar es Salaam ~ Zanzibar Ship, LV. 16:00 - AR. 17:00 (Chief Consultant)
13	6 (Sun.)	~ Paris Paris ~	Internal meeting
14	7 (Mon.)	Arrive at Narita	<ul style="list-style-type: none"> <li>Detail survey for existing facilities, Karume House (Studio), Masingini transmitting station</li> <li>Field survey and examination for transmission link</li> </ul>
15	8 (Tue.)		The same as the above
16	9 (Wed.)		The same as the above
17	10 (Thu.)		<ul style="list-style-type: none"> <li>Discussion with TVZ</li> <li>Survey about cost estimation, transportation</li> </ul>
18	11 (Fri.)		The same as the above
19	12 (Sat.)		Internal meeting
20	13 (Sun.)		Zanzibar ~ Dar es Salaam TC671, LV. 17:30 - AR. 17:55
21	14 (Mon.)		<ul style="list-style-type: none"> <li>Study for present situation of National TV for mainland</li> <li>Survey about cost estimation, transportation</li> </ul>
22	15 (Tue.)		Study for present situation of private TV
23	16 (Wed.)		Study for present situation of radio
24	17 (Thu.)		<ul style="list-style-type: none"> <li>Discussion for meteorological department and related Ministry</li> <li>Survey about cost estimation, transportation</li> </ul>
25	18 (Fri.)		Measuring of TV field strength, Bagamoyo, Kunduchi and Oyster bay
26	19 (Sat.)		Internal meeting, additional survey, collection of materials Measuring of TV field strength
27	20 (Sun.)		Internal meeting
28	21 (Mon.)		<ul style="list-style-type: none"> <li>Reporting to Embassy of Japan and JICA</li> </ul> Dar es Salaam ~ BA066, LV. 20:05 -
29	22 (Tue.)		~ London AR. 05:10 London ~ JL402, LV. 19:00 -
30	23 (Wed.)		Arrive at Narita AR. 15:40



(2) Explanation of Draft Report

	Study Description, Schedule		
		Government Official	Consultants
1	Jan. 9 (Mon)		Narita ~ London JL401, LV. 11:50 - AR. 15:45
2	10 (Tue)		London ~ BA069, LV. 16:30
3	11 (Wed)		Arrive at Dar es Salaam AR.06:35 Courtesy call to Embassy of Japan and JICA, Ministry of Finance Dar es Salaam ~ Zanzibar Ship (afternoon)
4	12 (Thu)	Mexico City ~ KL634, LV. 23:10 ~ Leader	· Courtesy call to Ministry of Finance and Ministry of Information, Culture, Tourism & Youth · Submit explanation of Draft Report and discussion
5	13 (Fri)	~ Amsterdam AR. 16:10 Leader Narita ~ Amsterdam JL411, LV. 12:30 - AR. 17:00	The same as the above
6	14 (Sat)	Amsterdam ~ KL563, LV. 22:15 ~	The same as the above
7	15 (Sun)	Arrive at Dar es Salaam AR. 09:20	Internal meeting
8	16 (Mon)	Coutesy call to Embassy of Japan and JICA, Ministry of Finance Dar es Salaama ~ Znzibar Ship (afternoon)	Discussion with TVZ
9	17 (Tue)	· Courtesy call to Ministry of Finance, Ministry of Information, Culture Tourism & Youth and TVZ · Discussion with TVZ	
10	18 (Wed)	Discussion with TVZ	
11	19 (Thu)	Signing of minutes of discussions with related organization in Zanzibar Zanzibar ~ Dar es Salaam Ship (afternoon)	
12	20 (Fri)	· Signing of minutes of discussions · Reporting to Embassy of Japan and JICA	
13	21 (Sat)	Dar es Salaam ~ London BA068, LV. 08:25 - AR. 17:05	
14	22 (Sun)	London ~ JL402, LV. 19:00 -	
15	23 (Mon)	Arrive at Narita AR. 15:40	

### **3. Member List of Party Concerned in Tanzania**



### 3. Member List of Party Concerned in Tanzania

- Government of the United Republic of Tanzania

Ministry of Finance

Assistant Commissioner, External Finance Clivi.	Mr. A. I. Muneni
Senior Finance Management Officer	Mr. M. N. Kapella

