CHAPTER 4 Basic Design

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4-1 Design Policy

The major characteristic of the recipient organization of this Project is that it has two important aspects; it conducts fostering of high-calibre human resources and the production of programmes. Moreover, in executing this Project, there is a precondition that needs to be taken into account. It is the fact that the building is already completed and that, even though there is some room for remodelling, the form of the building should basically be retained. Taking the above-mentioned circumstances into account and considering such factors as the climate and natural features of India, the need of reducing the maintenance and operational expenses in stages and the current technical level of the mass communication media there, the following policies will be followed in the basic design for this Project:

(1) Consideration will be given to supplying types of equipment that are solid and durable, in view of the high frequency of their use for the training of students and for programme production.

(2) Consideration will be given to providing equipment that are highly resistant to high temperatures and high humidity.

(3) Consideration will be given to ensuring that the equipment to be supplied are as much as possible of a uniform system, so that the operation and maintenance may be easy and the expenses of maintenance and operation may be reduced as much as possible.

(4) Types of equipment that are most suited to the objective of the Project will be provided, so that maximum effects may be achieved within the range of the assistance given.

(5) Types of equipment that best fit the objective of the Project and the term of construction will be selected.

(6) In determining the scale of the system to be provided, such factors as the size of the building, the contents of the programmes to be produced and the number of students to be enrolled will be taken into account so as to ensure an appropriate scale.

(7) The specifications of the equipment shall be in conformity with the technical standards of the International Radio Consultative Committee (CCIR) and shall be designed in such a way as to ensure electrical and mechanical safety and durability.

4-2 Study and Examination on Design Criteria

The form of studying at MCRC is such that the 1st-year students are mainly engaged in the study of theories, while the 2nd-year students are divided half and half into those studying film production and those studying TV programme production. The 3rd-year students are divided into four groups by the field in which they specialize. In view of the above, the 2nd-year and 3rd-year students will be considered as the main participants in practical training. In other words, taking into account the availability of equipment as well as the contents of the curricula and the size of the studio to be used, the 60 2nd-year students will be divided into two 30-member groups. And since the TV production group of students in the 3rd-year class comprises 35 members, the scale of training will be determined in such a way that a group of about 30 members may be able to take part in the same practical training simultaneously. So, a group to take part in programme production work in the TV studios will consist of members in different work categories, as follows:

[TV Programme Production Studio]

Producer	1
Cameramen	3
Video switcher	1
Audio mixer	1
Video engineer	1
Lightman	1
Floor director	1
Boom operator	1
Assistants	2
Total:	12

[Post-production Studio]

Producer	1
Video switcher	1
Audio mixer	1
Assistants	2
Total:	5

Therefore, using the two TV studios and a post-production studio, a total of 29 students will be able to take part simultaneously in training in the in-studio production of TV programmes, as follows:

TV Production Studios ..... 12 persons × 2 studios = 24 persons

Post-production Studio ..... 5 persons × 1 studio = 5 persons

In the case of training in outdoor coverage, the following composition of personnel may be considered:

Producer	1
Cameraman	1
Audio mixer(s)	0 - 2
Lightman	1
Assistant(s)	0 - 2
Total:	3 - 7 persons

As for the training in the use of editing equipment, the following composition of personnel may be considered:

Producer	1
Audio mixer	1
Assistants	2
Total:	4

Therefore, in the case where a team of 5-7 members (5~7 persons × 5 teams = 25~35 persons) is conducting outdoor coverage, they may all take part in the work together. In the case where the students are going out on outdoor coverage in smaller teams (for example, 3 persons × 5 teams = 15 persons), it would be possible for the rest of the students to undergo practical training in editing work which is closely related to outdoor coverage work. In this case, the number of students who can join in practical training in editing work will be 12 persons (4 persons × 3 teams).

As for still-photography, a total of 30 cameras will be provided so that all the students of a group may participate in this training which constitutes the basis of training in programme production. As to the developing equipment, however, one set will be allocated to three persons.

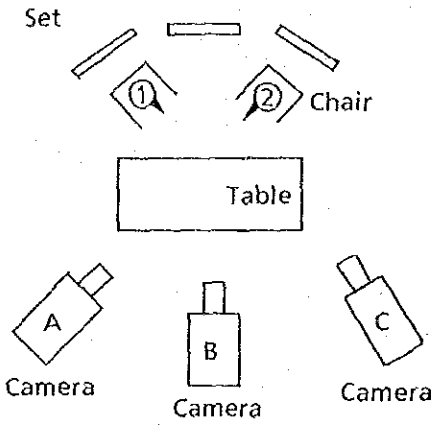
As regards the studios, they will be equipped in such a way as to match the scale of the existing building. For example, as for the lighting in the TV studios, the lighting capacities have been determined according to the floor areas ($150m^2$ and $80m^2$). Thus, the lighting capacity for the $150m^2$ studio will be $150m^2 \times 60\%$ (effective area) $\times$ $0.7kW/m^2$ (electric capacity corresponding to the standard lighting capacity in colour TV broadcasting) = 63kW.

Similarly, the lighting capacity for the $80m^2$ studio will be $80m^2 \times 60\% \times 0.7kW/m^2$ = 34kW.

Judging from the present height of the ceiling, the height up to the grid pipes, about 6m, is not very high. So, the lighting equipment to be supplied will be of a fixed-rail type, instead of a baton type. However, equipment that are easy to operate such as a telescoping hanger will be provided.

As for the cameras for studio use, a total of three cameras will be provided — one in the centre and one each on the right and the left — taking the most typical camera positions into account.

As to the video switcher, its scale will be determined according to the number of video input units, such as cameras, VTRs and other devices. Under this Project, video switchers of the same scale will be adopted in both studios 1 and 2, since the numbers of the input units are the same.



Standard Camera Positioning

For similar reasons, 16- and 12-channel audio mixers, respectively, will be allocated to each of the two studios, according to the number of input units as follows:

Input units \ Studio	Studio - 1	Studio - 2
Microphone	8	4
VTR	2	2
Tape recorder	2	2
Disc player	1	1
Compact disc	1	1
Cassette tape recorder	2	2
Total:	16	12

As to the specifications of the equipment to be provided, consideration will be given to the fact that they are to be used for the training of students and that the programmes produced with them are to be broadcast by DDI. Accordingly, the specifications shall be those that take into account the durability, reliability, stability and the facility of maintenance and operation. The equipment to be provided should also be of such specifications that the students who have been given training with the equipment will be able to fully cope with the current technical levels of the mass communication media in India. For that reason, the specifications of the equipment shall be of the PAL-B system which is the broadcasting system in India that is in accordance with the technical standards of the CCIR.

4-3 Basic Design

4-3-1 Equipment Layout

Considering the results of studies made of the layout conditions,etc., and the installation systems in each of the rooms in the studio building, ideal layouts of the main equipment have been designed and are shown in Figs. 4-3-1 ~4-3-4 in the following pages.

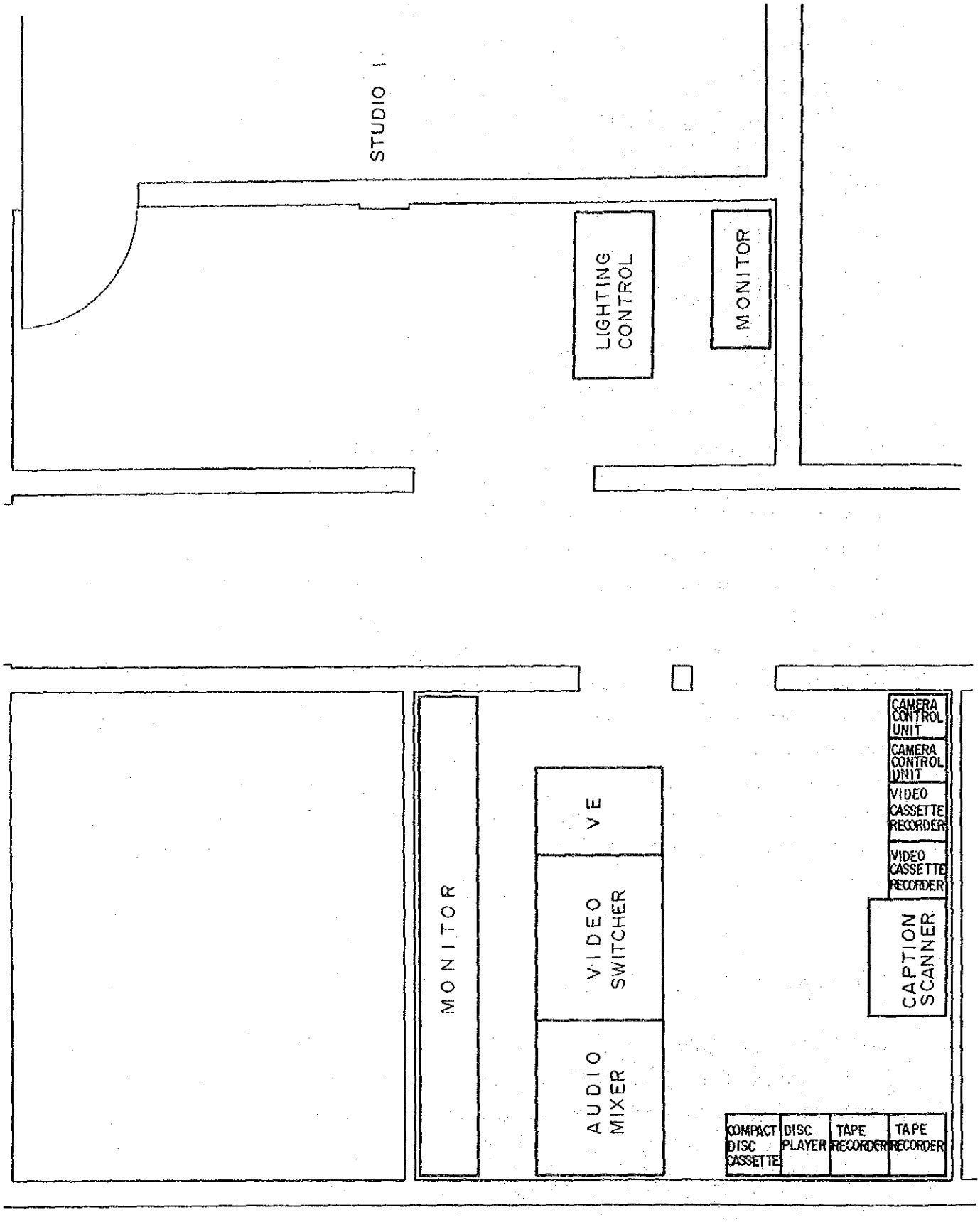


Fig. 4-3-1 FLOOR LAYOUT OF VIDEO PROGRAMME PRODUCTION STUDIO 1 (1:50)

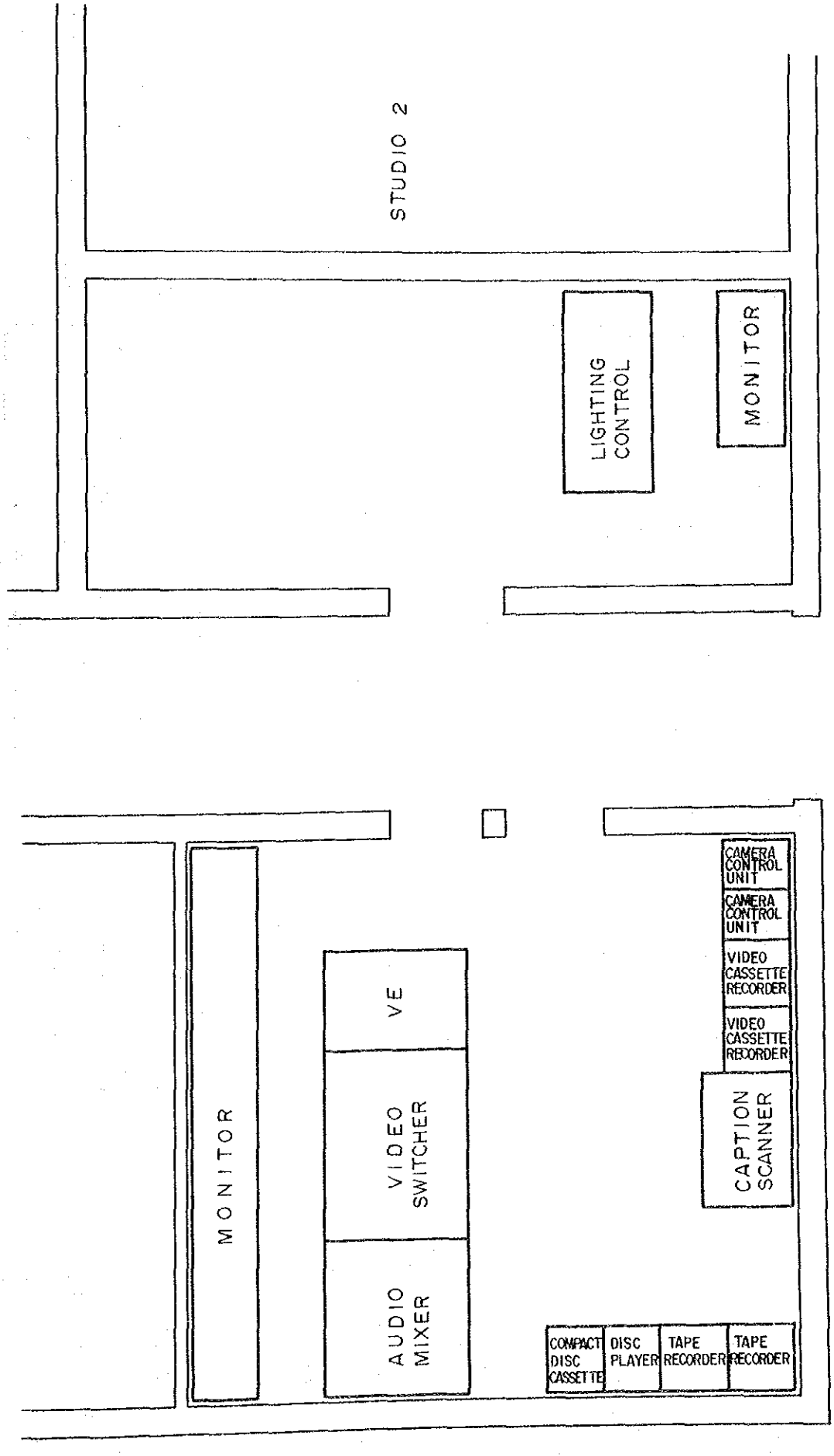


Fig. 4-3-2 FLOOR LAYOUT OF VIDEO PROGRAMME PRODUCTION STUDIO 2

(1:50)

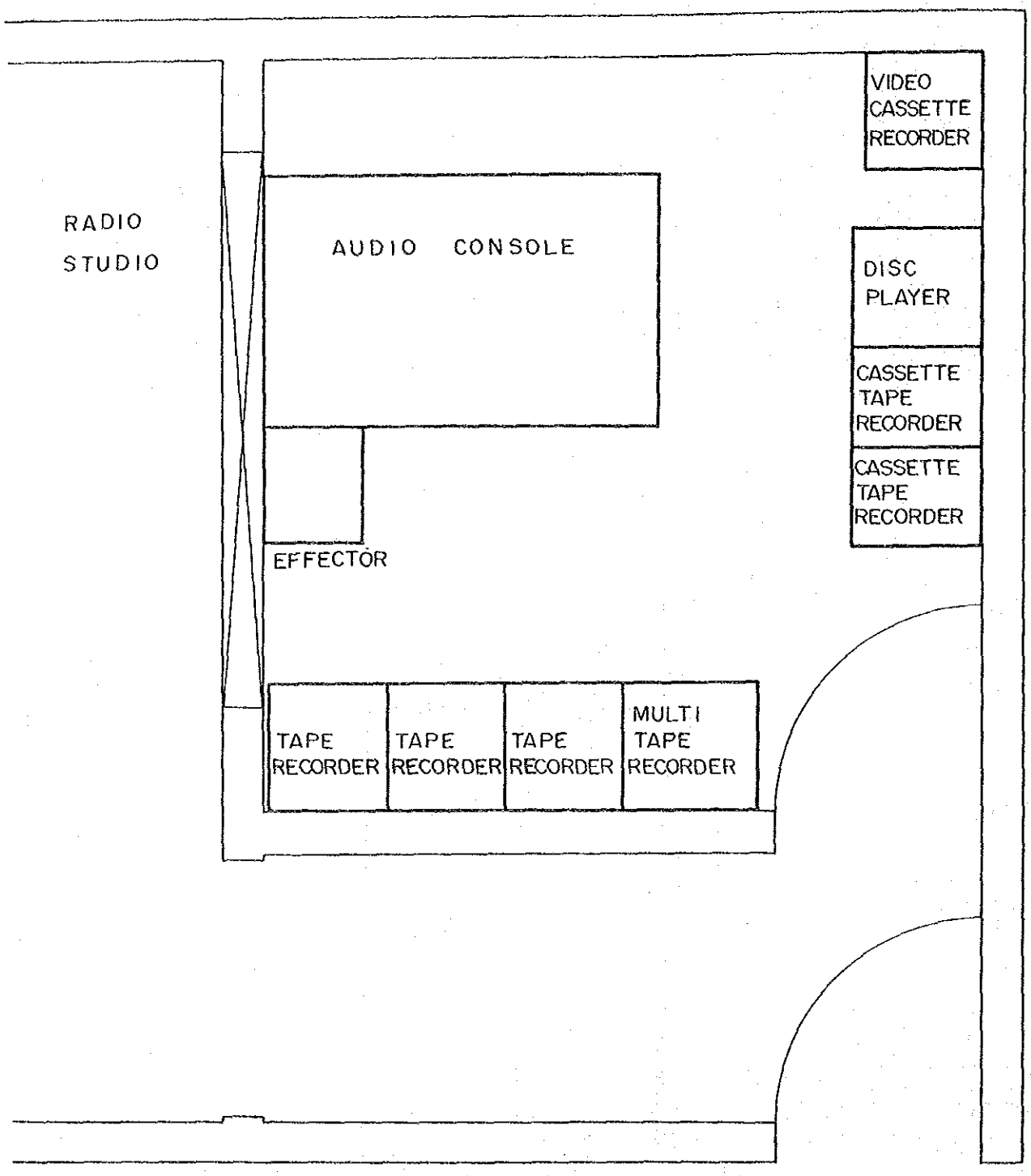


Fig. 4-3-3 FLOOR LAYOUT OF AUDIO / DUBBING STUDIO (1:30)

