

CHAPTER 3 Contents of the Project

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3-1 Objectives

The Government of Indonesia in 1985 established the Radio and TV Broadcast Training Centre in the special city of Yogyakarta, as a division of MMTC with assistance from Japan. That project was based on the Indonesian government's conviction that, in order to ensure that full play is given to the special characteristics of the broadcasting media, it was most essential to secure personnel to be engaged in broadcasting services, particularly to educate and train those of the middle-manager level. Ever since the establishment of this Centre as a school authorized to confer degrees to its graduates, the Diploma Courses have been conducted under presidential order, and Japan's technical cooperation concerning personnel training has also been provided to these Diploma Courses as the objects of assistance.

As of 1990, at MMTC the training of personnel is carried on through DI (5 fields) and DII (3 fields) Courses but, as a result of changes made in the original curriculum, a shortage has arisen with regard to the facilities and equipment required. Consequently, MMTC is currently unable to provide the students with adequate training. And when it comes to the remaining portions of the DII Courses (5 fields) and the DIII Courses (11 fields), it is practically impossible for MMTC to conduct any of these Courses.

In order to improve this situation and thereby to enrich and expand the training of personnel possessing the abilities required for broadcasting work, the Government of Indonesia requested Japan to provide grant aid concerning the supply of facilities and equipment necessary in conducting DII and DIII training courses.

The objective of this project, therefore, is to supplement and maintain the facilities and equipment required in carrying out in full the Diploma Course training activities at the Radio and TV Broadcast Training Centre of MMTC, with the aim of training the candidates to become the middle-class senior officers who are essential to the maintenance and development of radio and TV broadcasting services in Indonesia.

3-2 Examination of the Contents of the Request

3-2-1 Examination of the Appropriateness and Necessity of the Project

(1) Necessity of Training

The development of radio and TV broadcasting services depends largely on the number and quality of personnel. Hence, the Government of Indonesia during the last ten years has been endeavoring to increase the number of personnel for broadcasting services by about 3,200. Furthermore, the government estimates that, during the next ten years, there will be the need to newly employ about 1,300 staff members in order to cope with the expansion of programme-production facilities, reinforcement of maintenance bases, expansion of broadcasting networks and improvement and enrichment of the contents of broadcast programmes. However, at present, of those engaged in broadcasting services, only a small percentage have received the specialized high-level education required in conducting broadcasting services, the percentage of those who are graduates of college or higher educational institutions being only about 10% at either the radio or the TV broadcasting organization. The remaining 90% are the graduates of senior high schools or lower-level schools. And the number of those who have received any level of specialized vocational education is also quite small. Moreover, owing to the inadequacy of the ability of those who are playing leading roles on the work-sites, various problems have arisen in the managerial and operational aspects, in relation to the maintenance of quality of broadcasts and that of technical facilities and equipment, including the questions of the contents of broadcast programmes and the technical levels of broadcasts.

In view of the circumstances as outlined above, the Government of Indonesia planned the establishment of MMTC, based on its judgment that the training of personnel within the organization is essential.

(2) Appropriateness of Japan's Assistance and Reinforcement of the Diploma Courses

At the beginning, MMTC was unable to conduct the DI Course in full owing to the shortage of funds allocated to MMTC as it so happened that the economic conditions in Indonesia were deteriorating. However, from 1989, as the conditions improved, MMTC started the training in three fields of the DII Courses which was feasible with the existing facilities and equipment, along with the training in five fields of the DI Courses.

However, the existing training facilities were planned for the Basic I~III training which aimed actual work, as stated in 2-3-3 (1). Therefore as mentioned below, the opening of the remaining DII Courses (5 fields) and the higher-level DIII Courses (11 fields) as planned by the Indonesian side is apparently impossible owing to the shortage of training facilities and equipment. MMTC at present has no full-scale auditioning equipment to screen or listen to the programmes or works produced; in other words, MMTC is not fully equipped with the functions to appreciate, evaluate or analyze broadcast programmes it has produced. Furthermore, despite the fact that MMTC is a practical training institution directly linked with workplaces, it lacks the facilities or equipment required for enabling the personnel to acquire new programme-production techniques, the techniques that the broadcasting stations of today have now started employing extensively. Moreover, the existing facilities at MMTC lack the equipment required for basic practical training in electronic engineering, communications and electric-power technology. Besides, MMTC has only one TV studio and one radio studio which are indispensable for practical training in programme production, with the result that the students cannot obtain training in the production of different types of programmes using studios equipped with different functions. The scarcity of such equipment as ENG cameras makes it difficult for each student to participate fully in practical training using those equipment.