Ministry of Information and Broadcasting

Coordinator of TV	Mr. Devid Wakati
	Mr. Mkongowe

Radio Tanzania Dar es Salaam (RTD)

Deputy Director	Mr. Juma Seleka
-----------------	-----------------

- Government of Zanzibar

Ministry of Information, Culture, Tourism & Youth

Minister	Mr. Said. Bakari Jecha
Principal Secretary	Mr. Hamad B. Mshindo

Ministry of Information, Culture, Tourism & Youth, Pemba Office

Officer	Mr. Mohamed Zam Ali
---------	---------------------

Ministry of Finance

Minister	Ms. Amina S. Ali
Deputy Principal Secretary	Mr. Hakim Hassan
Commissioner of External Finance and International Cooperation	Mr. Hamed R. H. Hikmany MA, Phd.
Senior Finance Management Officer	Ms. Fatma Gharib
Senior External Finance Officer	Ms. Zainab H. Pandu

## Television Zanzibar

Director	Mr. Juma A. Simba
Programme Manager	Mr. Jaffar S. Kassingo
Production Manager	Mr. Abdulhamid H. Dau
Chief Engineer	Mr. George H. Majaliwa
Senior Engineer (Assistant Chief Engineer)	Mr. Ali Muhsin
Senior Engineer (Transmitter, in-charge of Massingini transmitting station)	Mr. Abdalla Iddi Abdalla
Senior Engineer (OB Van)	Mr. Omar Abdalla
Senior Engineer (Maintenance) (Chake Chake station)	Mr. Sufiani Khamis
In-charge of station	Mr. Hamad S. Kombo
Transmitter engineer	Mr. Abdalla M. Othman
Engineer	Mr. Marzouk Kombo Feruzi

## Radio Tanzania Zanzibar (RTZ)

Director	Mr. Yusef Omar Chunda
Deputy Director	Mr. Kassim Suleiman Kassim
Chief Engineer	Mr. Abdul Rahman Mohamed Said

## • Private Broadcasting station of main land

### ITV (Independent Television)

Director of Technical Services	Mr. Peter T. Mamu
In-charge of Studio	Mr. Mkosollah Ramadhan
In-charge of TV Transmitter	Mr. Mlinduz Mazana
In-charge of MW Radio	Mr. John Hayghaimo

### CTN, Cablevision (Africa) Ltd.

Chairman	Mr. Al-Munir Abdulali Karim
----------	-----------------------------

DTV (Dar es Salaam Television)

Chairman	Mr. Shabbir Dewji
Commercial Director	Mr. Franco Tramontano

● Embassy of Japan

Ambassador Extraordinary and Plenipotentiary	Mr. Mitsuru EGUCHI
First Secretary	Mr. Yasushi SHIGEMASA
Second Secretary	Mr. Takashi KATSUMI

● Japan International Agency (JICA) Tanzania Office

Resident Representative	Mr. Kiyoshi HIRAKAWA
Deputy Director	Mr. Eitaro MITOMA
Assistant Resident Representative	Mr. Hiroyuki MORONAGA



#### 4. Minutes of Discussions





#### 4. Minutes of Discussions (Basic Design Study)

##### MINUTES OF DISCUSSIONS

##### BASIC DESIGN STUDY

ON

THE PROJECT FOR

THE REHABILITATION OF TELEVISION ZANZIBAR

IN

THE UNITED REPUBLIC OF TANZANIA

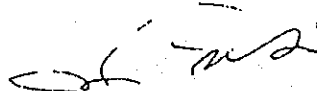
In response to a request from the Government of the United Republic of Tanzania, the Government of Japan decided to conduct a Basic Design Study on the Project for the Rehabilitation of Television Zanzibar ( hereinafter referred to as "the Project" ), and entrusted the study to the Japan International Cooperation Agency ( JICA ).


JICA sent to Tanzania a study team, which is headed by Mr. Iwao TATSUMI, Director, General Affairs Division, Hachioji International Training Center, JICA and is scheduled to stay in the country from 27th October to 21st November, 1994.