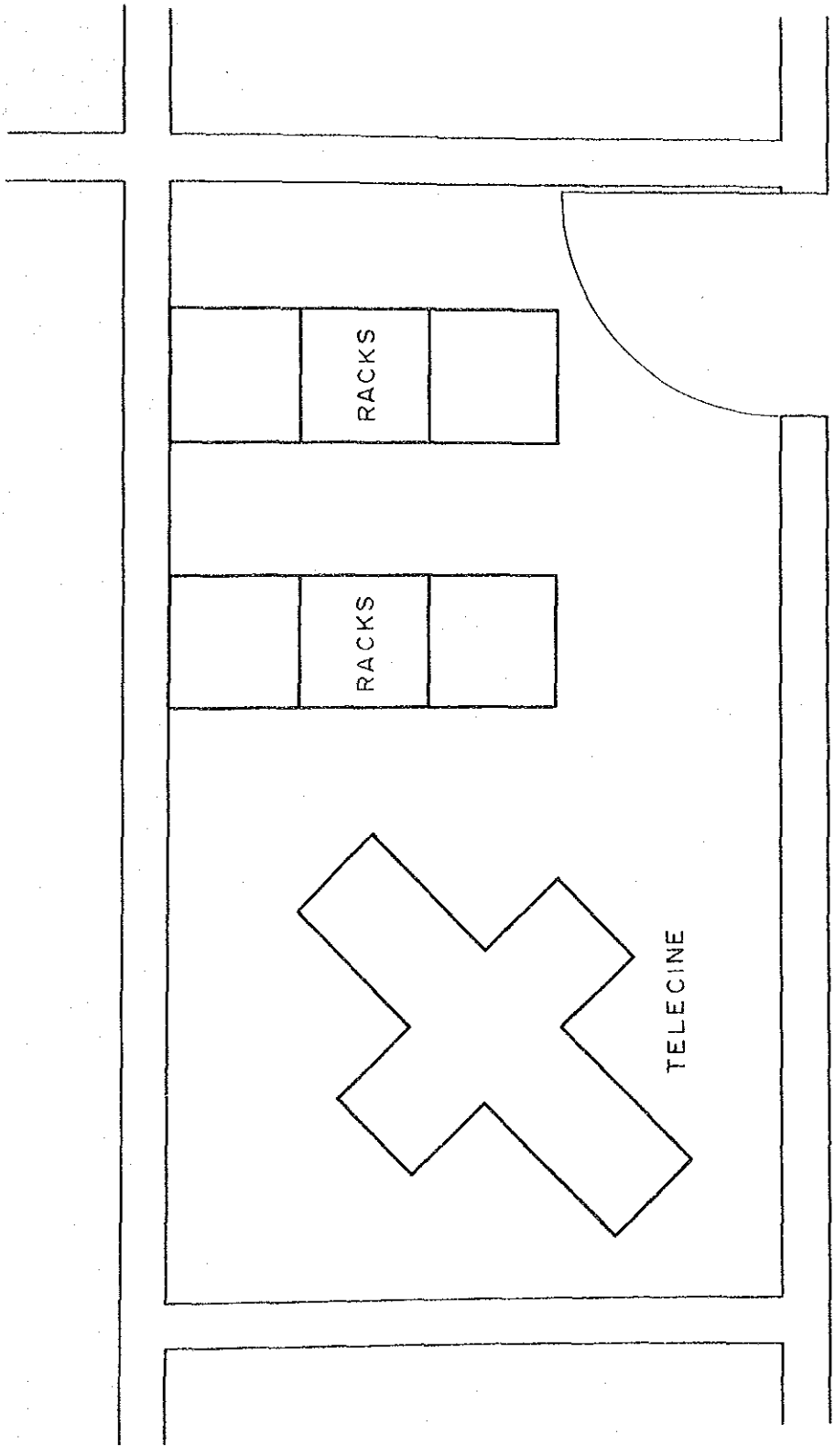


Fig. 4-3-4 FLOOR LAYOUT OF MASTER CONTROL ROOM (1:30)

4-3-2 Composition of Equipment

As a result of the examination of the design policies and conditions, the compositions of the main equipment to be provided are as follows:

(1)	Video Programme Production Studio - 1		
	1) Colour Camera System		3 sets
	Colour camera	3	
	(3 CCD, studio type)		
	Zoom lens	3	
	Pedestal	3	
	Camera cable	3	
	Test pattern	3	
	2) Caption Scanner		1 set
	3) Character Generator		1 set
	4) Video Production Switcher		1 set
	(incl. chroma-key and special effects)		
	5) Audio Production Equipment		1 set
	Audio production mixer	1	
	(16 channels)		
	Disc reproducer	1	
	CD player	1	
	Tape recorder	2	
	Cassette tape-recorder	2	
	Microphones and stands	1 set	
	Reverberation equipment	2	
	6) VCR		2 sets
	½inch VCR	2	
	Waveform monitor	2	
	Vectorscope	2	
	Video minotor	2	
	Audio monitor	2	
	7) Monitor		1 set
	Video production monitor	1 set	
	Video engineering monitor	1 set	
	Studio floor monitor	1 set	
	Audio monitor for subcontrol room	1 set	
	Ceiling speaker	1 set	
	8) Intercommunication Equipment		1 set

9)	Lighting Equipment		1 set
	Grid-pipes and rails	1 set	
	Dimmer	1 set	
	Lighting instrument	1 set	
	Cyclorama	1 set	

(2) Video Programme Production Studio - 2

1)	Colour Camera System		3 sets
	Colour camera	3	
	(3 CCD, portable type)		
	Zoom lens	3	
	Pedestal	3	
	Camera cable	3	
	Test pattern	3	
2)	Caption Scanner		1 set
3)	Character Generator		1 set
4)	Video Production Switcher		1 set
	(incl. chroma-key and special effects)		
5)	Audio Production Equipment		1 set
	Audio production mixer	1	
	(12 channels)		
	Disc reproducer	1	
	CD player	1	
	Tape recorder	2	
	Cassette tape-recorder	2	
	Microphones and stands	1 set	
	Reverberation device	2	
6)	VCR		2 sets
	$\frac{1}{2}$inch VCR	2	
	Waveform monitor	2	
	Vectorscope	2	
	Video monitor	2	
	Audio monitor	2	
7)	Monitor		1 set
	Video production monitor	1 set	
	Video engineering monitor	1 set	
	Studio floor monitor	1 set	

Audio monitor for subcontrol room	1 set		
Ceiling speaker	1 set		
8) Intercommunication Equipment			1 set
9) Lighting Equipment			1 set
Grid-pipes and rails	1 set		
Dimmer	1 set		
Lighting instrument	1 set		
Cyclorama	1 set		
(3) Audio Production / Dubbing Studio			
1) Audio Production / Voice-dubbing Equipment			1 set
Audio production mixer (16 channels)	1		
Multi-track tape-recording player (8 tracks)	1		
Tape recorder	3		
Cassette tape-recorder	2		
Disc reproducer	1		
CD player	1		
Signal synchronization device	1		
Effects device	1		
Microphones and stands	1 set		
Announcer's cough box	1		
Announcer's desk	1		
2) Monitor			1 set
Monitor speaker	4		
Headphone	1 set		
Headphone box	1		
Video monitor	2		
3) ½inch VCR			1 set
(4) Post-production Studio			
1) VCR			1 set
½inch VCR	3		
¾inch VCR (low band)	1		
2) Editor			1 set
3) Video Production Equipment			1 set
Video production switcher	1		

	Digital video effects equipment	1	
	Caption scanner	1	
	Character generator	1	
	Computer graphics	1	
	Telecine chain	1	
4)	Audio Production Equipment		1 set
	Audio production mixer (12 channels)	1	
	Disc reproducer	1	
	CD player	1	
	Tape recorder	2	
	Cassette tape-recorder	2	
	Audio effects device	1	
5)	Monitor		1 set
6)	Console		1 set
(5)	Master Control Room		
1)	Synchronizing and Test Signal Generator		1 set
2)	Clock System		1 set
3)	Inter-room Communication Equipment		1 set
4)	RF Signal Distribution Equipment		1 set
5)	Videotape Duplicator		1 set
(6)	Editing Equipment		
1)	Single-step Editor		3 sets
	$\frac{1}{2}$inch VCR	6	
	Monitoring equipment	6	
	Operating console	3	
	Editor	3	
(7)	Outdoor Coverage Equipment		
1)	VTR-combined Camera		5 sets
	VTR-combined camera (3 CCD)	5	
	Zoom lens	5	
	Tripod	5	
	Battery and battery-charger	5	
	AC power-source adapter	5	

2)	Audio Equipment		5 sets
	Portable mixer	5	
	Portable-type open-reel tape recorder	5	
	Battery and battery-charger	5	
	Microphones and booms	5	
	Lapel microphone	5	
	Headphone	5	
3)	Monitor		5 sets
	Video monitor	5	
	Portable waveform monitor	5	
	Battery and battery-charger	5	
4)	Lighting Equipment		5 sets
	200W daylight lamp	5	
	Battery and battery-charger	5	
	AC power-source adapter	5	
(8)	Still-photography Equipment		
1)	Camera		30 sets
2)	Projection Equipment		30 sets
	35mm slide projector	30	
	Automatic forwarding device	15	
	Tape-deck	15	
	Small audio mixer (6 channels)	3	
	Screen	15	
3)	Developing Equipment		1 set
	Personal Processor	10	
	Auto Colour Paper Processor	2	
	Auto Monochrome Paper Processor	2	
	Colour Print Set	10	
(9)	Presentation Equipment		4 sets
	Video Projector	4	
	100inch Screen	4	
	VTR (VHS)	4	
	Speaker	4	
(10)	Power-source Equipment		
1)	Power Receiving Board		1 set

2)	Power Distribution Board		1 set
3)	Isolation Transformer		1 set
4)	Automatic Voltage Regulator (35kVA)		1 set
5)	Generator (150kVA)		1 set

(11) Measuring Instruments and Tools

1)	Measuring Instruments		1 set
	Oscilloscope	2	
	Vectorscope	1	
	TV test-signal generator	1	
	Audio Test Set	2	
	Video resistance attenuator	2	
	Audio resistance attenuator	2	
	Illuminometer	2	
	Colour meter	2	
	Electric voltmeter	2	
	Megger	1	
	Tester	10	
	Ammeter	1	
	Voltmeter	1	
	Adjusting-tape for VCR	5 sets	
	Audio tape for test-use	2 sets	
	Variable power-source (DC)	1 set	
	Variable power-source (AC)	1 set	
	Portable Waveform monitor	1 set	
	Component waveform monitor	1 set	
	Component waveform signal generator	1 set	
2)	Tools		1 set
	Tool set	10 sets	
	Special tools	2 sets	

(12) Spare Parts 1 set

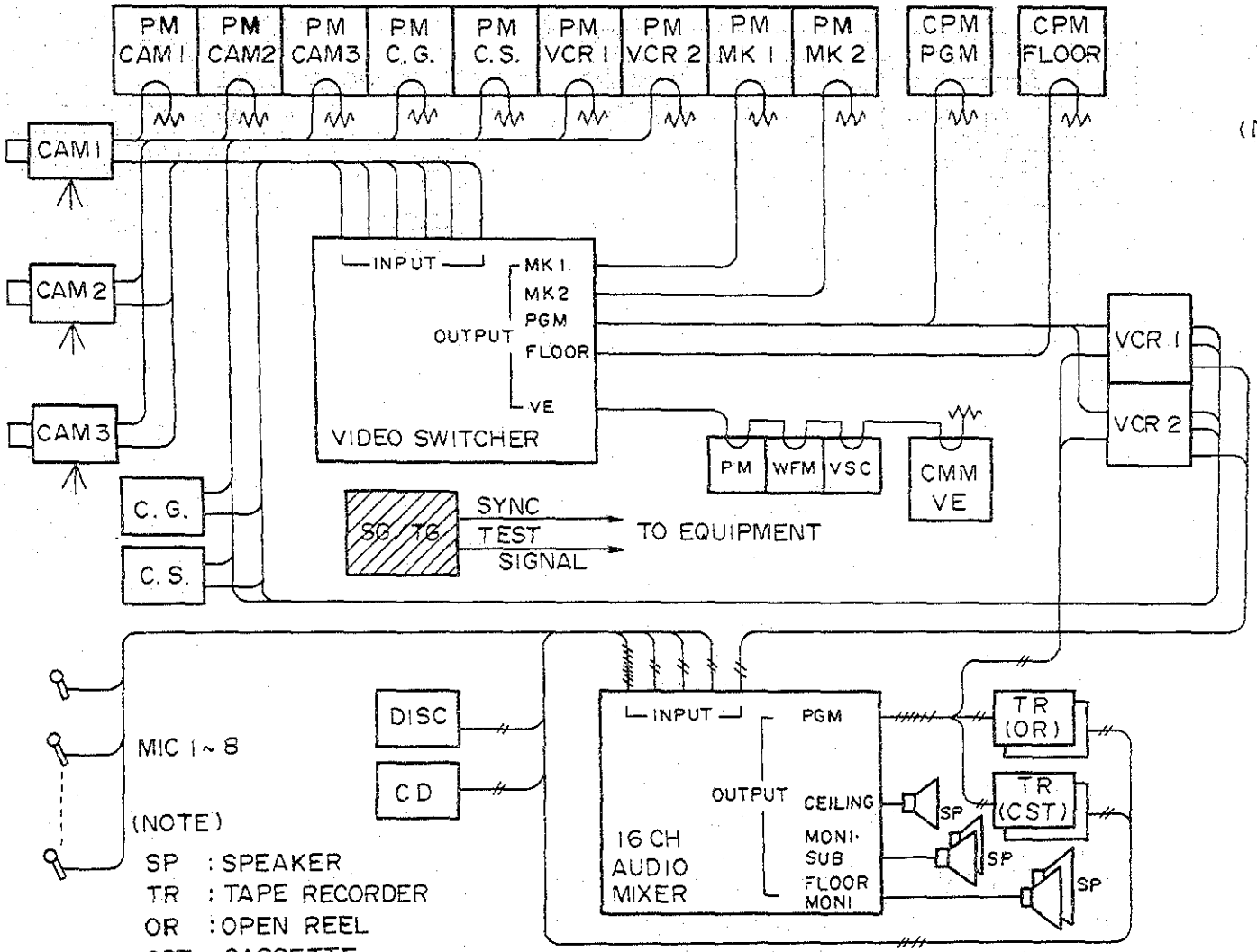
(13) Others

Blank tapes for test use	1 set
Attachment for Camera	1 set

4-4 Basic Design Drawings

The following block diagrams of major systems are attached hereto.