For the education and training of the middle-level senior officers aimed at future development of broadcasting services, the enhancement of the educational level of the students through their participation in the DI Course is of primary importance. However, it is only through having the students proceed on to the DII and DIII Courses that it becomes possible to ensure that the students will eventually come to possess knowledge and skills essential to the middle-level senior staff members of a broadcasting organization. The primary target of the DI Courses, in which the students are to gain knowledge and skills in such fields as programming plans, programme production, news reporting, studio/master-control techniques and transmission techniques, is to acquire basic abilities in each of the different fields of broadcasting activities. The target of the DII Courses, viz., the eight courses from programme planning to repairing techniques, is the acquisition of abilities to carry out the planning work based on research conducted independently by mastering application techniques in each of the different fields of broadcasting.

The target of the DIII Courses, viz., the eleven courses from broadcast management to maintenance, is the acquisition of abilities to make managerial judgments based on research conducted independently with regard to each field of work. As outlined above, the consistent training from the basics to management is the characteristic of MMTC as a provider of Diploma Courses.

Therefore, what are considered necessary for the development of broadcasting in Indonesia are the enrichment of the DI Courses coupled with the installation of facilities and machines necessary for the DII and DIII Courses and the implementation of the DII and DIII Courses. For such purposes, too, Japan's cooperation is considered appropriate and justified.

(3) Setting of Targets

According to the long-term plan, MMTC will operate the DI Courses (5 fields), DII Courses (8 fields) and DIII Courses (11 fields) in 1998/99.

Meanwhile, Japan's project-type technical cooperation which was started in 1983 was extended by two years in October 1988 and is currently being examined for possible further extension from October 1990 to October 1992.

In view of such developments as outlined above, it seems to be more realistic to ensure realization of the training courses for the total of 14 fields which are planned for implementation in 1993/94, viz., the DI Courses (5 fields), DII Courses (6 fields) and DIII Courses (3 fields), after the extended technical cooperation is over, rather than directly setting 1998/99 as the target.

For such reasons as mentioned above, this project shall aim at running the above-mentioned training courses.

3-2-2 Examination of the Execution and Operational Plans

(1) Securing of Personnel

1) Securing of Instructors

The required numbers of instructors up to 1993/1994 are as shown in Table 3-2-1.

Table 3-2-1 Required Numbers of Instructors

Fiscal Year		1990/91	1991/92	1992/93	1993/94
Number of Courses (No. of trainees)	D I	5 (120)	5 (120)	5 (120)	5 (120)
	D II	3 (36)	4 (48)	5 (60)	6 (72)
	D III	—	—	3 (24)	3 (24)
Number of Instructors	From inside	27	27	27	52
	From outside	33	41	41	48
	Newly employed	—	—	25	—

Of the increased numbers of instructors mentioned in the table above, the 25 to be newly employed in 1992/93 have already been nominated. So, from now on, there is the need of increasing the number of instructors from outside by 8 in 1991/92 and 7 in 1993/94. Since even today 33 lecturers from outside are already employed, it seems to be quite possible to invite eight lecturers from outside the organization within a period of two years and seven more during another two years.

2) Maintenance-related Divisions

The failures of training equipment since the opening of MMTC are as shown in Table 3-2-2.

Table 3-2-2 Failures of Training Equipment

Year	Number of Cases
1985	20
1986	6
1987	11
1988	11
1989	20
Total	68

If the total number of cases of equipment failures, 68 in all, as shown in Table 3-2-2 were to be converted on a monthly basis, it would be 1.13 cases. To cope with such failures occurring at the above-mentioned rate, there are at present a total of 19 staff members in the Studio Equipment Division and the Training Equipment Division, both of which are in charge of repairs. So, as far as the repairing of the failed equipment is concerned, 19 persons are quite enough to handle failures of the existing equipment. This number may even be regarded as being too many, if the following facts are taken into account; that the increase in the quantity of equipment planned under this project is only about one-third of that of the existing equipment and that, excepting the initial failures, there will not be many cases of equipment failures for some time to come. MMTC at present has no plan to increase the number of its personnel, either. The increase of one person scheduled for 1990/91 is actually the result of changing the status of a temporary employee to that of a regular staff-member; there is no actual increase in work force.

3) Instruction-related Divisions

There are three instruction-related divisions; Programme Editing /Evaluation Division, Curriculum/Instructor-assignment Planning Division and Instruction Division. The main duties of each of

these divisions may be classified into the following three; the work relating to the trainees, to the instructors and to the outside lecturers.

As to the work relating to the trainees, it starts with registration and includes preparations and arrangements concerning travel expenses, daily allowances, dormitory life and teaching materials.

As to the work relating to the instructors, there are preparations and arrangements concerning curriculum, classrooms, teaching materials, extracurricular events and sports.

As to the work relating to the outside lecturers, there are the selection of subjects, search for appropriate lecturers, negotiations with would-be lecturers and arrangements for lectures.

The amount of work relating to the trainees increases in proportion to the number of trainees, while that of work relating to the instructors and outside lecturers increases in proportion to the number of training courses.

As a result of implementation of this project, the number of trainees will be increased from 156 to 216 and that of the courses from 8 to 14. In other words, the numbers will be increased 1.38 fold and 1.75 fold, respectively.