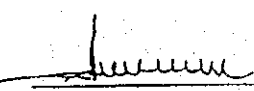
The team held discussions with the officials concerned of Tanzania and conducted a field survey at the study area.

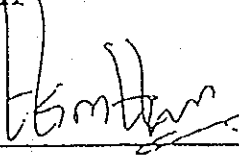
In the course of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Design Study Report.

Zanzibar, 2nd November 1994

  
\_\_\_\_\_  
Mr. Iwao TATSUMI  
Leader  
Basic Design Study Team  
J I C A

  
\_\_\_\_\_  
Mrs. M. M. Hamdan  
Deputy Principal Secretary  
Ministry of Information,  
Culture, Tourism & Youth,  
Zanzibar

  
\_\_\_\_\_  
Mr. A. I. Muneni  
Assistant Commissioner  
Ministry of Finance,  
the United Republic of  
Tanzania

  
\_\_\_\_\_  
Mr. H. Hassan  
Deputy Principal Secretary  
Ministry of Finance,  
Zanzibar

## ATTACHMENT

1. Objective  
The objective of the Project is to introduce facilities and equipments in Television Zanzibar, in order to rehabilitate the broadcasting system with a view to serve for necessary general information to residents, promoting educational and culture activities.
2. Project site  
The Project site is Karume House studio and Masingini transmitting station in Zanzibar Island and Chake Chake station in Pemba Island.
3. Executing agency  
Television Zanzibar is responsible for the administration and execution of the Project.
4. Items requested by the Government of the United Republic of Tanzania.  
After discussions with the Basic Design Study team, the following items to be installed in Television Zanzibar were finally requested by the Tanzania side.
  - (1) TV transmitting system
  - (2) Programme transmission link
  - (3) Studio system
  - (4) ENG/EFP system
  - (5) Post production system and editing system
  - (6) Vehicles for ENG
  - (7) Spare parts and maintenance equipments

However, the final components of the Project will be decided after further studies.

5. Japan's Grant Aid system
  - (1) The Government of the United Republic of Tanzania has understood the system of Japanese Grant Aid explained by the team.
  - (2) The Government of the United Republic of Tanzania will take necessary measures described in Annex for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.
6. Schedule of the Study
  - (1) The consultants will proceed to further studies in Tanzania until 21st November, 1994.
  - (2) JICA will prepare the draft report in English and dispatch a mission in order to explain its contents around January, 1995.

- (3) In case that the contents of the report are accepted in principle by the Government of Tanzania, JICA will complete the final report and send it to the Government of Tanzania by April, 1995.

ANNEX : Necessary measures to be taken by the Government of the United Republic of Tanzania, in case Japan's Grant Aid is extended.

1. To prepare data and information necessary for detailed design.
2. To complete modification of the studio building including interior finish and to provide electricity, air-conditioning, room lights, etc., prior to commencement of equipment installation.
3. To ensure prompt unloading and customs clearance at ports of disembarkation in Tanzania and internal transportation therein of the materials and equipment provided under the Grant.
4. To bear following commissions to the Japanese foreign exchange bank for banking services based upon the Banking Arrangement ( B/A ).
  - 1) Advising commission of Authorization to Pay ( A/P )
  - 2) Payment commission
5. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contract such facilities as may be necessary for their entry into Tanzania and stay therein for the performance of their work.
6. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Tanzania with respect to the supply of the products and services under the verified contract.
7. To maintain and use properly and effectively the educational broadcasting equipment provided under the Grant.
8. To bear all the expenses other than those to be borne by the Grant, necessary for implementation of the Project.

## (Explanation of Draft Report)

MINUTES OF DISCUSSIONS

BASIC DESIGN STUDY

ON

THE PROJECT FOR

THE REHABILITATION OF TELEVISION ZANZIBAR

IN

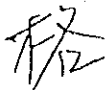
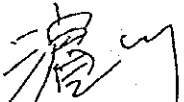
THE UNITED REPUBLIC OF TANZANIA  
(CONSULTATION ON DRAFT REPORT)

In November 1994, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study team on the Project for the Rehabilitation of Television Zanzibar (hereinafter referred to as "the Project") to the United Republic of Tanzania, and through discussions, field survey and technical examination of the results in Japan, has prepared the draft report of the study.