Fig. 4-4-1 BLOCK DIAGRAM OF VIDEO PROGRAMME PRODUCTION STUDIO 1
Fig. 4-4-2 BLOCK DIAGRAM OF VIDEO PROGRAMME PRODUCTION STUDIO 2
Fig. 4-4-3 BLOCK DIAGRAM OF AUDIO/DUBBING STUDIO
Fig. 4-4-4 BLOCK DIAGRAM OF POST PRODUCTION STUDIO
Fig. 4-4-5 BLOCK DIAGRAM OF DUPLICATION SYSTEM
Fig. 4-4-6 BLOCK DIAGRAM OF SINGLE STEP EDITING SYSTEM
Fig. 4-4-7 BLOCK DIAGRAM OF OUTDOOR COVERAGE EQUIPMENT



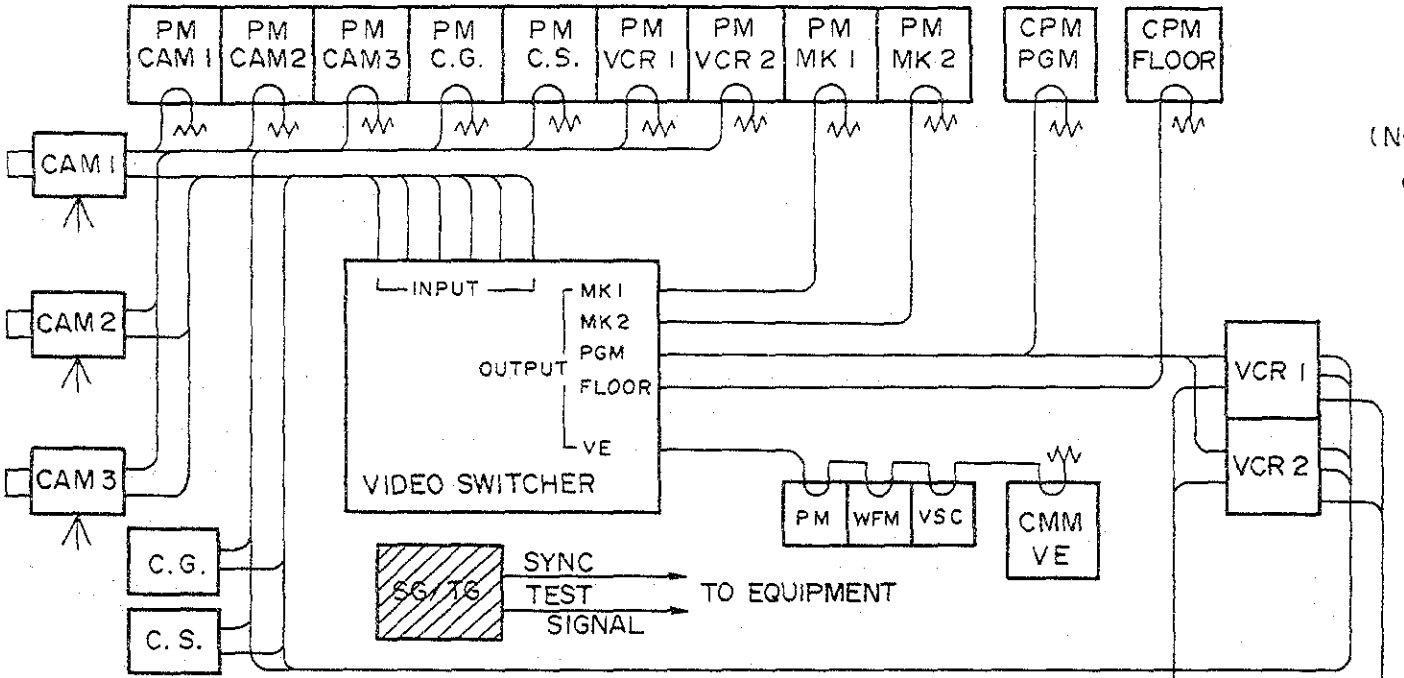
(NOTE)

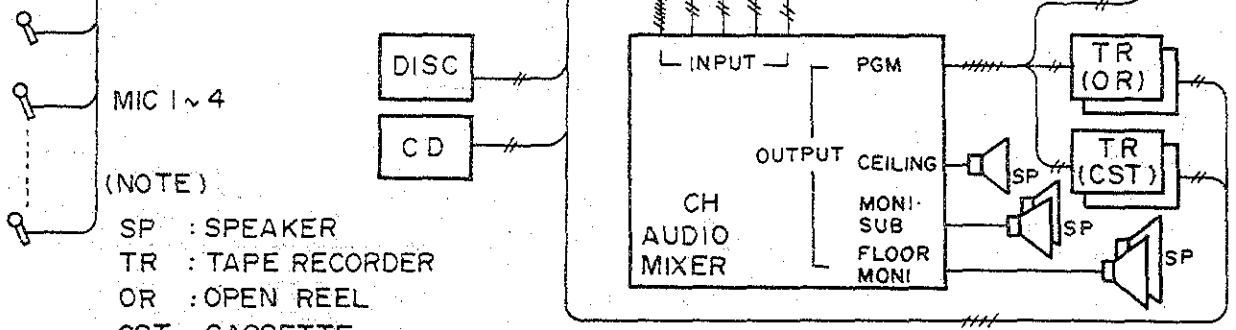
CAM	: CAMERA
C.S.	: CAPTION SCANNER
VCR	: VIDEO CASSETTE RECORDER
MK	: MIX KEYER
PM	: PICTURE MONITOR
CPM	: COLOUR PICTURE MONITOR
PGM	: PROGRAMME
FLOOR	: STUDIO FLOOR
WFM	: WAVE FORM MONITOR
VSC	: VECTOR SCOPE
VE	: VIDEO ENGINEER
CMM	: COLOUR MASTER MONITOR
SG	: SYNC GENERATOR
TG	: TEST SIGNAL GENERATOR
C.G.	: CHARACTOR GENERATOR

(NOTE)

SP	: SPEAKER
TR	: TAPE RECORDER
OR	: OPEN REEL
CST	: CASSETTE
MIC	: MICROPHONE
DISC	: DISC PLAYER
CD	: COMPACT DISC

Fig. 4-4-1 BLOCK DIAGRAM OF VIDEO PROGRAMME PRODUCTION STUDIO 1





(NOTE)

CAM : CAMERA
C.S. : CAPTION SCANNER
VCR : VIDEO CASSETTE RECORDER
MK : MIX KEYER
PM : PICTURE MONITOR
CPM : COLOUR PICTURE MONITOR
PGM : PROGRAMME
FLOOR : STUDIO FLOOR
WFM : WAVE FORM MONITOR
VSC : VECTOR SCOPE
VE : VIDEO ENGINEER
CMM : COLOUR MASTER MONITOR
SG : SYNC GENERATOR
TG : TEST SIGNAL GENERATOR
C.G : CHARACTOR GENERATOR

(NOTE)