Accordingly, since the current total number of staff members assigned to the three instruction-related divisions is 19, the implementation of the Project will probably necessitate an increase in that number to either 26 or 33. So, if a mean figure were to be adopted, it would be necessary to increase the number to a minimum of 30.

4) Administrative Divisions

The principal duties of the three administrative divisions, viz., Personnel Division, Finance Division and General Affairs Division, includes personnel affairs concerning the staff and instructors under direct control, finance, ceremonial affairs, building management, management of cars, running of the dining hall, the dormitory for trainees and the apartments for instructors, security service and car-drivers' work. As far as these categories of work are concerned, implementation of the Project is not likely to cause an increase in the volume of work

substantial enough to necessitate an increase in the number of personnel. Since such work as building management and the running of the dining hall and dormitory are handled by outside agencies, these have nothing to do with the projected increase in the number of personnel. And since the implementation of this project will not result in an increase in the number of entrances or exits, there will be no need to increase the number of guardsmen. No increase in the number of car-drivers will be necessary either, since the implementation of the Project will not necessitate an increase in the number of cars.

(2) Securing of Budget

MMTC's budget is composed of two sections; the development budget and the ordinary budget. The development budget covers the expenses of training of personnel, including the trainees' travel expenses, daily allowances, lodging charges, the costs of stationery for use in the training, remunerations for lecturers, miscellaneous expenses relating to tests, and other expenses relating to training. The ordinary budget covers the MMTC's operational expenses including salaries and allowances payable to the staff, expenses for daily necessities, costs of office fixtures, power charges, telephone charges, costs of teaching materials, building-repair expenses, car-maintenance charges, training-equipment maintenance charges and travel expenses.

Table 3-2-3 shows the transition of MMTC's annual budgets.

Table 3-2-3 MMTC Budget in the Past and the Present

	Development Budget	Routine Budget
1985/86	239,495	0
1986/87	215,539	454,600
1987/88	266,690	421,100
1988/89	240,000	628,600
1989/90	577,950	615,250
1990/91	600,424	630,562

(Unit: 1000Rp)

The reasons the development budget was increased sharply in 1989/90 were that, firstly, the number of DI Courses was increased by one course and, secondly, courses to supplement some of the 1988/89 courses were conducted. And the reasons the ordinary budget was increased sharply in 1989/90 were the purchases made of dormitory articles and fixtures and the spare parts for training equipment, an increase in the telephone-charge rates and an increase in the costs of purchases of stationery. Another factor was the overall increase in the amount of the budget allocated, as a result of the business recovery that occurred in that particular fiscal year.

As to the development budget, MMTC in recent years has annually been allocated just about the same amount it applied for, while the ordinary budgets are allocated in roughly the same amount as what was actually spent the preceding year. The MMTC officers in charge are also of the view that the current trend of budget allocation will continue for some time in the future because, they say, the central government has been attaching a great deal of importance to the training of broadcasting personnel. So, MMTC is likely to be able to continue securing the budget it requires in the coming years. The question of the budget will be discussed further in 3-3-5.

3-2-3 Examination of This Project's Relations to, or Overlapping with, Other Similar Projects

(1) Outline

At present, in the field of broadcasting in Indonesia, there is no project in progress or being planned that is either similar to or related to this project concerning the training of broadcasting personnel, including the projects either being conducted or planned by other countries or international organizations offering assistance to developing nations. However, an outline will be given here of how the training of broadcasting personnel is actually conducted in Indonesia, since there are three broadcast-related training centres in operation as internal organs of the Ministry of Information which operates the broadcasting stations in this country.

The Government of Indonesia has three broadcast-related training organizations; RTC (Radio Training Centre), TVTC (TV Training Centre) and MMTC (Multi Media Training Centre). While all of these three training centres belong to the Ministry of Information, RTC and TVTC are under direct control of the Employee's Education & Training Centre of the Ministry and MMTC, of the Minister's Secretariat (Fig. 3-2-1)