In order to explain and to consult Tanzania on the components of the draft report, JICA sent to Tanzania a study team, which is headed by Mr. Itaru HAMAKAWA, Deputy Director, Second Project Management Division, Grant Aid Project Management Department, JICA and is scheduled to stay in the country from 11th January to 21st January 1995.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

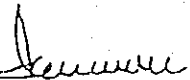
Zanzibar, 19th January 1995




Mr. Itaru HAMAKAWA  
Leader  
Basic Design Study Team  
J I C A



Mrs. M. M. Hamdan  
For: Principal Secretary  
Ministry of Information,  
Culture, Tourism & Youth,  
Zanzibar



Mr. A. I. Muneni  
For: Principal Secretary  
Ministry of Finance,  
the United Republic of  
Tanzania



Mr. Omar S. Mussa  
Principal Secretary  
Ministry of Finance,  
Zanzibar

ATTACHMENT

1. Components  
The Government of the United Republic of Tanzania has agreed and accepted in principle the components of the draft report proposed by the Team.
2. Japan's Grant Aid system
  - (1) The Government of the United Republic of Tanzania has understood the system of Japanese Grant Aid explained by the Team. (See Annex 2)
  - (2) The Government of the United Republic of Tanzania will take the necessary measures, described in Annex 1, for smooth implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.
3. Further schedule  
The Team will make the final report in accordance with the confirmed items, and send it to the Government of the United Republic of Tanzania by April, 1995.

RZ

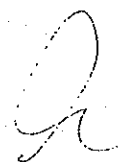
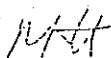
MTH





ANNEX 1 : Necessary measures to be taken by the Government of the United Republic of Tanzania, in case Japan's Grant Aid is extended.

1. To provide facilities for electricity, air-conditioning and other incidental facilities to the Karume House prior to commencement of installation of the equipment.
  - (1) Main power supply and air-conditioning with enough capacity to all technical areas where the equipment is installed
  - (2) Modification of the building if the necessity arises in the course of detailed design
2. To prepare data and information necessary for the detailed design
3. To ensure prompt unloading and customs clearance at ports of disembarkation in Tanzania and internal transportation therein of the materials and equipment provided under the Grant.
4. To bear following commissions to the Japanese foreign exchange bank for banking services based upon the Banking Arrangement ( B/A ).
  - 1) Advising commission of Authorization to Pay ( A/P )
  - 2) Payment commission
5. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contract such facilities as may be necessary for their entry into Tanzania and stay therein for the performance of their work.
6. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Tanzania with respect to the supply of the products and services under the verified contract.
7. To maintain and use properly and effectively the educational broadcasting equipment provided under the Grant.
8. To bear all the expenses other than those to be borne by the Grant, necessary for implementation of the Project.





Japan's Grant Aid Scheme

1. *Grant Aid Procedures*

- 1) Japan's Grant Aid Program is executed through the following procedures.
- |                      |                                                                |
|----------------------|----------------------------------------------------------------|
| Application          | (Request made by a recipient country)                          |
| Study                | (Basic Design Study conducted by JICA)                         |
| Appraisal & Approval | (Appraisal by the Government of Japan and Approval by Cabinet) |
| Determination of     | (The Notes exchanged between the Governments                   |
| Implementation       | of Japan and the recipient country)                            |

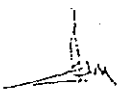
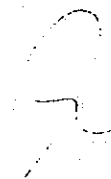
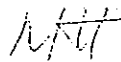
2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.



## 2. Basic Design Study

### 1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

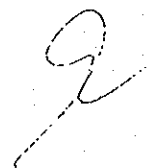
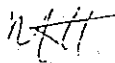
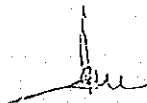
- a) Confirmation of the background, objectives, and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation;
- b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- d) Preparation of a basic design of the Project
- e) Estimation of costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

### 2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firms(s) based on proposals submitted by interested firms. The firm(s) selected carry (ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.



The consulting firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

### 3. Japan's Grant Aid Scheme

#### 1) What is Grant Aid ?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.


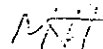
#### 2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

#### 3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed.

However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

#### 4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.



When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.