SP : SPEAKER
TR : TAPE RECORDER
OR : OPEN REEL
CST : CASSETTE
MIC : MICROPHONE
DISC : DISC PLAYER
CD : COMPACT DISC

Fig. 4-4-2 BLOCK DIAGRAM OF VIDEO PROGRAMME PRODUCTION STUDIO 2

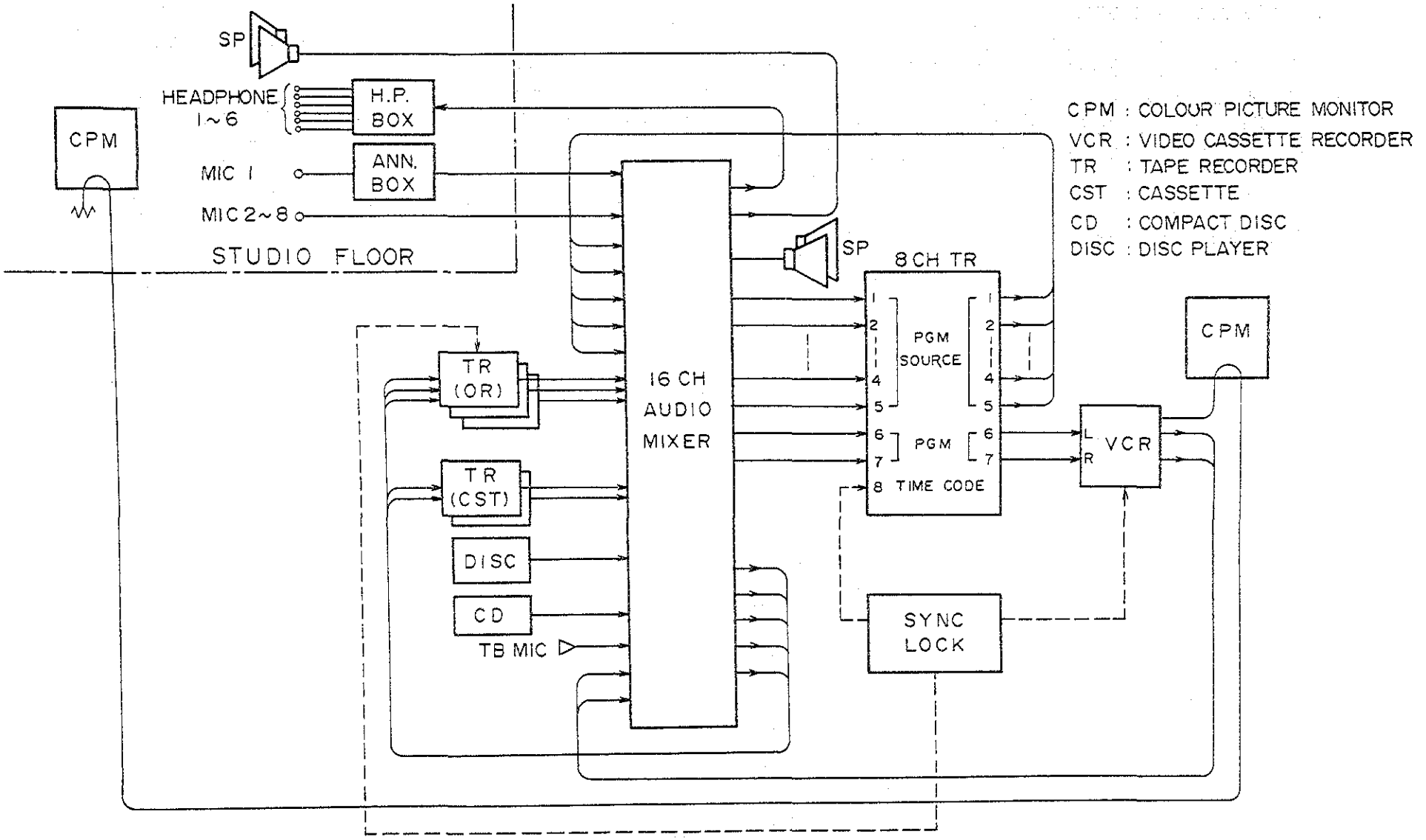


Fig. 4-4-3 BLOCK DIAGRAM OF AUDIO / DUBBING STUDIO

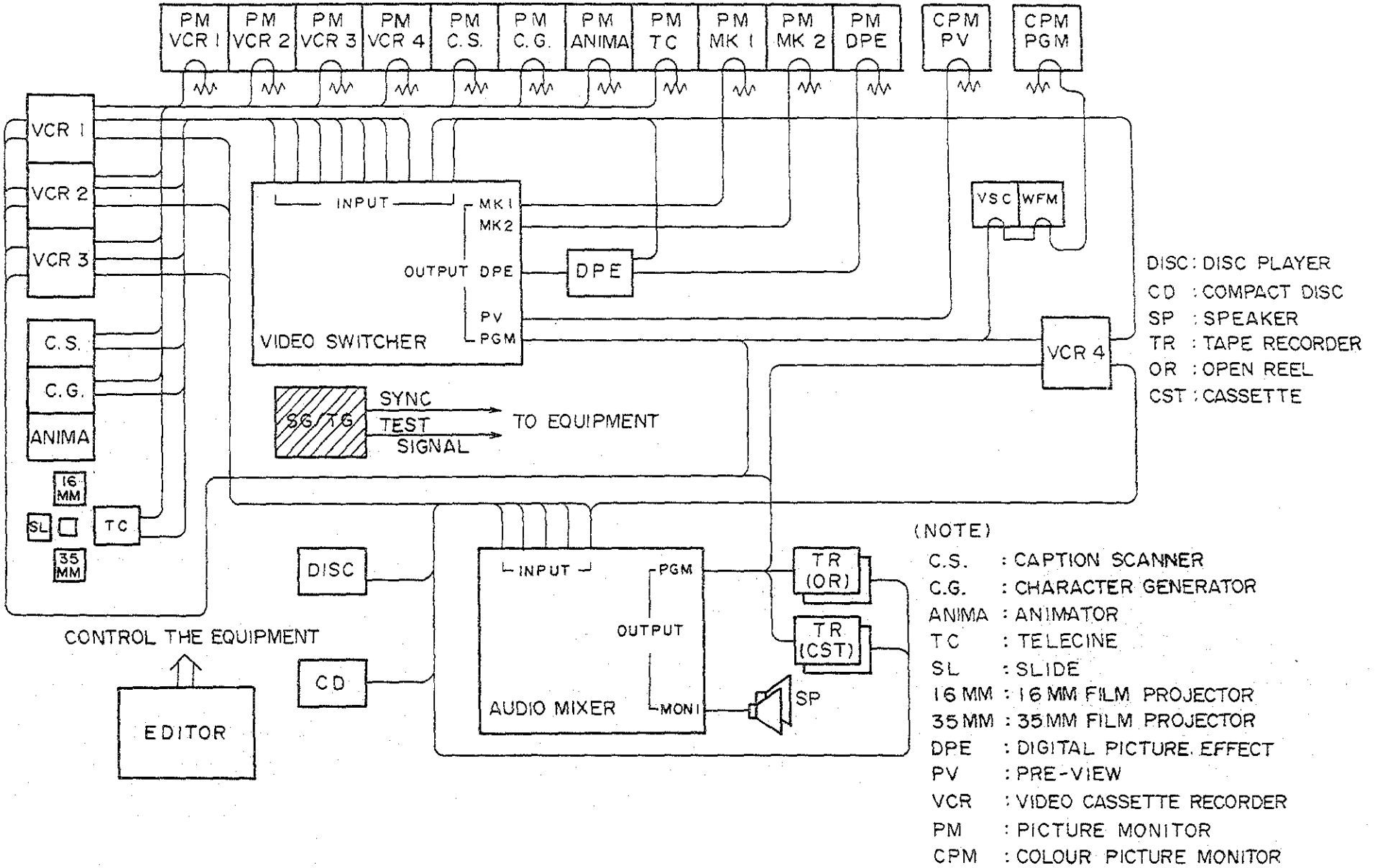


Fig. 4 - 4 - 4 BLOCK DIAGRAM OF POST PRODUCTION STUDIO

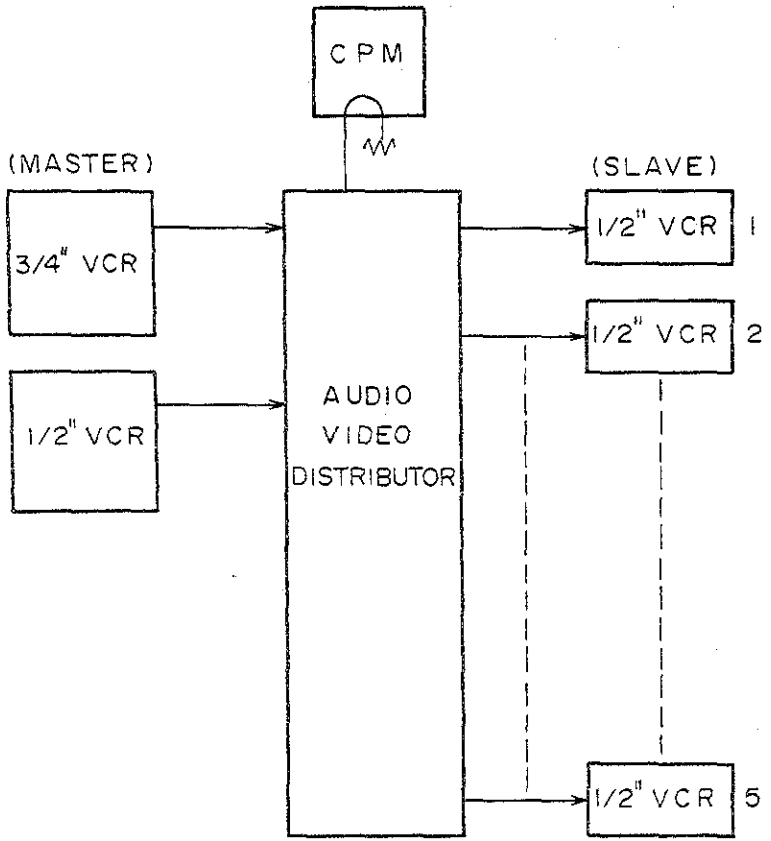


Fig. 4-4-5 BLOCK DIAGRAM OF DUPLICATION SYSTEM

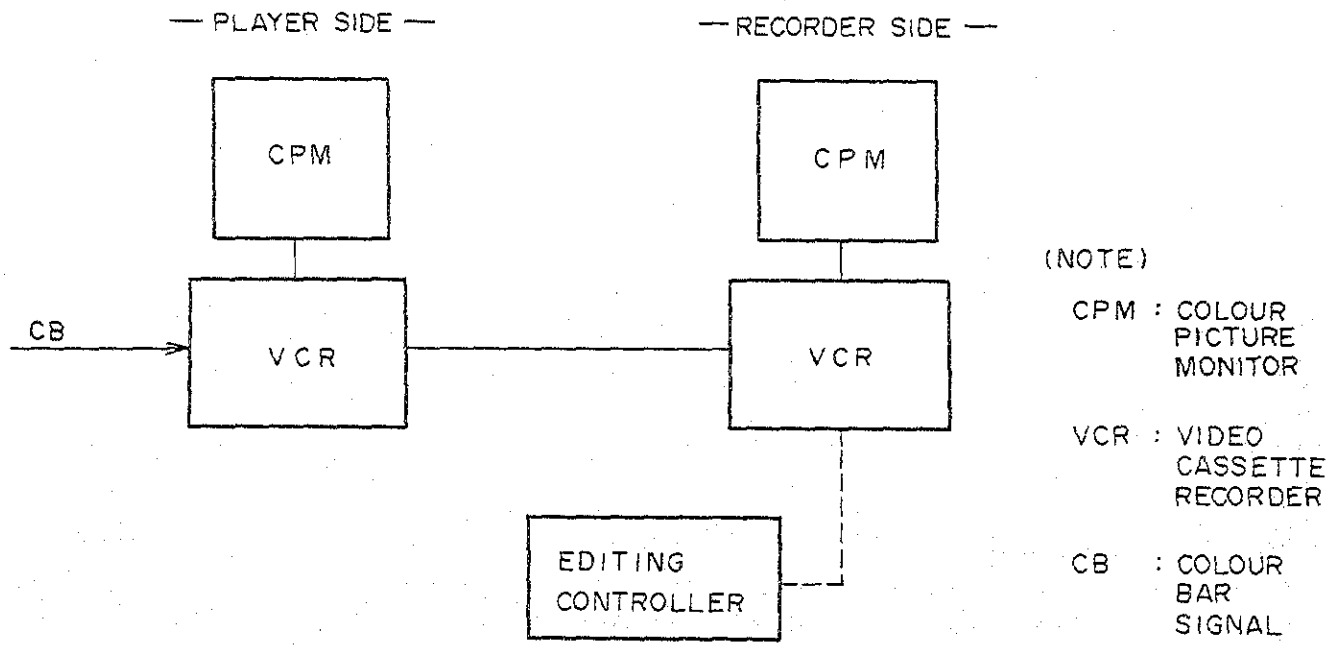


Fig. 4-4-6 BLOCK DIAGRAM OF SINGLE STEP EDITING SYSTEM

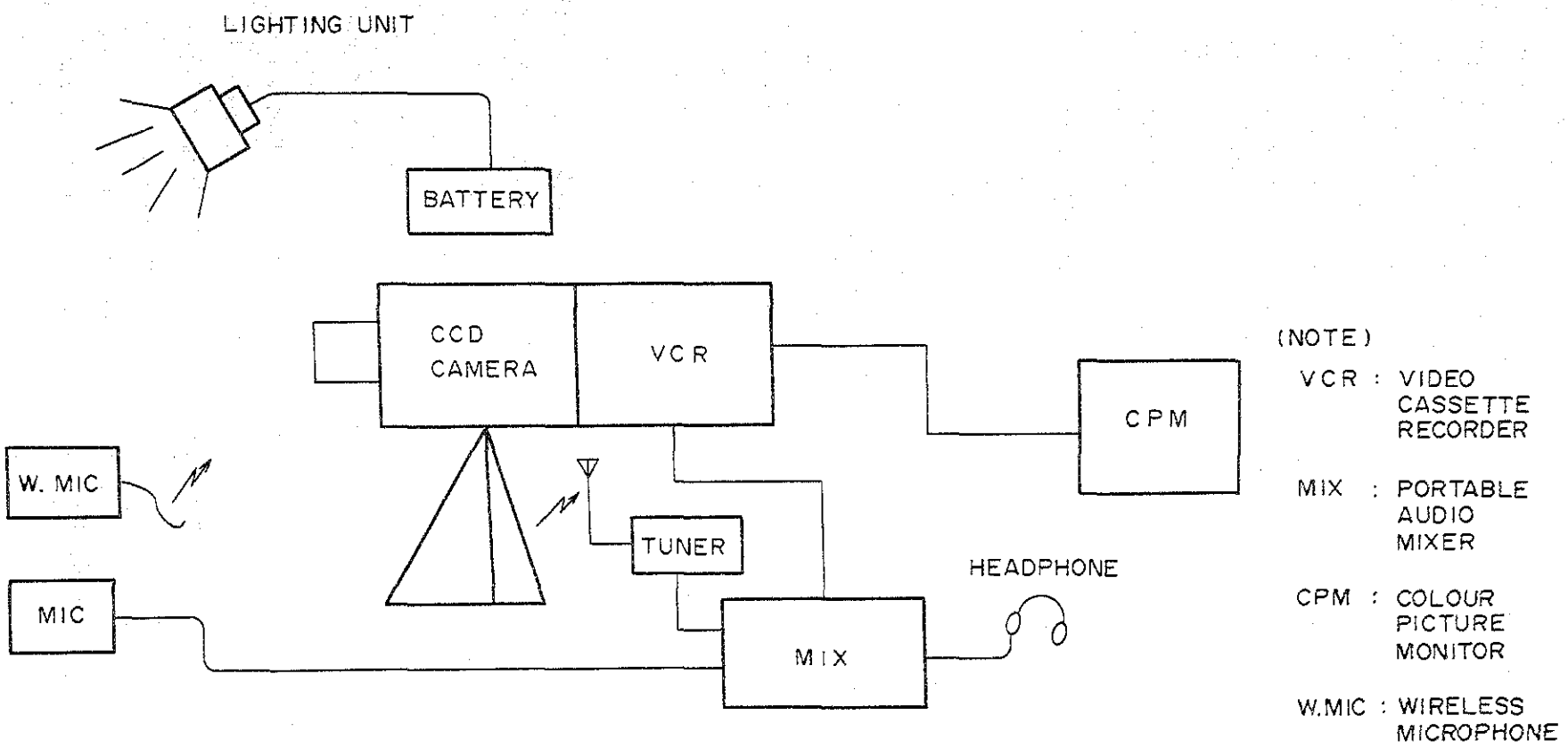


Fig. 4-4-7 BLOCK DIAGRAM OF OUTDOOR COVERAGE EQUIPMENT

4-5 Implementation Plan

4-5-1 Executing Organization

This Project shall be executed by the Mass Communication Research Centre (MCRC) in the Jamia Millia Islamia University which is under the supervision of the Ministry of Human Resources of India.

4-5-2 Division of the Construction Work

The following is the outline of the division of the construction work to be undertaken by the two countries in executing this Project.

(1) Construction Work Undertaken by the Japanese Government's Side

1) Equipment
   - Manufacture, installation and wiring of the equipment.

2) Related Work, etc.
   - Transportation of the materials and equipment from Japan to the Project site in India.

(2) Construction Work Undertaken by the Indian Side

1) Construction of the Building
   - Partial remodelling work.

2) Furniture and Fittings
   - Procurement of necessary furniture and fittings.

3) Procedural Work, Bearing of Expenses, etc.
   - Expenses required for arrangements with the banks.
   - Expenses required in taking necessary tax-exemption procedures.
   - Necessary measures to be taken in relation to customs clearance and inland transportation.
   - Tax-exemption procedures concerning duties, domestic taxes and other financial surcharges imposed in India on the Japanese people who are engaged in the execution of the Project in accordance with the authorized contracts.
   - Necessary facilities to be afforded to the above-mentioned Japanese people in their entry into and stay in India for the purpose of engaging in the work under this Project.
   - Maintenance and management to ensure appropriate and effective operation of the equipment and facilities to be provided and installed under this Project.

4-5-3 Construction and Supervisory Plan

In order to ensure smooth running of this Project with Japan's grant aid assistance, there is the need of carrying on the work while paying careful attention to the following basic policies and key points:

(1) Detailed Design

- Attention will be paid to matching with the existing building.
- Based on the design policies, facilities of an appropriate scale and equipment of appropriate types will be designed.

(2) Tender

- To pay careful attention to implementation of a fair tender.

(3) Construction Contract

- To make an exhaustive breakdown study of the works, conditions of contract, etc.

(4) Approval of the Drawings

- Whether or not there is any difference of opinion regarding the system will be checked.
- Whether or not the number of items of equipment and their performances are in conformity with the specifications will be checked.

(5) Factory Inspection

- Checking will be conducted at the factories concerned regarding the details of the equipment to be shipped to India under this Project. The inspection will be conducted under conditions as close as possible to those of the equipment when installed in India, so as to check closely the items that have not been able to be confirmed on the drawings and also to make sure that the performance of the equipment is exactly as expected.

(6) Supervision of the On-site Construction Work

- Maximum consideration will be given to ensuring safety during the construction work.
- Close communication will be maintained among all the parties concerned with the construction work under this Project.

- Efforts will be made to promote technological transfer on the construction site.

(7) Acceptance Inspection on the Construction Site

- Close attention will be paid to the reproducibility of the designed performances of the equipment after their installation on the Project site, based on the data obtained from the factory inspection.

(8) Completion of the Construction Work

- The delivery shall be made to the Indian side after the construction site has been cleared up as far as possible, including the clearing away of the remaining construction materials.

Under this Project, a great variety of equipment are going to be supplied and, moreover, there is the need of conducting the assembling of complex systems, such as TV and radio studios and a post-production studio. For that reason, in order to carry out the construction work smoothly and efficiently within the restricted period of construction, it is necessary to send from Japan the right types of specialized engineers at the right time. Besides, as is the case in any project, the length of the construction periods largely depends on the efficiency of transportation. In the case of this Project, in particular, special attention needs to be paid to this question of transportation, since the Project involves the transportation of a large quantity of precision machines. Hence, there is the need of not only selecting a transport company with much experience in this type of work but also of examining the execution schedules thoroughly and of establishing a detailed construction schedule. Furthermore, it is of utmost importance for both sides to keep each other informed and to cooperate closely so as to ensure that the Project is carried out smoothly as a joint venture by the two countries.

In carrying out this Project, the consultant, based on the above-mentioned basic policies and key points, will assign appropriate personnel and will do its utmost to ensure smooth execution of the construction work while keeping in close touch with the organizations concerned on the Indian side as well as with those on the Japanese side. The consultant will also do its utmost to prevent the arising of any problem or accident

that may obstruct the smooth execution of the Project and, once such a problem or accident arises, will do everything in its power to give appropriate and timely guidance and advice.

4-5-4 Procurement Plan

Various items of equipment, their auxiliary equipment and construction materials will be procured in Japan. The equipment, either as units or as systems, will be assembled and inspected (factory inspection) in Japan and will then be shipped to India. Where necessary, the equipment will be disassembled before the shipment. Upon arrival in India, the equipment will be installed on the Project site in their respective original forms.

4-6 Implementation Schedule

The necessary procedures to be taken for the implementation of the Project are:

- After the conclusion of the Exchange of Notes between the Government of the Republic of India and the Government of Japan, a consultant agreement for the implementation of the Project will be made;

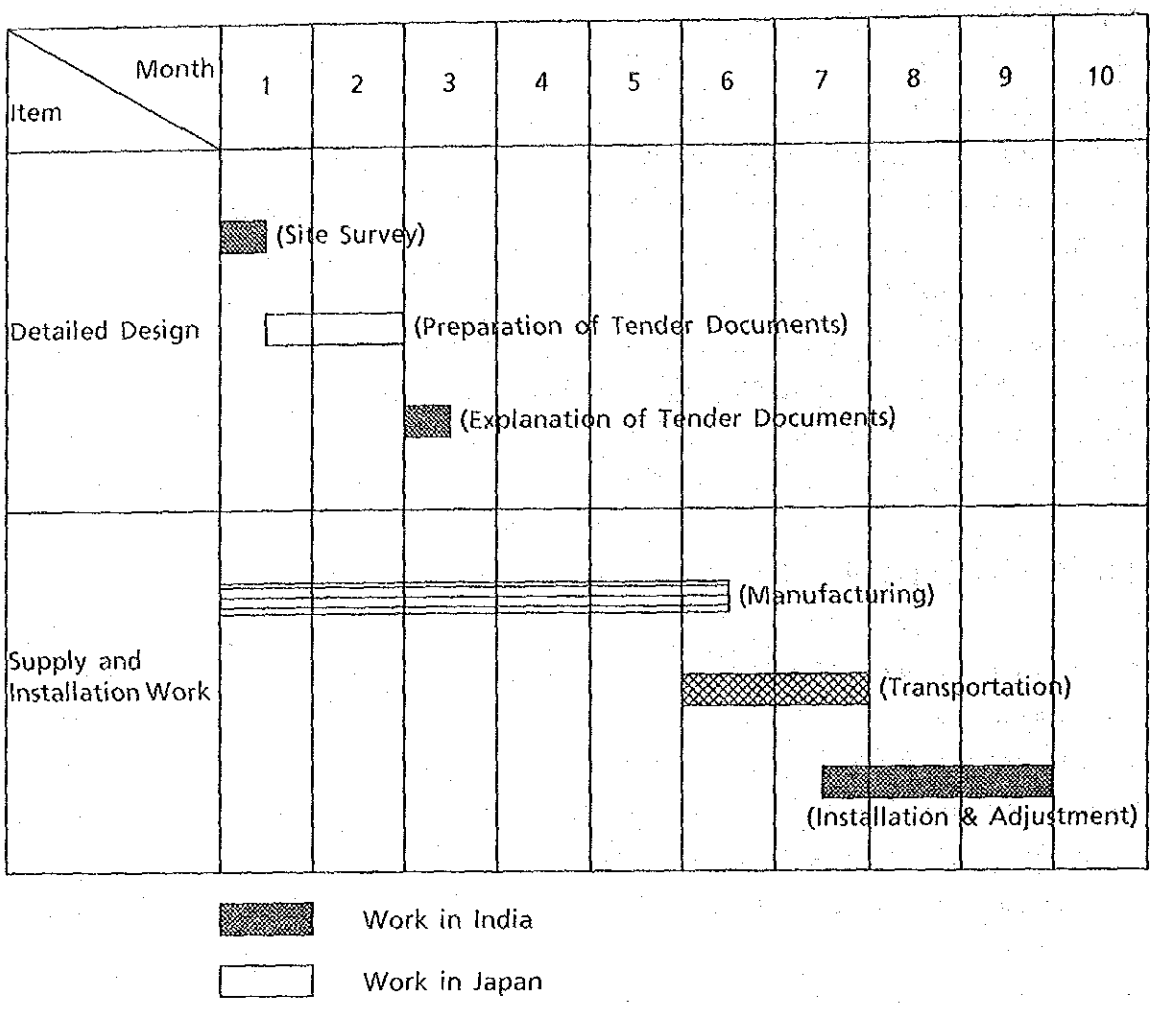
- after that, the detailed design and preparation of Tender Documents are carried out by the consultant and the Tender then takes place;

- after the evaluation of the Tender proposals, a contract for the execution of the Project will be made between the Government of the Republic of India and the Japanese contractor. The work will be started.

The term of the implementation of the Project will be about 9 months after the signing of the Contractor Contract.

The tentative implementation schedule is shown in Table 4-6-1.

Table 4-6-1 Implementation Schedule



4-7 Estimate of the Approximate Project Cost

Approximate Project cost to be covered by the Indian side is estimated at about 0.25 million rupees for the remodelling of the studio building.

CHAPTER 5 Project Evaluation and Conclusion

CHAPTER 5 Project Evaluation and Conclusion

5-1 Effects of Execution of the Project and the Degree of Improvements Expected

The following are the problems observed in the present status and the anticipated effects obtained from the implementation of the Project.