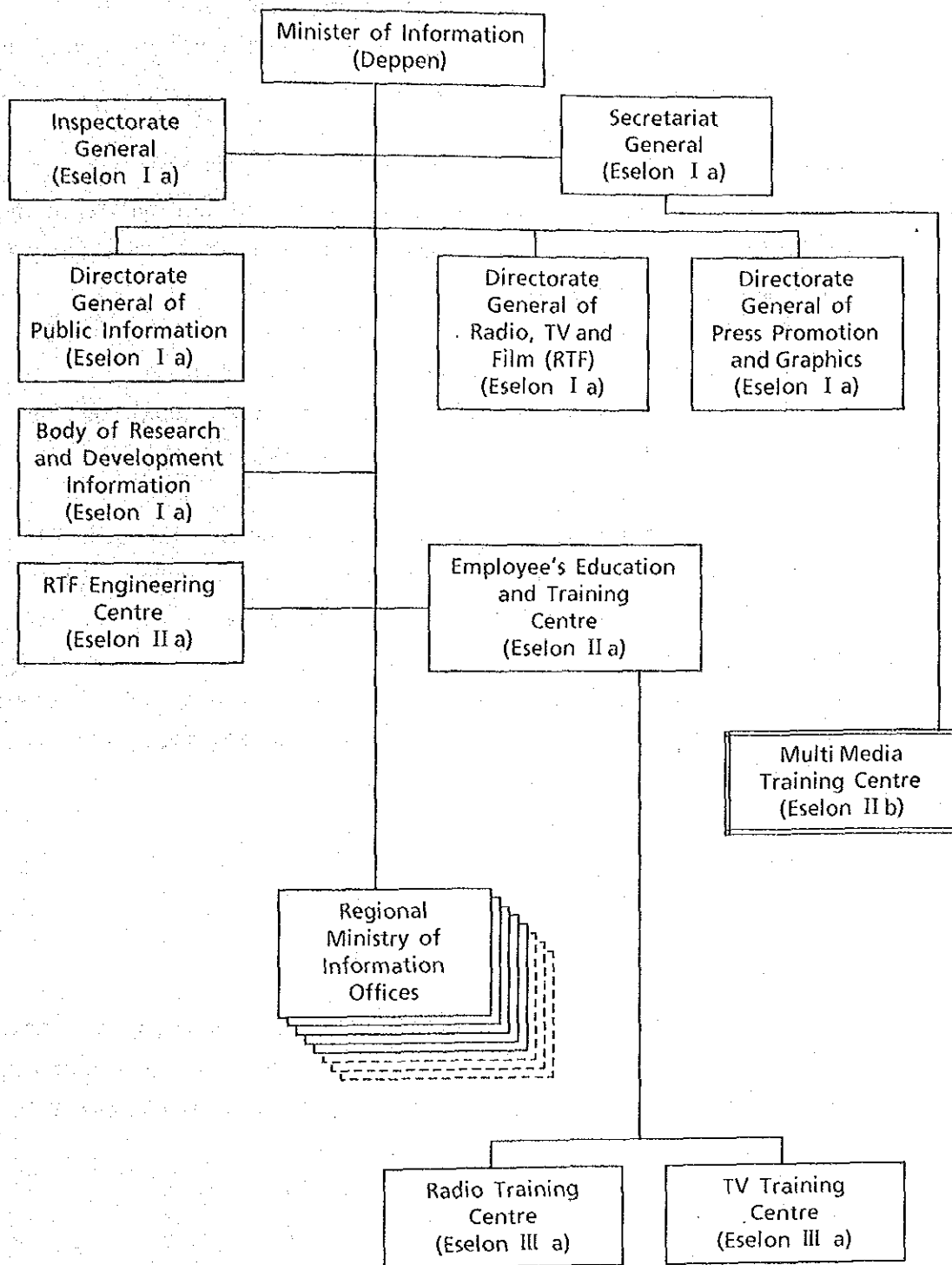


Fig. 3-2-1 Organization of the Ministry of Information.
("ESLON" means position-classification)

While MMTC is a school recognized by the Ministry of Education, RTC and TVTC are not recognized as educational organizations.

MMTC only provides the facilities; it does not concern itself with the training of personnel.

(2) RTC

1) Sharing of work

In Article 13 of the Secretary General's Instruction dated March 7, 1987, the following two items are specified as the ranges of work to be undertaken by RTC:

- a) To plan and execute the orientation training in radio for the newly-employed staff members.
- b) To plan and execute the training in vocational skills for radio broadcasting.

2) Facilities

The training centre is located in the Kubayolan district which is several kilometers away from the Jakarta broadcasting station of RRI. The classroom building is two stories, while the lodging facilities are housed in a 3-story building. The lodging facilities contain 30 rooms with a total capacity of 60 people. The classroom building consists of the following facilities:

Offices	7
Transmission training room	1
Workshop	1
Language laboratory	1
Studios	3

3) Staff and Instructors

The total number of staff members is 42, which does not include instructors. There are four full-time and 31 part-time instructors. The breakdown of the 31 part-time instructors is as follows:

Broadcasting	15
News	7
Engineering	9

Besides the above, there are five assistant-instructors.

4) Records of Training Conducted

By RRI, 2,850 were trained by December 1989, as follows:

a) Basic Training

Basics in broadcasting	361
Basics in engineering	345
Basics in news-reporting	80

b) Intermediate Training

Announcers	138
RRI producers	470
Non-RRI producers	513
Administration	59
News monitors	20
News reporters	183
Studio engineering	206
Transmission engineering	126
Maintenance techniques	140
Broadcast management	70

c) High-level Training

Training of instructors	74
Training of Centre's staff	65

5) Future Training Plans

The numbers of courses planned and those of personnel scheduled to be trained from now on are:

figures in () are number of personnel

	Basic	Intermediate	High-level
1990/91	2 (120)	6 (130)	2 (40)
1991/92	2 (120)	7 (140)	1 (20)
1992/93	2 (120)	6 (130)	2 (40)
1993/94	2 (120)	7 (140)	1 (20)

Although many courses are planned, what will actually be carried out will be only a part of them. For example, for 1989/90 and 1990/91, 280 and 290 personnel, respectively, had been scheduled to be trained but the amount of budgets actually allocated to each were only for 90 trainees.