Present Condition and Problems	Measures Proposed under This Project	Degree of Effects and Improvements Expected from the Project
① In India, in response to the spectacular expansion of the mass communication media, the needs for competent human resources continue to be extremely high. One example can be seen in the trend of the broadcasting circles where the number of personnel has been increased by 8,100 during the last 3 years and about 20,000 more are scheduled to be added during the 8th 5-year National Development Plan. If the demands from other circles such as the film industry, newspapers and private TV programme production companies were taken into account, the needs for personnel would come up to a very high level. Against such a backdrop, the annual number of applicants for enrollment in MCRC exceeds 800, coming from across India. However, with the existing facilities, the maximum number of students that MCRC is capable of enrolling each year remains a mere 30 or so. ② Meanwhile, the number of radio and TV programmes that MCRC produces at the request of the UGC, government organs and universities keeps on increasing each year. In 1990/91, production of 280 programmes is being planned by MCRC. However, with only one temporary TV studio in its possession now, MCRC has already exceeded the limit in its capacity, the usage rate of that studio having reached 170%. Thus, MCRC is unable to produce the number of programmes requested by UGC. So, there is the urgent need for MCRC to carry out qualitative and quantitative improvements in its programme producing activities.	Under this Project, the following items of equipment will be provided to the new studio building constructed by MCRC: the equipment for the video programme production studios and the audio programme production studio, three sets of editing equipment, five sets of outdoor coverage equipment, 30 sets of still-photograpy equipment and other auxiliary equipment.	When this Project is completed: ① The current capacity of 30 students each year will be doubled to 60, the present 2-year course will be extended to 3 years and the total capacity will be trebled to 180 students. Furthermore, opening of an engineering course will become feasible. ② As for programme production, MCRC plans to increase annual output to 630 programmes, just about double the present programme producing capacity, a plan that can be realized as a result of implementation of this Project. Furthermore, the quality of the programmes to be produced will be improved substantially. Thus, the Project can be expected to produce substantial results and contribute greatly to India's social progress through the supply of high-calibre personnel to the mass communication media and provision of teaching materials to educational circles.

5-2 Conclusions

Upon completion of this Project, the major quantitative and qualitative problems which have kept on confronting MCRC with regard to the facilities and equipment in current use will be solved and MCRC's capability to train and foster human resources and its functions to produce educational programmes for broadcasting use, both of which are essential for MCRC in fulfilling its mission, will be further reinforced. Thus, as mentioned in this report, substantial effects can be expected from the implementation of this Project. The increased supply of high-calibre personnel will lead to further improvement of mass communication infrastructure, which, in turn, will have far-reaching effects upon the people through broadcasting.

Meanwhile, improvement and expansion of MCRC as an educational institution will contribute to the enhancement of the level of college education and, moreover, through the broadcasts of various types of educational programmes produced there, will greatly help promote not only mutual understanding among the people in India but also the well-being of the entire nation. Furthermore, it is considered that there is no problem whatever about this Project, in view of the ample availability of both the human resources and the funds which are required in carrying it out. For such reasons as mentioned above, it is judged as being perfectly appropriate to implement this Project with the Japanese government's grant aid assistance.

APPENDIX

1. Member List of the Study Team

1. Member List of the Study Team

(1) Basic Design Study

Name	Assignment	Present post	Period
Mr. Kohsaku TANAKA	Leader	Section Chief, Engineering Division, Broadcasting Bureau, Ministry of Posts and Telecommunications	July 1 to 14, 1990
Mr. Akimichi NAGASAWA	Programme Planning	Senior Director, Life Long Education Div., Educational Programme Centre, Programme Production Dept., NHK	July 1 to 14, 1990
Mr. Toshimichi AOKI	Project Coordinator	First Basic Design Study Div., Grant Aid Design & Study Dept., JICA	July 1 to 14, 1990
Mr. Naohiko SHIMADA	Programme Production Engineering	NHK Integrated Technology Inc.	July 1 to 20, 1990
Mr. Jiro OHNO	Studio Equipment	NHK Integrated Technology Inc.	July 1 to 20, 1990
Mr. Akira NAGASE	Video & Sound Recording Equipment	NHK Integrated Technology Inc.	July 1 to 20, 1990

(2) Explanation and Discussion on the Draft Final Report

Name	Assignment	Present post	Period
Mr. Kohsaku TANAKA	Leader	Section Chief, Engineering Division, Broadcasting Bureau, Ministry of Posts and Telecommunications	Oct. 21 to 30, 1990
Mr. Naohiko SHIMADA	Programme Production Engineering	NHK Integrated Technology Inc.	Oct. 21 to 30, 1990
Mr. Jiro OHNO	Studio Equipment	NHK Integrated Technology Inc.	Oct. 21 to 30, 1990

2. Study Schedule

2. Study Schedule

(1) Basic Design Study

No.	Date	Officials	Consultant
1	July 1 (Sun.)	Shift from Tokyo to New Delhi (AZ787)	
2	2 (Mon.)	Courtesy-call to Embassy of Japan and JICA office Meeting at MCRC office	
3	3 (Tue.)	Visit to MCRC	
4	4 (Wed.)	Discussion within the Study Team Preparations for the site study	
5	5 (Thu.)	Study of MCRC existing facilities Visit to Ministry of Human Resources (Department of Education)	
6	6 (Fri.)	Visit to IGNOU Visit to Ministry of Finance (Japan Section)	
7	7 (Sat.)	Market Research	
8	8 (Sun.)	Discussion within the Study Team	
9	9 (Mon.)	Visit to DDI and AIR Meeting at MCRC office	
10	10 (Tue.)	Meeting at MCRC office (Draft of Minutes)	
11	11 (Wed.)	Meeting at MCRC office Signing of the Minutes of Meeting	
12	12 (Thu.)	Report to Embassy of Japan and JICA office	
13	13 (Fri.)	Shift from New Delhi to Tokyo (AZ780)	Meeting at MCRC office
14	14 (Sat.)		Collection of Data
15	15 (Sun.)		Filing of Collected data
16	16 (Mon.)		Detail study of MCRC (Education, Mass Media National Plan, Manpower Transportation, etc.)
17	17 (Tue.)		ditto
18	18 (Wed.)		ditto
19	19 (Thu.)		ditto Report to Embassy of Japan and JICA office
20	20 (Fri.)		Shift from New Delhi to Tokyo (AZ780)

(2) Explanation and Discussion on the Draft Final Report

No.	Date	Abstruct
1	Oct. 21 (Sun.)	Shift from Tokyo to New Delhi (AZ787)
2	22 (Mon.)	Courtesy-call to Embassy of Japan and Ministry of Finance (Japan Section)
3	23 (Tue.)	Meeting at MCRC Office Visit to Ministry of Human Resource (Department of Education)
4	24 (Wed.)	Meeting at MCRC Office
5	25 (Thu.)	Courtesy-call to JICA Office Meeting at MCRC Office Visit to DDI
6	26 (Fri.)	Meeting at MCRC Office (Draft of Minutes of Meeting)
7	27 (Sat.)	Signing of the Minutes of Meeting Report to Embassy of Japan and JICA Office
8	28 (Sun.)	Filing of Collected Data
9	29 (Mon.)	Shift from New Delhi to Singapore (AI432)
10	30 (Tue.)	Shift from Singapore to Tokyo (JL712)

3. List of Interviewees

3. List of Interviewees

Ministry of Human Resources (Department of Education)

Mr. S. G. Mankad	Joint Secretary
Mr. Abhimanyu Singh	Director

Ministry of Finance (Japan Section)

Mr. D. Subbarao	Joint Secretary
Mr. A. P. Kulshreshth	Director

Jamia Millia Islamia (Central University)

Dr. S. Z. Qasim	Vice-Chancellor

Mass Communication Research Centre (MCRC)

Mr. A. J. Kidwai	Hony Director
Mr. Prem Chandra	Engineer-in-Charge
Mr. H. R. Kidwai	Prof. Distance Educaiton
Mr. M. B. Mughal	Administrative Officer
Mr. Aftab Yusuf	Maintenance Engineer
Mr. Rajeev Lochan	Lecturere in Graphics & Fine Arts

All India Radio (AIR)

Mr. Amrit Rao Shinde	Director General
Mr. N. J. Nair	Chief Engineer
Mr. M. P. Lele	Deputy Director General (Coordination)
Mr. C. R. Ramasiany	Deputy Director General (Inspection)

Mr. J. R. Mazakar	Deputy Director General (Programme Production & Development)
Ms. Noreen Nadvi	Deputy Director (Liaison)
Mr. V. P. Vachaspati	Sub-Engineer
Mr. K. C. Sharma	Assit. Station Director

Doordarshan (DDI)

Miss Jaichandiram	Director, CPC
Mr. S. S. Swani	Superintending Engineer
Mrs. Palsamni	Assistant Engineer

Embassy of Japan

Mr. Tatsuya TERANISHI	First Secretary
Mr. Takashi SAKURAI	First Secretary
Mr. Masamichi SAIGO	First Secretary

JICA New Delhi Office

Mr. Toshio HIDA	Resident Representative

4. Minutes of Discussions

MINUTES OF DISCUSSIONS ON THE PROJECT FOR PROVISION OF PROGRAMME PRODUCTION EQUIPMENT FOR MASS COMMUNICATION RESEARCH CENTRE IN THE JAMIA MILLIA ISLAMIA (CENTRAL UNIVERSITY) IN THE REPUBLIC OF INDIA

In response to the request of the Government of the Republic of India, the Government of Japan decided to conduct a Basic Design Study on the Project for Provision of Programme Production Equipment for Mass Communication Research Centre (MCRC) in the Jamia Millia Islamia (Central University) (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to India the study team headed by Mr. Kohsaku Tanaka, Technical Official, Engineering Division, Broadcasting Bureau, Ministry of Posts and Telecommunications, from July 1 to July 20, 1990.

The team had a series of discussions with the authorities of the Project headed by Dr. S.Z. Qasim, Vice-Chancellor of the University (shown in ANNEX I) and also with the concerned authorities of the Government of the Republic of India. The team also conducted a site study on the facilities of MCRC.

As a result of the study, both parties agreed to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the Project.

New Delhi, July 11, 1990

田中耕作

Mr. Kohsaku Tanaka
Leader of the
Basic Design Study Team
Japan International
Cooperation Agency

Dr. S.Z. Qasim
Vice-Chancellor
Jamia Millia Islamia
(Central University)

Mr. A.J. Kidwai
Hony Director
Mass Communication
Research Centre
Jamia Millia Islamia
(Central University)

1. The objective of the Project

The objective of the Project is to upgrade the programme production and training functions of the MCRC in order to reinforce its activities.

2. Major Items of Requested Equipment

1) Video Programme Production Equipment
2) Audio Programme Production/Dubbing Equipment
3) Post Production Equipment
4) Master Control Equipment
5) Editing Equipment
6) Outdoor Coverage Equipment
7) Still Photography Equipment
8) Presentation Facilities
9) Power Supply Equipment
10) Measuring Equipment

3. The Project site

The above mentioned equipment is to be installed/set in the new MCRC studio building which had been constructed by Indian side. (Shown in ANNEX II)

4. The Executing Agency

The Mass Communication Research Centre in the Jamia Millia Islamia (Central University) is responsible for the administration and execution of the Project.

5. The Japanese Team will convey to the Government of Japan the desire of the Government of India that the former takes necessary measures to cooperate by providing the above mentioned equipment within the scope of Japanese Economic Cooperation Programme in Grant Aid Form.

6. The Indian side has understood Japan's Grant Aid System explained by the Team which includes a principle of use of a Japanese Consultant Firm and a Japanese Contractor for the implementation of the Project.

7. The Government of India will take necessary measures listed in ANNEX III on condition that the Grant Aid would be extended to the Project.

ANNEX 1

ATTENDANCE LIST

* JAMIA MILLIA ISLAMIA (CENTRAL UNIVERSITY)

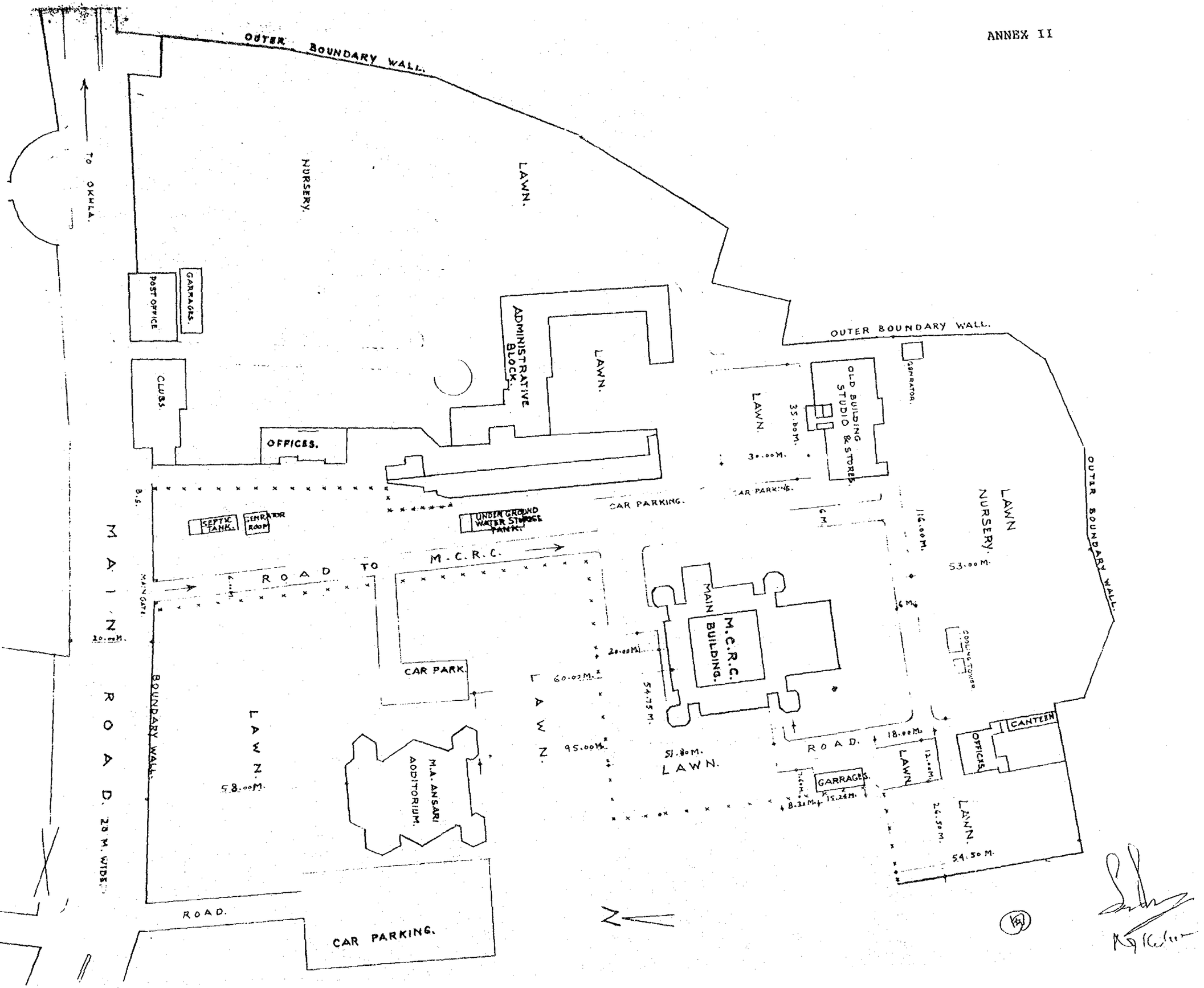
Dr. S.Z. Qasim	Vice-Chancellor

* MCRC

Dr. S.Z. Qasim	Chairman
Mr. A.J. Kidwai	Hony. Director
Mr. Prem Chandra	Engineer in charge
Mr. M.B. Mughal	Administrative Officer
Mr. H.R. Kidwai	Professor Distance Education
Mr. Aftab Yusuf	Maintenance Engineer

* JICA TEAM

Mr. Kohsaku Tanaka	Leader
Mr. Akimichi Nagasawa	Member
Mr. Toshimichi Aoki	- do -
Mr. Naohiko Shimada	- do -
Mr. Jira Ohno	- do -
Mr. Akira Nagase	- do -


OUTER BOUNDARY WALL.
TO OKHLA.
NURSERY.
LAWN.
POST OFFICE
GARRAGES.
CLUBS.
ADMINISTRATIVE BLOCK.
OFFICES.
LAWN.
OUTER BOUNDARY WALL.
OLD BUILDING STUDIO & STORES.
GENRATOR.
LAWN.
35.00M.
30.00M.
CAR PARKING.
CAR PARKING.
B.S.
SEPTIC TANK.
GENRATOR ROOM
UNDER GROUND WATER STORAGE TANK.
M.C.R.C.
ROAD TO
MAIN GATE
MAIN ROAD. 23 M. WIDE.
20.00M.
BOUNDARY WALL.
CAR PARK.
60.02M.
54.75 M.
20.00M.
MAIN BUILDING.
M.C.R.C.
LAWN.
58.00M.
M.A. ANSARI AUDITORIUM.
LAWN.
95.00M.
51.80M.
LAWN.
ROAD.
CAR PARKING.
ROAD.
18.00M.
GARRAGES.
8.32M.
15.24M.
LAWN.
12.00M.
OFFICES.
CANTEEN
LAWN.
26.50 M.
54.50 M.
116.00M.
6M.
53.00M.
COOLING TOWER.
LAWN
NURSERY.
OUTER BOUNDARY WALL.

Undertakings of Indian Side are:

1. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental facilities to the Project site.

    1) Electricity distributing line to the site.
    2) City water distribution main to the site.
    3) Drainage city main to the site with deep consideration of environmental pollution.
    4) Telephone trunk line to the main distribution panel of building.
    5) General furniture such as carpets, curtains, tables, chairs and others.
    6) Modification of building, if necessary.
    7) Suitable space for equipment.

2. To bear commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement (B/A).

3. To exempt taxes and to take necessary measures for custom clearance of the materials and equipment brought for the Project at the port of disembarkation.

4. To accord Japanese Nationals whose services may be required in connection with the Project under the verified contract such facilities as may be necessary for their entry into India and stay therein for the performance of their work.

5. To maintain and use properly and effectively those equipment purchased under the Grant.

6. To bear all the expenses other than those to be borne by the Grant, necessary for the transportation and the installation of the equipment.

MINUTES OF MEETING
ON
THE DRAFT FINAL REPORT ON THE BASIC DESIGN STUDY
ON
THE PROJECT FOR PROVISION OF PROGRAMME PRODUCTION EQUIPMENT
FOR
MASS COMMUNICATION RESEARCH CENTER
IN
JAMIA MILLIA ISLAMIA (CENTRAL UNIVERSITY)
IN
INDIA

In response to the request of the Government of India on the Project for Provision of Programme Production Equipment for Mass Communication Research Centre in Jamia Millia Islamia (Central University) in India (hereinafter reffered to as the "Project"), the Government of Japan decided to conduct a basic design study on the Project and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to India the study team headed by Mr. Kohsaku TANAKA, Technical Official, Engineering Division, Broadcasting Bureau, Ministry of Posts and Telecommunications, from July 1 to July 20, 1990.

As a result of the study, JICA prepared a draft final report and dispatched a team headed by Mr. Kohsaku TANAKA, Technical Official, Engineering Division, Broadcasting Bureau, Ministry of Posts and Telecommunications, to explain and discuss it from October 21 to October 29, 1990.

Both parties had a series of discussions on the report and agreed to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the Project.

The Team express its sincere thanks for the undertakings given to the Team by Indian side during the study period, and Indian side express its sincere thanks for technical cooperation made by JICA to execute the Basic Design Study.

October 27th, 1990
NEW DELHI,

田中耕作

Mr. Kohsaku TANAKA
Leader,
Draft Final Report
Explanation Team,
JICA

Dr. S.Z. Qasim
Vice-Chancellor
Jamia Millia Islamia
(Central University)

Mr. A.J. Kidwai
Hony. Director
Mass Communication
Research Center
Jamia Millia Islamia
(Central University)

ATTACHMENT

1. As a result of a series of discussion, the Draft Final Report was accepted in principle and agreed upon by both parties to prepare the Final Report in line with the basic concept mutually agreed on, a careful check of the contents of the Draft Final Report in accordance with the result of the supplementary study carried out on this occasion.

2. The Indian side has understood Japan's Grant Aid System and confirmed that the necessary measures will be taken by the Indian side as shown in Annex III of the Minutes of Discussions on the Project signed on July 11, 1990 on condition that the Grant Aid by the Government of Japan be extended to the Project.

3. The Final Report on the Project will be submitted to the Indian side by the middle of January, 1991.

ATTENDANCE LIST

JAMIA MILLIA ISLAMIA (CENTRAL UNIVERSITY)

Dr. S. Z. Qasim	Vice-Chancellor

MCRC

Dr. S. Z. Qasim	Chairman
Mr. A. J. Kidwai	Hony. Director
Mr. Prem Chandra	Engineer in charge
Mr. M. B. Mughal	Administrative Officer
Mr. H. R. Kidwai	Professor Distance Education
Mr. Aftab Yusuf	Maintenance Engineer

JICA TEAM

Mr. Kohsaku Tanaka	Leader
Mr. Naohiko Shimada	Member
Mr. Jiro Ohno	Member

5. List of Materials Collected

5. List of Materials Collected

1. Statistical Outline of India (1989-90)

   TATA SERVICES LIMITED (Dept. of Economics & Statistics)
2. Pocket Book of Labour Statistics 1989
3. National Account Statistics
4. Statistical Abstract India 1987
5. Eighth Plan Perspective
6. Information India 1989
7. India Economic Information Year Book 1989-90
8. Education & Manpower Planning
9. Adult Education
10. Educational Technology
11. Management of Higher Education in India
12. Educational Administration, Supervision and School Management
13. Universities Handbook
14. Labour Bureau's Labour
15. Mass Communication Research Centre Catalogue (84~88)
16. Mass Communication Research Centre Prospectus (1990~91)
17. A Brief Review of Jamia Millia Islamia Univ.
18. Stricking a Golden Chord by AIR
19. India Calling (1990) by AIR
20. IGNOU (Opening New Horizons in Education)
21. IGNOU (Backelor's Degree Programme)
22. IGNOU
23. IGNOU (School of Management Studies)
24. IGNOU (Diploma Programme in Rural Development)
25. IGNOU (Quest for Learning Knows No Bounds)

26. Country Wide Class Room Educational Video Programme

27. UGC (ACWCR, a window in the world)

28. UGC (CWCR, Video Festival)

29. MCRC List of Produced Programmes

30. Script for MCRC Programme (Sample)

6. Data Concerning India

(1) Country Data

(2) Circulation Number of Newspapers and Languages Used

(3) Number of Power Failures at the MCRC

(4) List of Produced Programmes by MCRC

6. Data concerning India

(1) Country Data

• Date of Independence	August 15, 1947
• Area	3,287,263 square kilometres (about nine times the size of Japan)
• Population	810,000,000 (estimated in 1988)
• Principal languages	Besides Hindi (official federal language), 14 languages are permitted by the Constitution to be used in different states.
• Principal religions	Hindu (82.6%), Islam (11.4%), Christianity (2.4%) and Sikh (2.0%).
• Form of government	*Republicanism (federalism)*
• Parliament	Bicameral federal parliament (244 seats in the Upper House and 544 seats in the Lower House)
• Principal parties	Congress Party, Communist Party, Janata Party, etc.
• Head of State	President Ramaswarmy Venkataraman
• GNP	271,440,000,000 U.S. dollars (1988)
• GNP per head	330 U.S. dollars (1988)
• Main industries	Agriculture (wheat, rice, sugar, cotton, tea)
• Exports (1986)	8,956,000,000 U.S. dollars [Main export items] Textile goods, jewelry, precious stones, tea. [Mainly to] U.S.A., U.S.S.R., Japan, U.K.
• Imports (1986)	16,066,000,000 U.S. dollars [Main import items] Petroleum products, capital goods, fertilizers, iron and steel. [Mainly from] U.S.A., Japan, U.S.S.R., West Germany.

(2) Circulation Number of Newspapers and Languages Used

(Unit: Thousand)

Year	Dailies	Weeklies	Bi-Weeklies	Monthlies	Annuals	Others	Total
1981	10,672	10,148	3,019	11,404	360	1,834	37,407
1982	11,242	11,413	3,465	12,456	380	1,892	40,150
1983	13,033	12,924	4,499	13,428	418	2,147	46,449
1984	14,531	14,303	4,989	14,792	357	1,949	50,921
1985	15,255	15,320	4,627	14,061	245	1,594	51,102
1986	14,847	14,387	4,712	13,960	407	1,781	50,094
1987	16,731	15,372	4,955	15,807	399	2,127	55,391
1988	18,727	18,078	5,645	16,083	424	2,190	61,147
Number of Newspapers by Language							
Hindi	5,424	5,407	1,850	4,498	2	227	17,408
English	3,582	1,883	1,271	3,886	141	1,101	11,864
Assamese	123	94	40	63	–	15	335
Bengali	1,197	968	555	698	2	233	3,653
Gujarati	1,226	893	211	567	38	87	3,022
Kannada	627	785	71	619	37	16	2,155
Kashmiri	–	–	–	–	–	–	–
Malayalam	1,586	2,703	494	1,154	–	28	5,965
Marathi	1,417	418	55	636	201	42	2,769
Oriya	342	39	20	315	2	53	771
Punjabi	387	569	55	439	–	7	1,457
Sanskrit	2	5	–	1	–	1	9
Sindhi	35	42	4	15	–	1	97
Tamil	1,126	1,861	498	1,263	–	25	4,773
Telugu	485	1,004	284	692	–	29	2,494
Urdu	1,057	930	139	391	1	61	2,579
Others	111	477	98	846	–	264	1,796

(3) Number of Power Failures at the MCRC

		Number of Power Failures		Total Duraiton	
1988	April	15		28 hours	35 minutes
	May	14		23	25
	June	23		42	25
	July	10		18	55
	August	17		26	15
	September	6		12	15
	October	1		2	15
	November	2		4	45
	December	3		6	05
1989	January	9		28	10
	February	9		23	00
	March	10		21	45
		119	Average 2 hours	237 hours	45 minutes
1989	April	6		9 hours	25 minutes
	May	8		14	05
	June	7		6	35
	July	10		22	15
	August	14		40	20
	September	7		15	30
	October	3		10	00
	November	9		13	40
	December	10		19	25
1990	January	8		26	00
	February	4		11	30
	March	8		17	05
		94	Average 2 hours 11 minutes	205 hours	50 minutes
1990	April	8		18 hours	35 minutes
	May	17		72	00
	June	5		21	20
		30	Average 3 hours 43 minutes	111 hours	55 minutes

Agriculture

Pomology — The Science of Fruits

14:00 min.

JMI 6591
1988

Introduces briefly the science of Pomology and discusses research on mango and papaya.

Agriculture and Biotechnology — Part I

21:22 min.

JMI 6568
1988

This programme is about techniques of crop improvement through genetic alteration and photoplast fusion technology.

Agriculture and Biotechnology — Part II

12:17 min.

JMI 6568
1988

This programme is about cybrid which is a hybrid of cytoplasm and is known to provide characteristics like sterility, resistance, salt tolerance and the ability to fight pests.

The Father of Green Revolution

25:18 min.

JMI 6162
1986

Noble Laureate, Dr. Norman Borlaug, talks about his researches in developing new types of wheat which have transformed the cropping system in India and several parts of the world.

Dewatering by Well Point System

14:10 min.

JMI 6127
1984

Removal of subsoil water is carried out to lower the water table. The programme deals with a technique of lowering the water table by Well Point System.

Wasteland Development/Usar Land Development

28:22 min.

JMI 3291
1987

A science programme on research and development of wasteland. The film was shot around Lucknow and Aligarh in Uttar Pradesh.

Betelvine Cultivation — Part I

17:00 min.

JMI 3248
1987

Various experiments are being carried out on Pan leaf by the National Botanical Research Institute in Lucknow. These experiments are conducted in order to increase

pan cultivation which has greatly declined due to diseases and lack of proper nourishment.

Betelvine Cultivation — Part II

15:00 min. JMI 3273
1987

Pan is the agricultural crop of Mahoba and the major source of livelihood of its people. Keeping this in mind, the N.B.R.I. Lucknow have set up a project to improve pan cultivation.

Anthropology

Stone Age Tools

20:30 min. JMI 3011
1986

Earliest tools used by man were made of stone. Tools for making holes in animal skins and their later improvement into blades are two of the several examples cited in the programme.

Art

Creative Process

15:00 min. JMI MCRCOZ
1984

The film traces the process that goes into any creative effort based on works of the eminent Indian painter, A. Ramachandran, the film moves from social reality to individual motifs and then to canvass.

Two Contemporary Artists

10:00 min. JMI 6396
1986

Paramjit Singh and Arpita Singh talk about their paintings and about their styles; about their lives and how their art has evolved over the years.

Graphic Perspective

07:30 min. JMI 3046
1985

This programme is an attempt to teach perspective drawing — representing three dimensional reality in the two dimensions of a painter's canvas.

Satish Gujral

17:37 min. JMI 3390
1988

The film deals with the life and work of Satish Gujral.

Astronomy

Comets

19:09 min.

TVP 60/11
1985

Dr. Richard W. West discoverer of Comet West explains how astronomers in modern times watch comets and what we can learn from them. In the course of his lecture he also talks about the history of the discovery of comets.

Measuring the size of Stars

32:08 min.

TVP 60/12
1985

Prof. Robert Brown, President, International Astronomical Union discusses problems in astronomy which have interested people for hundreds of years ever since they looked at the sky.

Biology

Butterfly Migration

18:05 min.

JMI 3060
1984

It is difficult to imagine that butterflies could travel vast distances in enormous numbers. The programmes take a look at the most celebrated migrant butterfly, the American Monarch called Damaus plexipus. It also discusses the Indian butterfly migration.

The Father of Green Revolution

25:18 min.

JMI 6162
1986

Nobal Laureate, Dr. Norman Borlaug, talks about his researches in developing new types of wheat which have transformed the cropping system in India and several parts of the world.

Proteins — Their Chemical Nature and Structure

13:16 min.

JMI 3094
1985

Proteins serve a myraid of functions vital to life. This programme explains these functions and also the composition of proteins and their chemical structure.

Life its Unity and its Diversity

20:00 min. JMI 3075
1985

Life is manifest in diverse forms but there is a unity in this diversity. The works of Darwin, Mendel, Watson and Crick are explained in the programme so that the student can appreciate the basic elements of life sciences.

Seeds — Part I

12:03 min. JMI 2199
1985

Seeds are in a state of suspended animation. Are they living or dead ? What is a seed ?How it is formed ? These are the questions to which answers are attempted in this programme.

Seeds — Part II

09:30 min: JMI 2037
1986

Some seeds can remain in suspended animation for millions of years. Various experiments devised to determine the longevity of seeds are explained.

Seeds — Part III — The Building Blocks

13:00 min. JMI 6403
1987

This episode in the series of programmes on "Seeds" talks about the causes of dormancy and quientescence in seeds.

Hair : Cables of Information

12:00 min. JMI 3229
1986

Hair can be used to determine nutritional status, disease symptoms and also environmental contamination. In the studies of trace elements hair is an important tool for investigation.

Test Tube Plants

19:50 min. JMI 3055
1984

Plants are totipotent — i.e. any cell of the plant can be made to become a plant by using chemical methods of plant tissue culture — a method which is useful in hybridising plants from two different species.

Taste and Smell Perception of Insects

18:38 min. JMI 3015
1984

This programme deals with the aspects of physiology of taste and smell in insects and also the explanation of conduction of nerve impulse.

Medicinal Plants

24:30 min.

JMI 3053
1986

More than a dozen of medicinal plants of the Indian peninsula are biologically screened. Their important derivatives alongwith their application are discussed.

The Future Tense : Derelict Ecosystem

20:40 min.

JMI 3053
1986

A laboratory technique to introduce and grow vegetation on the barren lands in the Himalayan region.

Isolation of Lymphocytes

13:00 min.

JMI 3330
1987

A lesson on Bleeding, Defibrination and the technique of isolation of a particular kind of white cells called Lymphocytes.

The New Biology Exhibition

20:00 min.

JMI 6453
1987

At the New Biology Exhibition held in Delhi in early 1987, Prof. Mohan Ram explains the Cell structure. He also talks about D.N.A., R.N.A. and tissue culture.

Muscles : How do they function

15:00 min.

JMI 3089
1987

This programme has two objectives : location of the major muscles along with general introductory details and the microscopic structure of a muscle fibre.

Discovering Snakes

20:40 min.

JMI 3279
1986

Most people have an obsessive fear or a fascination for snakes. Discovering Snakes is a film which seeks to have a better understanding of snakes.

The Nitrogen Cycle

13:00 min.

JMI 3219
1986

The Nitrogen Cycle comprises of four major processes : (i) Ammonification, (ii) Nitrification, (iii) Denitrification, (iv) Fixation. These processes have been discussed in some detail in this programme.

Birds Of The Night Part-I

15:00 min. JMI 3003
1987

Bats, unfortunately are one group of very misunderstood animals. However, contrary to the popular belief, bats are harmless and in many cases beneficial.

Birds Of the Night Part-II

15:00 min. JMI 3388
1987

The second part of the programme on bats deals with research on the behaviour and biology of bats.

Introducing Immunology — Part I

13:40 min. JMI 3263
1987

This programme defines what is Immunity and how it develops. Also talks about the nature of antibody molecules and the recognition of antigens by antibodies.

Introducing Immunology — Part II

12:00 min. JMI 3385
1988

This programme explains clonal selectional a theory and activation of T and B cells.

Induced Breeding in Frogs

10:37 min. JMI 3295
1987

This programme describes various experiments related to artificial reproduction in forgs.

Classification of Plants (Taxonomy)

13:30 min. JMI 3228
1986

An instructional programme about the principles of taxanomy.

Plants in our neighbourhood — Part I

13:49 min. JMI 3044
1988

We know very little about the plants that we see around us. This series deals with such plants their medicinal, commercial and other uses. Part I deals with following plants :
Nyctanthes arbor-tristis
Bauhinia purpurea
Alstonia scholaris
Lantana camara

Plants in our neighbourhood — Part II

14:14 min.