6) Budgets

The budgets are shown in Table 3-2-4.

7) Organization

The organization chart is as follows:

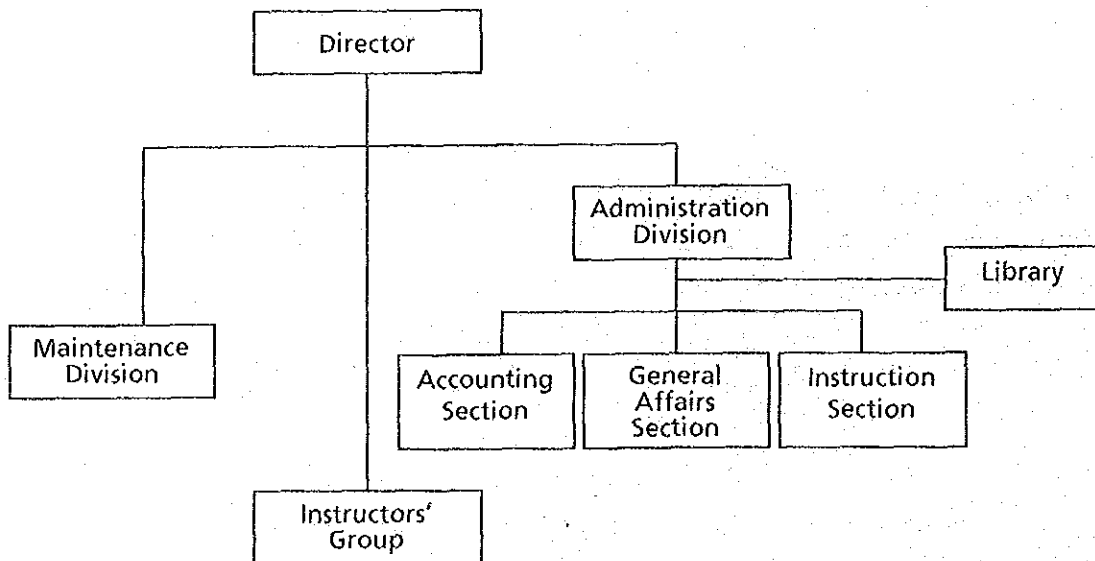


Table 3-2-4 Records and Costs of Training at the RTC

(Units in Rupiahs)

Fiscal Year	Management costs	Training		Maintenance & Repairs	Construction	Total
		Participants	Expenditure			
1977/1978	2,400,000	240	98,531,000	49,069,000	—	150,000,000
1978/1979	3,424,000	210	89,526,000	11,850,000	15,200,000	120,000,000
1979/1980	11,898,000	220	101,752,000	13,000,000	13,000,000	139,650,000
1980/1981	9,000,000	215	126,980,000	14,386,000	3,434,000	153,500,000
1981/1982	20,333,000	174	119,107,000	9,250,000	60,710,000	210,000,000
1982/1983	31,020,000	250	219,880,000	33,625,000	62,975,000	347,500,000
1983/1984	21,335,000	478	201,521,000	27,823,000	61,020,000	311,700,000
1984/1985	34,238,000	235	256,379,000	27,785,000	211,597,000	530,000,000
1985/1986	44,209,000	345	378,835,000	96,592,000	—	519,636,000
1986/1987	36,000,000	225	287,722,000	3,000,000	1,678,000	328,400,000
1987/1988	22,003,000	80	90,372,000	2,625,000	—	115,000,000
1988/1989	24,325,000	100	100,675,000	—	—	125,000,000
1989/1990	15,770,000	65	52,725,000	—	—	68,495,000
		25	25,000,000	—	—	25,000,000
1990/1991	15,770,000	65	63,200,000	—	—	75,000,000
		25	25,000,000	—	—	25,000,000
Total	287,755,000	2,952	2,237,805,000	288,705,600	429,614,000	3,243,881,000

(3) TVTC

1) Sharing of Work

In Article 14 of the Secretary General's Instruction dated March 7, 1987, the following two items are specified as the ranges of work to be undertaken by TVTC:

- a) To plan and execute the orientation training in television for the newly-employed staff members.
- b) To plan and execute the training in vocational skills for television broadcasting.