JMI 3401
1988

Part II deals with the following plants :
Erratamia coronaria
Ficus bengalensis
Ficus relligiosa
Ficus racemosa
Thespesia populnea
Euphorbia pulcherrima
Pongamia pinnata

Plants in our neighbourhood — Part III

15:25 min.

JMI 6585
1988

Part III deals with the following plants :
Jacaranda mimosifolia
Cassia fistula
Laegostroemia speciosa
Laegestroemia indica
Nerium indicum
Nerium oleander
Thevetia peruviana
Albizzia lebbeck

Plants in our neighbourhood — Part IV

15:15 min.

JMI 6591
1988

Part IV deals with the following plants :
Calotropis procera
Plumeria acutifolia
Plumeria rubra
Plumeria alba
Jasminum sambal
Delonix regia
Quisqualis indica
Gardenia jasminoides

Plants in our neighbourhood — Part V

12:45 min.

JMI 6582
1988

Part V deals with the following plants :
Dicrostachys cineria
Punica granatum
Caesalpinia pulcherrima
Terminalia arjuna

Carreers and Professions

For the Love of Animals

18:34 min. JMI 6583
1988

A motivational programme on veterinary science as a profession.

Takeoff

14:07 min. JMI 3420
1988

A programme about a day in the life of fighter pilot

Chemistry

Simple Experiments with Carbon Electrodes and Fused Bulbs

20:00 min. JMI 3070
1984

Fused electric bulbs and carbon electrodes from used dry cells can be used to do simple experiments at home. The entire process of making an effective electrode after it is pulled out of a dry cell is shown.

Plastics

20:00 min. JMI 3017
1985

Plastics have interesting Chemistry and many applications in industry as well as the home.

Proteins — Their chemical nature and structure

13:16 min. JMI 3094
1985

Proteins serve a myraid of functions vital to life. This programme explains these functions and also the composition of proteins and their chemical structure.

The story of copper
22:20 min.

JMI 3045
1986

This programme is about the different ways of mining copper, purification of the ore and the importance of copper in our daily life.

Self organisation in Chemical Systems
10:18 min.

JMI A 10
1984

This programme introduces the student to self organisation phenomena in chemical systems using Shabotinski reaction. The principle underlying self organisation of chemical systems can be applied to biological and social systems.

Shapes of Molecules
19:30 min.

JMI 3068
1984

A programme on molecular structure. How the structure and shape of molecules of certain compounds can be predicted.

Cinema

Reflection on Eisenstein
14:28 min.

JMI 6585
1988

A discussion on the multifaceted personality and films of Sergei Eisenstein

Communication

A Prophet of the Space Age — Part I
20:02 min.

JMI 3089
1987

Prof. Arthur C. Clarke a well known science writer has a free-wheeling discussion with Prof. Yashpal about his writings, films, experiences, inclinations and shares his perspective on the development of technology and the global situation.

A Prophet of the Space Age — Part II
21:00 min.

JMI 3271
1987

In this part of the programme, Prof. Arthur C. Clarke describes his pioneering work on the future of world communications. He also talks about the 'space elevator' — a concept he has already introduced in his science fiction stories.

People's Science
24:40 min. JMI 3230
1986

Scientists, doctors, engineers, university and college teachers get together for a 'People's Science Workshop held at Jamia Millia Islamia, New Delhi in May 1985. Problems like pollution, deforestation, Bhopal Gas tragedy and many others are discussed.

Computers

Microprocessors
17:30 min. JMI 3074
1985

Today's computers are a far cry from the machines of the early 50's. Development in microelectronics have led to the introduction of machines known as microcomputers.

Craft

"Gods of Clay" Pottery-Part I
18:00 min. JMI 3316
1987

The life of a traditional potter is quite miserable but this does not affect the enthusiasm for his work.

"Gods of Clay" Pottery-Part II
20:00 min. JMI 3335
1987

Continuation of pottery—Part I, this programme is about modern trends in pottery, studio pottery in particular.

Time Present, Time Past
10:00 min. JMI 6444
1986

A brief insight into objects of daily use in the past which were long lasting, beautiful and functional. These have now been replaced by mass produced plastic objects.

Preserving a Priceless Legacy
10:00 min. JMI 6412
1986

Mr. S.S. Hitkari, a collector of art, describes how he began collecting, the relevance of art exhibitions, the value of folk art and the relevance of handicrafts.

Dance

Abhinaya

12:50 min.

JMI 6592
1988

This programme is about the use of Abhinaya in Indian Dance, using the five classical styles of Bharatnatyam, Kathak, Kathakali, Odissi and Manipuri as illustrations.

East Meets West

10:00 min.

JMI 6412
1986

Veronque Azan, a young French disciple of Shri Birju Maharaj talks to Vibha Sharma about her involvement with Kathak dance. Ms. Azan then provides a rendition of Gathbhava with a preceding explanation.

Economics

What is Gatt?

18:00 min.

JMI 3274
1986

A programme on GATT—General Agreement of Trade and Tariff in a dicussion format.

Understanding Money—Part I: Doing Without Money-Barter System

15:00 min.

JMI 3371
1987

The programme traces the origin of money. Characteristic features of the barter system are highlighted and examples of the system prevailing today are given.

Understanding Money—Part II The Invention of Money

24:00 min.

JMI 6565
1988

After discussing the limitations of commodities as money, this programme deals with metal money; its merits and limitations and the process involved in its manufacture.

Education

Yesterday, Today and Tomorrow
(In Collaboration with Roorkee University)

20:32 min.

JMI 3068
1985

This programme traces the history and working of one of the oldest technological universities in India which started as the first engineering college in the whole of the British empire—The Roorkee University.

Engineering Taught From a Distance

29:33 min.

JMI 6586
1986

Dr. Harvey R. Stone from University of Massachusetts talks about continuing and distance education in engineering in order to update knowledge which becomes obsolete rather quickly, especially in the field of technology.

Madhuri Shah in Conversation with Mrs. Mulay

40:00 min.

UGC—171
1986

Dr. Madhuri Shah, Chairman, University Grants Commission talks about the role of mass media in higher education. She also replies to the queries raised by the viewers of the Countrywide Classroom.

Prof. K. Gopalakrishnan in Conversation with Mrs. Vijaya Mulay

18:00 min.

TVP—60/76
1986

Reviews the performance of Higher Education Countrywide Classroom television programmes.

UGC Insat Television Programme

24:32 min.

JMI 6367
1986

Mr. A.J. Kidwai, Chairman, Mass Communication Research Centre talks with Prof. Yashpal on the growth and developments of the higher education INSAT—1B television programme.

What's wrong with me

19:00 min.

JMI 3328
1987

This is a film on various stages of development in children, tests for the various stages and how they can be used to detect minor disabilities.

The Fight Against Illiteracy
18:00 min.

JMI 3303
1987

Adult Education is not a new concept. How 'Ankur' a women's organization is working for the social upliftment of women through the medium of Adult Education.

Education Through Television
19:00 min.

JMI 3337
1988

The 'television teacher' is a special element in the production of educational television. What are his responsibilities? What are the hazards of instructional TV?

Educational Technology
22:00 min.

JMI 3031
1987

Dr. Jenny Johnson of the University of Maryland talks about Educational Communication, Instruction Designing and the importance of Instruction Designing in traditional classroom lectures and distance education.

A Classroom From the Skies
21:04 min.

JMI 3377
1988

A programme based on the clippings of programmes from different media centres produced for the fourth anniversary of countrywide classroom.

Of Men and Machines
19.05 min.

JMI 6580
1988

A programme on the education and training of car mechanics.

Engineering

Engineering Taught From A Distance
29:33 min.

JMI 6568
1986

Dr. Harvey R. Stone from University of Massachusetts talks about the coninuing and distance education in engineering in order to update knowledge which becomes obsolete rather quickly, especially in the field of technology.

Atterberg's Limits
24:24 min.

JMI 3028
1984

Demonstrates the idea of the range of water content held by different fine grain soils.

Dewatering by Well Point System

14:10 min. JMI 6127
1984

Removal of subsoil water is carried out to lower the water table. The programme deals with a technique of lowering the water table by Well Point System.

Floods and Their Computations

21:50 min. JMI 3083
1986

Apart from tracing the causes of floods in India this lecture also describes the computation related to floods through approaches like emperical relations, Rational formula and Unit Hydrograph theory.

Low Cost, Fire Proof, Cyclone Proof Housing

23:53 min. JMI 3054
1985

Central Building Research Institute has developed techniques for low cost housing, such as for the making of building blocks, for constructing fire-proof thatched houses and for houses that can withstand cyclones in the coastal regions of India.

Environment

Our Fragile Atmosphere

13:32 min. JMI 6046
1985

Survival on this planet requires planning and this programme seeks to project the conflict between environmental protection and economic change—a dilemma in modern times.

A Return to Nature

19:14 min. JMI 3249
1986

The present energy crisis has led to ways of conserving energy by using alternate sources such as biogas, solar energy, wind and water powered engines.

Wasteland Development/ Usar Land Development

28:22 min. JMI 3291
1987

A science programme on research and development of wasteland. The film was shot around Lucknow and Aligarh in Uttar Pradesh.

The Future Tense: Derelict Ecosystem

20:40 min.

JMI 3053
1986

A laboratory technique to introduce and grow vegetation on the barren lands in the Himalayan region.

Energy in Nature's Web

09:30 min.

JMI 3315
1987

The programme tries to explain the energy cycle in nature, starting from its source- the sun.

The Ozone Story

13:32 min.

JMI 6046
1985

Modern industrial activity has led to depletion in the ozone layer. But first, what is ozone and how it is formed? What are the properties of ozone and how it is monitored with the help of balloons?

Voyage of Discovery

20:00 min.

JMI 3088
1987

The film deals with the scientific work going on in Antarctica and Antarctica's role both scientific and political in the near future.

A Walk Through the Ridge

20:00 min.

JMI 3342
1987

A nature walk with middle and senior school children of Sardar Patel Vidyalaya on the Delhi Ridge. Their instructor gives them an insight into the ecology, flora and fauna of the area.

Protecting the Eco-System

20:00 min.

JMI 3399
1987

A film on environmental groups of young people in Delhi and the issues they have taken up with respect to preservation of natural forest belts, pollution etc.

A Time to Heal

20:00 min.

JMI 6394
1986

The programme deals with the relationship of river Yamuna with the city of Delhi. Increasing population and corresponding increase in industrial activity has upset the ecological balance and resulted in severe pollution of the river.

General Awareness

Understanding System
18:10 min. JMI 2093
1984

Why is it that the word 'System' can be used in so many different ways? Probably there is a core meaning of the word which applies to a number of processes. But what is a system any way?

Our Voices
08:11 min. JMI 2327
1986

This programme enables the student to recognize the various characteristics of human voice. It introduces, in a humourous way, some of the terms and concepts which may be used in the analysis of human speech.

"Mail" — Part I
14:04 min. JMI 3471
1988

"Mail" Part II
14:10 min. JMI 3418
1988

A general awareness documentary on the operations of the Postal system.

Geography

Concept of India in World Maps—Part-I
30:40 min. JMI 6092
1985

Concept of India in World Maps—Part II
30:40 min. JMI 6092
1985

When the first maps of India were drawn, they were quite unlike the present one which is a product of cartographic evolution over a period of time. The programme traces the history of map making with reference to India.

Peasant Life in India
20:22 min. JMI 3016
1984

The culture, social set up and life styles of peasants from Kashmir to Kanyakumari and Rajasthan to Arunachal Pradesh are different. Regional pattern of the village, costumes and headgear, agricultural practices and modes of transport constitute the unbelievable diversity of India.

Natural Landscape
28:30 min.

JMI 3099
1984

From snow capped Himalayan peaks to the blue waters of Indian ocean; from the dense monsoon forests in the east to the salt marshes in the west, this programme depicts the diversity of India.

Loom of Languages
21:08 min.

JMI 3077
1984

This programme is part of a series which traces the unity and diversity as a characteristic feature in India. The different languages of India have certain unifying characteristics which have been highlighted in the programme.

Geology

Earthquakes
20:00 min.

JMI 3067
1984

Besides tracing the history of earthquakes, the programme also dwells on the science of sudden transient motion spreading into all possible directions causing earthquakes.

Wandering Continents
16:00 min.

JMI 3012
1985

The continents on the map have not always looked as we know them today. The shapes continents have now is a result of gradual shifting of the continents from Pange, to the sea of Tethys and Gondwanaland.

Geological Research In the Himalayas
27:00 min.

JMI 60/100
1987

The programme aims at describing scientific research on the relatively unknown areas in different parts of the world; such as compilation of geological maps of the Himalayas.

History

Concept of India in World Maps — Part I

30:40 min. JMI 6092
1985

Concept of India in World Maps — Part II

30:40 min. JMI 6092
1985

When the first maps of India were drawn, they were quite unlike the present one which is a product of cartographic evolution over a period of time. The programme traces the history of map making with reference to India.

Glimpses of Freedom Movement

24:15 min. JMI 3057
1985

A film on the liberal Muslim leaders of 1920's and 30's in Delhi and their participation in the freedom struggle of India.

A Journey Through Shahjehanabad—The Red Fort

20:00 min. JMI 3264
1986

Akhilesh Mittal takes a walk in the Red Fort and talks about the historical and architectural significance of this citadel of Shahjahanabad.

Quit India Movement—Part I

18:30 min. JMI J14
1986

After 1857 the Quit India Movement of 1942 was the most powerful manifestation of struggle for independence. Prof. Bipin Chandra of Jawaharlal Nehru University talks about the events leading to the Quit India Movement.

Quit India Movement—Part II

18:30 min. JMI J14
1986

On 8th August 1942 the All India Congress Committee passed a resolution that the British should quit India. This was the beginning of the Quit India Movement. Prof. Bipin Chandra examines the historical events.

Purana Quila—A Historical Legend

10:30 min. JMI 3384
1987

This film deals with Purana Quila as a historical monument and talks about the architecture of the various buildings in it. It further goes on to discuss the excavations conducted here during 1969 and 1972.

Medicinal Plants

24:30 min.

JMI 3053
1986

More than a dozen of medicinal plants of the Indian peninsula are biologically screened. Their important derivatives along with their applications are discussed.

A Vision of Tomorrow

12:00 min.

JMI 3351
1987

Seventy per cent of the nearly one crore blind persons in India can be cured by simple operations. Twentyfive lakh persons suffering from corneal opacity can see again if people were to donate their eyes after death.

Just 45 Minutes

20:00 min.

JMI 3347
1987

The Indian Cancer Society has set up free detection clinics where Cancer detection is carried out in just fourty-five minutes.

The Brain

20:18 min.

JMI 3317
1987

What are the parts of human brain and how they function in normal persons. Recent developments in medical sciences make it possible to investigate functional defects of the Central Nervous System.

The Shahjahanpur Story

14:00 min.

JMI 3334
1987

Malaria Research Centre in Shahjahanpur has made remarkable progress in the control of Malaria in the villages of Shahjahanpur district using bio-control techniques.

Schizophrenia

20:45 min.

JMI 3038
1987

Schizophrenia is a disease like any other physical ailment. It can be cured if treated in time. Its causes and treatments are discussed in this film.

Bad Throat and Your Kid's Heart

30:00 min.

JMI 3311
1987

This programme examines in detail the causes leading to Rheumatic Fever and Rheumatic Heart Diseases (RHD). Aimed towards school teachers and parents it also talks about the research on Rheumatic Fever and RHD.

Leprosy: Journey From Despair to Hope

29:50 min. JMI 3283
1987

The programme dwells on the present status of research in India on the disease of Leprosy and the contribution of scientists of the Indian Council of Medical Research towards reducing the incidence of the disease.

Blood is for Circulation

10:53 min. JMI 6394
1986

A programme on blood donation. It tries to dispel common fears and prejudices associated with blood donation.

Shertally Legs

20:00 min. JMI 3312
1987

A programme on the eradication of the disease Filariasis in Shertalley Taluk of Pondicherry and the measures taken by the Vector Control Research Centre, Pondicherry, India.

Hair: Cables of Information

12:00 min. JMI 3229
1986

Hair can be used to determine nutritional status, disease symptoms and also environmental contamination. In the studies of trace elements hair is an important tool for investigation.

Yoga

10:00 min. JMI 6396
1986

Yoga can cure many problems related to the spine.

For the Love of Animals

18:34 min. JMI 6583
1988

A motivational programme on veterinary science, as a profession.

Meteorology

The Physics of Clouds-Part I

16:30 min. JMI 3022
1985

This programme describes two stages in the life of a rain cloud. First, lifting of moisture from ground and its condensation into fog and then the processes of growth of these tiny droplets into raindrops.

The Physics of Clouds—Part II
17:20 min.

JMI 3205
1985

In the second part we see how the small drops in the early stages of the formation of cloud grow into raindrops.

Music

Music Beyond the Frontier
16:42 min.

JMI 6158
1985

The life of musicians living in the jhuggis of Delhi where their off-springs also learn the tradition from their parents.