2) Facilities

In contrast to the RTC which is located several kilometers away from RRI's Jakarta broadcasting station, the TVTC is built within the compound of TVRI's Jakarta broadcasting station. The Centre has the following facilities:

TV studio	1	VTR room	1
Classrooms	6	Editing rooms	2
Art & design room	1	Master control room	1
Conference room	1	Engineers' room	1
Film-developing room	1	Library	1
Telecine room	1	Computer room	1
Director's room (including a draft- ing room)	1	Draftsmen's room	1
Staff rooms	6	Workshop	1

3) Staff and Instructors

The total number of staff members is 112 which includes 12 full-time instructors. The part-time instructors are invited, as needs arise, from universities or other educational institutions.

4) Records of Training Conducted

The records of training courses conducted heretofore are shown in Table 3-2-5.

5) Future Training Plans

For 1990/91, the following training courses are planned:

Courses run with the	2	(Fundamentals of TV trans- development budget mitter and Training of trainers)
Course run with the	1	(Fundamentals of TV journalism) ordinary budget
Courses run by TVRI	9	(unfixed)
Courses run by TVRI's	4	(2 courses each of fundamentals Jakarta station of TV production and TV studio technique)
Courses run by TVTI's	6	(unfixed) Surabaya station
Seminars and workshops	6	(unfixed)
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Total	28	

6) Budgets are shown in Table 3-2-5

7) Organization

The organization chart of TVTC is as follows:

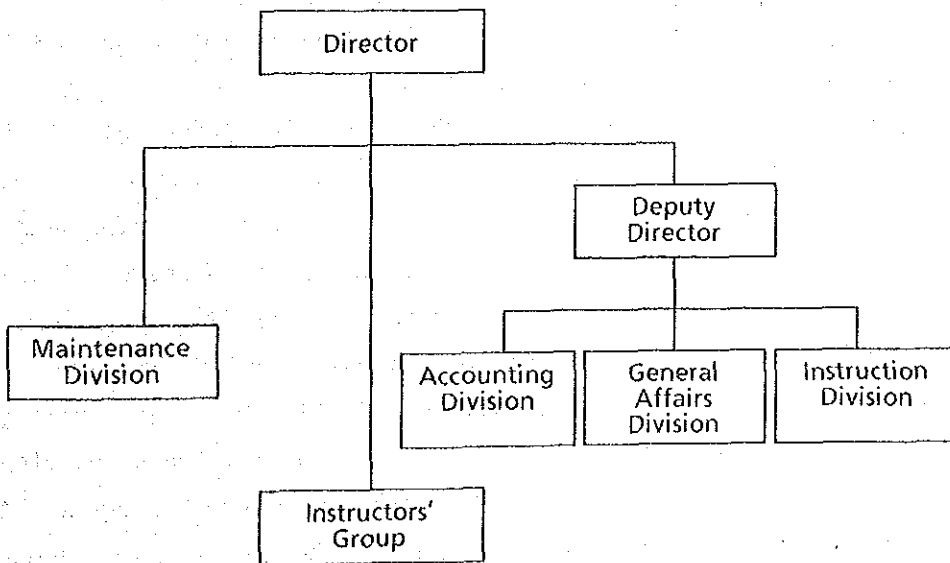


Table 3-2-5 Records and Budget of Training at TVTC

No.	Fiscal Year	Budget (in Rupiahs)	No. of Trainees	No. of Courses
1.	1980/1981	450,000,000	114	8
2.	1981/1982	990,000,000	330	27
3.	1982/1983	1,232,000,00	627	24
4.	1983/1984	983,166,700	413	25
5.	1984/1985	1,024,870,000	456	25
6.	1985/1986	618,515,000	295	14
7.	1986/1987	374,000,000	187	16
8.	1987/1988	128,000,000	88	9
9.	1988/1989	125,000,000	99	8
10.	1989/1990	62,257,000	275	13
	Total	5,987,808,700	2,884	169

(4) Relations between the Three Training Organizations

There are distinct differences between the three training centres, viz., RTC, TVTC and MMTC. As explained in the paragraph on work-sharing, the differences are that, while RTC and TVTC are the organizations that give vocational training, the MMTC is an organization that conducts diploma training. For that reason, the MMTC conducts training on a 2 semester basis with each year as a unit, whereas in the case of RTC, for example, it has no semesters and its courses vary in length.

While MMTC is a school recognized by the Ministry of Education, RTC and TVTC are not recognized as educational organizations.

As to the curriculums, too, the MMTC has an established curriculum consisting of general subjects, basic-function subjects and specialized subjects and applies this curriculum to all of the courses of the same level. In contrast to this, RTC and TVTC each run the Basic, Intermediate and Advanced courses, and there is no case where these three levels of training are given within the same course.

The three training organizations thus being quite different from one another in character, there is no chance of an overlapping taking place in their functions. As mentioned earlier, at the MMTC, a type of vocational

training called "Enrichment Courses" is conducted making use of vacancies in hours and facilities in the schedule for any of the Diploma Courses.

MMTC only provides the facilities; it does not concern itself with the training of personnel.