Music of North India: Bhimsen Joshi
28:43 min.

JMI 3061
1985

A song is a form of worship, not because of its words which may be like a hymn, but in the act of creating sound—the music itself. In India making music is regarded as an act of worship. This film is one of a series.

Music of North India: Amjad Ali Khan
29:08 min.

JMI 6090
1985

Music of North India: Vijay Raghav Rao
28:43 min.

JMI 3061
1985

Music of North India: Pandit Jasraj
28:53 min.

JMI 3078
1985

All these films depict the life and times of Maestros of Traditional North Indian Music.

The Art of the Composer
18:00 min.

JMI 3254
1986

This film documents the creation of music — from its very conception by the composer to its final orchestration. The film revolves around the work of veteren composer Anil Biswas.

Language of Music
28:45 min. JMI 3009
1986

Music can be read. The International system of musical notations has been developed for the purpose of writing music. The language of music is quite simple because it is based on logical principles.

Graphic Perspective
07:30 min. JMI 3046
1985

This programme is an attempt to teach perspective drawing—representing three dimensional reality in the two dimensions of a painter's canvas.

Classics in Tune
9:45 min. JMI 6412
1986

An introduction to the basic elements of Hindustani and Karnatak style of Indian music.

Oceonography

Voyage of Discovery
20:00 min. JMI 3088
1987

The film deals with the scientific work going on in Antarctica and Antarctica's role—both scientific and political in the near future.

Ornithology

Dr. Salim Ali—A Profile—Part I

20:30 min.

JMI 3277
1987

First Part of an interview with the renowned ornithologist Dr. Salim Ali about his life and works.

Dr. Salim Ali—A Profile—Part II

16:00 min.

JMI 3276
1987

In the second part Dr. Salim Ali expresses his views on the conservation of wild life.

Palaeontology

Fossils—Stories in Stone

22:15 min.

JMI 3272
1986

Fossils are bridges which link the past of our planet to its present. This programme explains what are fossils, how they are formed and what are their many uses.

Photography

Images

10:00 min.

JMI 6444
1987

After making the viewer familiar with a dark room the programme introduces him to the basics of black and white photographic printing.

Physics

How To Make a pH Meter

19:14 min. JMI 3108
1985

An instructional programme about assembling low cost pH-Meter, useful in undergraduate experiments in Chemistry and Biology. The design uses electronic components easily available in the market.

Thermal Physics

20:04 min. JMI 3051
1984

Set up in a demonstration format the film examines the physics of hot bodies. Measurement of temperature actually involves the measurement of flow of heat from one body to another.

Semi-Conductors At Our Service—Part-I

21:00 min. JMI 6171
1985

Electrical properties of good conductors, insulators and semi-conductors such as resistivity, charge carrying capacity and electron band energy are some of the properties which distinguish one class of conductor from another.

Semi-Conductors At Our Service—Part-II

23:13 min. JMI 3016
1985

There are two kind of semi-conductors, intrinsic and extrinsic. A change of conducting properties takes place when impurities are added to semi-conductors.

Semi-Conductors At Our Service—Part-III

24:34 min. JMI 3093
1985

Metallic oxides of a number of elements which exhibit semi-conductor properties are often used to make useful electronic devices such as a thermistor.

Semi-Conductors At Our Service—Part-IV

20:00 min. JMI 6013
1985

The principle of unidirectional flow which is the basis of valves, pumps and Junction diode is explained. A Junction diode allows current to flow in one direction only and offers extreme resistance in the opposite direction.

Semi-Conductors At Our Service—Part-V
21:00 min.

JMI 6013
1985

The last of the series of lecture-demonstrations on semi-conductors deals with the physics and function of a particular type of electronic device called Bipolar Junction Transistor.

How To Make Simple Scientific Instruments
29:48 min.

JMI 3060
1984

The use of low cost equipment not only makes the students aware of the principles underlying these equipment, it also exposes them to the method of scientific observation and inferrence.

What Is An Orbit
20:00 min.

JMI 3062
1984

Based on the laws of motion, the concept of orbits is explained in this lecture which also briefly discusses relative motion and the state of weightlessness.

What Is An Operational Amplifier
19:30 min.

JMI 3058
1984

The electronic revolution has proved a boon in tackling the problem of rising costs of equipment in science laboratories. This programme demonstrates the making of an operational amplifier, a device commonly used in the laboratories, using inexpensive electronic components.

The Energy
31:53 min.

JMI 3097
1985

Man has made use of energy in various forms such as geothermal, nuclear, and many others. The concept of energy is explained in terms of force and work.

The Journey of Sound
20:00 min.

JMI 3066
1985

How is sound produced? What are ultrasonics and infrasonics? The programme also explains the nature and transmission of complex sound. The concepts of carrier wave, amplitude and frequency modulation are also explained.

Stationary Waves

25:00 min.

JMI 3069
1986

Musicians, Physicists and Engineers, all make use of the standing or stationary waves. These are produced as a result of the superimposition of direct and reflected waves in a medium.

Vibration

24:17 min.

JMI 3232
1986

This lecture demonstration explains the oscillation of bodies and forces associated with them.

Duality of Light

20:17 min.

JMI 6078
1985

Sometimes light behaves like a wave and sometimes as particles which travel in a straight line. The mysterious dual nature of light is explained in this programme.

Unity Behind Diversity in Nature—Part-I

29:32 min.

JMI TVP/60/67
1986

According to the Unified theory a unity is perceived within the basic building blocks of matter and also in the forces in nature. A magnificient link exists between the microscopic and the macroscopic world.

Unity Behind Diversity in Nature—Part-II

41:21 min.

JMI TVP 60/72
1986

Prof. Jogesh Pati discusses unification of the basic forces of nature, spontaneous breaking of symmetry and proton decay as a crucial test for grand unification theory. What are the implications of this theory for the understanding of cosmology?

Our Space The Magnetosphere—Part-I

20:00 min.

JMI 3354
1987

The matter, structure and composition of space around the earth is discussed with the help of still photographs.

Our Space Part-II

20:00 min.

JMI 3348
1987

After a brief introduction to the discovery of whistlers their sources are described and the importance of their study in understanding space is brought out.

Earthquakes
20:00 min.

JMI 3067
1984

Besides tracing the history of earthquakes, the programme also dwells on the science of sudden transient motion spreading into all possible directions causing earthquakes.

The Physics of Clouds—Part-I
16:30 min.

JMI 3022
1985

This programme describes two stages in the life of a rain cloud. First, lifting of moisture from ground and its condensation into fog and then the processes of growth of these tiny droplets into raindrops.

Physics of Clouds—Part-II
17:20 min.

JMI 3205
1985

In the second part we see how the small drops in the early stages of the formation of cloud grow into raindrops.

Heads or Tails
20:00 min.

JMI 6197
1985

Theory of probability is based on the experiences of our daily life.

Superconductors Are Getting Hotter
14:31 min.

JMI 3372
1987

Conductors like mercury are superconductors at very low temperatures. Present interest in superconductors is due to new ceramic compounds which are superconductors at much higher temperatures. This indicates exciting possibilities for future applications in Science and Technology.

Floods And Their Computations
21:52 min.

JMI 3083
1986

Apart from tracing the causes of floods in India this lecture also describes the computation related to floods through approaches like emperical relations, Rational formula and Unit Hydrograph theory.

Fictitious Forces—A Poser
15:00 min.

JMI 3278
1988

This programme is in response to questions raised in an earlier programme "Fictitious Forces : Their Origin".

Prof. Abdus Salam in Conversation with Prof. Yashpal

35:33 min. JMI 6359
1986

Nobel laureate, Dr. Abdus Salam talks with Prof. Yashpal on the present status and trends in particle physics. He also talks about the standard model and the relationship between astronomy and particle physics.

Ultrasonics

25:60 min. JMI 6366
1986

This programme is on the physics of ultrasonics or mechanical waves with frequency greater than 20 KHz.

Fictitious Forces: Their Origin

14:42 min. JMI 3092
1986

Fictitious forces is a name given to forces which arise when there is accelerated motion. This programme looks at the physics behind these forces.

Micro Physics And Macro Universe—Part I

21:15 min. JMI 3396
1988

Micro Physics And Macro Universe—Part II

21:15 min. JMI 3380
1988

A discussion with famous Astrophysicist Leon Lederman of the Fermi Lab in U.S.A. about the proposed super collider they are building and other aspects of Cosmology.

To Err Is Human

15:20 min. JMI 3092
1985

All scientific experiments necessarily involve errors. These errors can be studied systematically in a scientific manner.

Proton Decay As A Crucial Test of Grand Unification Theory

43:00 min. JMI TVP/60/21
1987

Prof. M.G.K. Menon, Prof. Jogesh C. Pati and Prof. Gopalakrishna discuss the basic ideas underlying the grand unification theory and the proton decay experiment being conducted at the Kolar Gold field since November 1980 in collaboration with Osaka University.

Errors In Measurements
22:53 min.

JMI 3395
1987

All measurements have errors associated with them. A very important aspect of measurement is to know how much is the error involved and what are the sources of these errors.

Spectroscopy
10:00 min.

JMI 3387
1986

Following a demonstration format the splitting of white light into it's component colours is explained with the help of a spectrometer.

Television Classroom
27:00 min.

JMI 6524
1987

A television classroom lecture on scalars, vectors and tensors as part of B.Sc. (Hons.) Physics syllabus.

Physiology

Seeing Is Believing
17:20 min.

JMI 6023
1984

Supported by visuals, graphics and standard examples this programmes deals with optical vision, visual pathways, perception of light and the process of seeing.

Political Science

The Indian Parliament—A Conversation with Dr. Balram Jakhar
17:00 min.

JMI 6371
1987

An interview with Dr. Balram Jakhar, speaker of the Lok Sabha on the Indian Parliament.

Another Day
20:24 min.

JMI 3409
1987

The film depicts a day in the life of poor working women and the forces which affect their lives.

Popular Science

Bharat Jan Vigyan Jatha — Part I

9:51 min.

JMI 3382
1988

A glimpse into the initial stages of the Bharat Jan Vigyan Jatha as it begins to move from Srinagar towards its destination — Bhopal.

Bharat Jan Vigyan Jatha — Part II

38:33 min.

JMI 6549
1988

A documentary on the Bharat Jan Vigyan Jatha organized by twenty-six people's science organizations. This film is on the Northern Branch of the Jatha which travelled from Srinagar to Bhopal in thirtyseven days.

Psychology

What's Wrong With Me

19:00 min.

JMI 3328
1987

This is a film on various stages of development in children, tests for the various stages and how they can be used to detect minor disabilities.

Special Children

20:11 min.

JMI 069
1987

Services for retarded children are almost non-existent in India, but children who show non-normal symptoms in their behaviour need special care.

Our World

23:00 min.

JMI 6394
1986

A film on spastic children it deals with their problems, desires and aspirations. Contrary to common belief these children are not mentally retarded.

Tool For Thought

11:00 min.

JMI 6444
1987

Classical science has provided mankind with a method of understanding the world by trying to reduce it to its barest element. But there is a need to incorporate qualitative elements that exist in nature but cannot be quantified.

NEEDH—Cheshire Home

8:14 min.

JMI 3038
1984

Cheshire Home in New Delhi looks after mentally retarded children. The programme peeps into the psyche and the needs of children who live in these kinds of homes.

Women of Rangabelia

33:11 min.

JMI 6132
1985

The women of Rangabelia in West Bengal are among the poorest in the world and live in one of its least hospitable regions. But today new rhythms are breaking into this pattern of poverty.

Unity in Diversity—Religion

30:02 min.

JMI 3052
1985

Interacting with each other over millenia people of diverse faiths have developed composite ways of living. Religion in this programme is examined as a social and historical phenomenon.

Children's SOS Village

08:04 min.

JMI 6064
1984

Shot on location at an SOS village in Delhi this programme deals with destitute children and their bringing-up in a family atmosphere.

Natural Landscape

28:30 min.

JMI 3099
1984

From snow capped Himalayan peaks to the blue waters of Indian ocean; from the dense monsoon forests in the east to the salt marshes in the west, this programme depicts the diversity of India.

Jyoti

10:00 min.

JMI 3090
1984

Jyoti deals with educating people about the capabilities of blind and attempts at removing certain misconceptions about them. It emphasises that the blind should be accepted in the society as equals.

Caste: Human Kind

24:00 min.

JMI 3012
1985

Dr. Vina Mazumdar of the Centre for Women's Development Studies talks about the social, economic and political dimensions of the caste system in India.

Loom of Languages

21:08 min. JMI 3077
1984

This programme is part of a series which traces the unity and diversity as a characteristic feature in India. The different languages of India have certain unifying characteristics which have been highlighted in the programme.

Helpage India—Sham Zindagi Ki

10:50 min. JMI 3059
1984

The efforts of a voluntary agency, Helpage India, to set up Homes for the aged and provide medicare, underscore the need to take practical steps to alleviate the sufferings of elderly people.

Concepts of Sociology

11:22 min. JMI 3289
1987

The programme introduces Sociology to undergraduate students. It briefly examines three fundamental questions: What is Sociology?, What is Social Group?, and What is Social Interaction?

The Golden Ring

10:00 min. JMI 6403
1987

A programme on the behavioural patterns within a group, cooperation and conflict. Why are groups necessary? What are the differences between a group and a crowd?

Check Mate

20:00 min. JMI 3375
1987

The programme deals with problems of overpopulation in Delhi. It works on three basic premises: how the problem started, what were or are its effects and what needs to be done in the next 10-15 years time.

Sports

Hockey

22:05 min. JMI 6042
1985

Every game is played according to rules. So is hockey.

Social Awareness

Rip Off
07:00 min.

JMI 3266
1986

The face of a city appears attractive only till it is left untampered and unmutilated. Posters are too often pasted in places where they have no business 'sticking around'.

A Call to the Consumer
22:23 min.

JMI 3301
1987

A programme on consumer awareness—it seeks to create awareness and encourage positive action among consumers.

Social Work

Mobile Creches
10:05 min.

JMI 6023
1984

Children of construction site workers need more than just love and compassion. This programme looks at the working of a school which shifts alongwith the shifting of construction sites in metropolitan Delhi.

Learning to Help
26:36 min.

JMI 3094
1984

Ali Village in New Delhi has grown haphazardly over the years causing problems to its inhabitants. Department of Social Work, Jamia Millia has been working in the village for its general upliftment.

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Sahara

10:00 min. JMI 6412
1986

Mr. Daince Kurien, a rehabilitation worker at Sahara House, describes the activities and routine of the rehabilitation centre alongwith his opinion of the nature of the narcotics problem.

Sociology

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Peasant Life In India

20:22 min. JMI 3016
1984

The culture, social set up and life styles of peasants from Kashmir to Kanyakumari and Rajasthan to Arunachal Pardesh are different. Regional pattern of the village, costumes and headgear, agricultural practices and modes of transport constitute the unbelievable diversity of India.

Ready, Get set, Go Set
16:40

JMI 6627
1988

A programme about the importance of sports for young people.

Technology

The Story of Copper
22:20 min.

JMI 3045
1986

This programme is about the different ways of mining copper, purification of the ore and the importance of copper in our daily life.

Firefighters
17:00 min.

JMI 3265
1987

The film deals with the logistics and methods behind Fire Brigade operations.

Off-Shore Structural Engineering
10:00 min.

JMI 6396
1986

Different aspects of oil drilling technology are discussed in this film. Differences between off-shore drilling and drilling on land are described.

Building With Mud
19:10 min.

JMI 6592
1988

This is an introductory programme on mud architecture and related building technology.

Of Men and Machines
19:05 min.

JMI 6580
1980

A programme on the education and training of car mechanics.

Theatre

"Gestures Speak"
10:00 min. JMI 6396
1988

It is a programme dealing with the importance of gestures in theatre and how gestures can be used to reinforce or contradict the spoken word.

Shakespeare: The Works
19:52 min. JMI 3289
1987

Nola Rae, a pupil of the legendary Marcel Marceau, has distinguished herself as a mime artist extraordinary. In partnership with the gifted John Mowat, she presents 'Shakespeare: The works'.

Glimpses of Puppetry
20:00 min. JMI 3215
1988

A round-up of an international puppetry festival held in Delhi. The programme shows various forms of puppets and a variety of themes depicting both the traditional and modern interpretations of the art.

Staging Beckett
18:00 min. JMI 3292
1987

This programme is about the style and philosophy of the playwright Samuel Beckett. The exploration is effected through the staging of the play ENDGAME.

Town Planning

Delhi Through The Ages
18:00 min. JMI 3403
1988

This programme seeks to explore the growth of Delhi since ancient times and how cities are planned by taking the examples of Purana Qila site, Shahjehanabad and New Delhi.

Transport

Rails
13:23 min. JMI 3346
1987

The film is a brief overview of Railway operations. The coordination required to make a train run from one station to another is the major emphasis of the film.