3-2-4 Examination of the Contents of Facilities and Equipment Requested by Indonesia

The facilities and equipment requested by the Indonesian side are as explained in 2-3-3. Here, in this section, examinations from many angles will be made of the objectives of use, essentiality, technical conditions, etc., with regard to the facilities and equipment to be provided under the Project, so that the outcome of the examinations may be used as a foundation for the drafting of the plans.

(1) Television Studio

This studio, equipped with all the facilities (studio and a subcontrol room) and installations and equipment (TV cameras, audio and lighting sets) that are required in producing TV programmes in the studio, will provide basic training facilities to enable wide-ranging practical training in broadcasting and engineering including practical training of studio-programme production staff and the technical staff in charge of studio-programme production engineering and adjustment techniques. As a result of implementation of the Project, this TV studio, together with the existing TV studio, will enable two groups of trainees to undergo practical training in parallel in different courses. This means that it will become possible to use the studios according to the contents of the practical training to be given and, therefore, the degree of necessity of this additional TV studio is extremely high.

Whereas the existing TV studio is a medium-size studio (about 260m²) intended mainly for production and recording of relatively large-scale programmes such as TV dramas, the new TV studio will be designed as a small studio (about 260m²) that is compact in size and is suited for flexible use, fit for the production of news programmes and news shows. It is going to be a studio of high operational efficiency, that is, a studio that can be operated with fewer expenses for lighting, air conditioning and set-construction. As to the TV cameras, a combined use will be made of ENG-type cameras and a tripod for outside-broadcast use (with a dolly). The adoption of this system will enable the studio camera, when not in use, to be used for news-reporting and outside relay

broadcasts, thus contributing to the enhancement of efficiency in the training of personnel in the handling of ENG equipment.

(2) VTR Equipment

1) Two C-format 1-inch VTRs

Based on the judgment that the needs may be met with the existing VTRs of the same system, these will be excluded from the list of equipment to be provided under this project.

2) Five Betacam Editing Systems

As of April 1990, three sets are installed at MMTC. However, in the case of practical training in the range of work from news-gathering to video editing, the number of sets available is extremely short as compared with the news-gathering equipment, the current availability of editing equipment being only one set to 4 (DII) or 8 (DI) trainees. It is therefore proposed that, by installing 5 sets of editing systems to handle the additional work resulting from the five ENG cameras to be newly introduced, the availability of editing systems be improved to one set for 1-3 trainees so that the effect of practical training may be further enhanced.

3) One Post-production System

This system will enable efficient detailed editing of a large volume of tape-recorded materials, as this system will include the following items of equipment; three sets of 1/2-inch VTRs (when necessary, the two sets of 1/2-inch VTRs in the TV subcontrol room for in-studio recording use may be added, and, besides, these VTRs are capable of recording the pictures from the existing 1-inch and 3/4-inch VTRs as well), an editor, a video special-effects device, a character-generator and a video switcher. Since the system is also capable of adding titles and superimpositions to the recorded tapes as well as making image corrections, various video processing and audio treatments, it has now become a system indispensable for the production of complete programmes in VTR. In Indonesia, too, this post-production system was introduced in March 1990 into TVRI's Jakarta broadcasting station and has been proving quite effective in the production of sophisticated types of programmes, including the editing of drama programmes. On the other hand, when the fact that the outcome of production work is decisively determined

by the levels of the personnel's understanding of the post-production system, of their skills in the handling of post-production devices and also of their skills in the handling of post-production devices and also of their production experience, it must be stressed that training of post-production staff is of great importance and that, therefore, the degree of necessity of practical training is extremely high.

(3) ENG Equipment

As a result of technological progress made in recent years, news coverage using small and lightweight ENG equipment is becoming increasingly common and gaining a foothold across the globe.

At present, eight sets of ENG cameras have been allocated and are in use at MMTC, but, in addition to these eight, two sets of ENG cameras with built-in VTR will be allocated in order to enhance the density of the contents of training by increasing the availability of the cameras to one to each trainee in the practical training in news coverage and material-gathering for documentary programmes in DI and DIII Courses. (In the training of 12-member classes in DII, it would be necessary to make use of two ENG cameras borrowed from the TV studio.)

(4) Radio Studio

The radio studio, equipped with a sub-control room and such devices as audio recording/playback equipment and special-effects devices, will be used for voice-dubbing as well as for practical training in radio programme production.

So equipped to play the central role in the training of programme production and radio engineering personnel, this new radio studio, together with the existing radio studio, will enable training of two groups in parallel in different courses. The degree of its necessity can be judged as being quite high for enhancing the effects of practical training, since the new radio studio will enable efficient use of various studio equipment according to the contents of training which differ by course and by class.

Whereas the existing facilities for practical training of personnel in radio programme production are provided by a medium-size studio (about 150m²) intended for production of a general-type of monaural radio programmes, it is considered that the appropriate type of radio studio to be installed in response to the Indonesian government's request would be a

stereophonic studio of a relatively small size, suitable for multi-purpose use, especially for the production of news and talk programmes.

As to stereophonic programming, introduction of stereophonic sounds to radio programmes has recently been pushed ahead not only by the commercial broadcasting stations in Indonesia but also by RRI. Hence, it is absolutely necessary to promote training in the production of stereophonic programmes and acquisition of the technological skills concerned.

As to the request made for provision of an audio dubbing studio, it is considered possible to cope with the expected needs by installing a set of audio dubbing equipment in the sub-control room of the radio studio so as to enable common use of the studio for both programme production and audio dubbing.

(5) Outside-broadcast Equipment

1) TV OB Van

Since MMTC already has two TV OB Vans, which are considered capable of coping with its needs even if the number of training courses may be increased to some extent, the degree of necessity for additional TV OB vans is low and therefore these will be excluded from the list of equipment to be provided under this project.

2) Radio OB Van

Since the MMTC already has one radio OB Van which is considered enough to cope with its needs even if the number of training courses may be increase to some extent, the degree of necessity for additional radio OB vans is low and therefore this item will be excluded from the list of equipment to be provided under this project.

(6) Production Preparation Room and Auxiliary Installations

1) Performance training room

The programme-production training room, a 78m² room which can be used by partitioning into 1/3 or 2/3 the original size, will also be used as a performance training room.

2) Physics-Programme Preparation room

No independent room will be reserved as a physics-programme preparation room but, instead, according to the contents of preparatory work that needs to be done, a corner or some spare

space of other rooms will be used appropriately, such as the programme production training room and other training rooms.

3) Science-Programme Preparation room

The same as in the case of 2) above.

4) Designing room

No independent room will be set up but, instead, the Programme Production Training Room will be used.

5) Scriptwriting room

The same as in the case of 4) above.

As mentioned above, the objective of use of the five production preparation rooms is not the training itself. Considering the fact that substitute facilities which normally are not used so frequently will adequately serve the purpose, it has been decided that the functions of the five rooms should all be concentrated into the Programme Production Training Room.

(7) Basic-training Room

1) Electronics Training Room and Training Equipment

This room aims at providing facilities for the trainees to learn basic and applied techniques concerning electronic circuits and logical circuits. Hence, the room is equipped with circuit boards and measuring instruments. In this room, training is given to transmission and production operation engineers in basic electronic technology capabilities through lectures and practical training. In the existing electronic technology training room, only some extent of practical training in elementary electronics and electricity is feasible and, besides, the facilities and equipment are restricted.

For that reason, for the production-operation engineers, no substantial practical training is given in circuitry. Therefore, the degree of necessity for provision of a Basic-training room is judged as being high.

2) Relevant Electric Power Training Room and Training Equipment

The main objective of this room is to provide basic training in electric-power equipment including generators, motors and transformers which are widely used in broadcasting facilities such as transmitting stations and studios.

At present, the MMTTC has only a few sets of equipment such as a transformer and, as a result, no systematic practical training is

conducted to enable the trainees to substantiate what they have learned through the lectures.

For broadcast engineers who require broad knowledge and skills, the electric-power technology is most essential and, therefore, the degree of necessity for an electric power training room and training equipment is judged as being high.

3) Radio Frequency Training Room and Training Equipment

The objective of this room is to provide the trainees with the facilities for learning theories on radiowave signals and measuring methods concerning the radiowaves used for broadcasting, especially VHF and microwaves.

At present, MMTC has medium-wave, TV and FM transmitters, which are used for the training of personnel in transmission techniques in the DI Courses. However, since sufficient facilities are lacking for practical training, especially in radiowave signal theory on VHF and microwaves, MMTC is not in a position to conduct practical training of transmission engineers taking part in DII and DIII Courses in which the above-mentioned are included as a part of the curriculum. For that reason, the degree of necessity of the Radio Frequency Training Room and its associated training equipment is judged as being quite high.

On the other hand, as to the equipment requested for installation at MMTC for the transmitter training room and outdoor facilities among the applied training rooms to be mentioned below in 8), it seems to be more efficient to provide a comprehensive radiowave training room by installing the necessary equipment (VHF transmitter, PALAPA receiver, etc.) in the Radio Frequency Training Room so that it may also be used for training in other radiowave-related fields as well.

(8) Training Room for Applied Technologies

1) Audio Training Room and Training Equipment

The objective of these facilities is to provide practical training in such technologies as the generation of audio signals and transmission. But in order to achieve such an objective, there seems to be little need of installing independent facilities. It is judged as being more efficient to allocate the equipment required, such as measuring instruments, to the

Electronics and Digital Training Room mentioned in (7)-1) above and conduct practical training there.

2) Video-image Training Room and Training Equipment

The same as in the case of the audio training room mentioned above, it is judged as being more efficient to allocate the necessary equipment, such as measuring instruments, to the Electronics and Digital Training Room and conduct practical training there.

3) Transmitter Training Room

MMTC is requesting the supply of such equipment as TV and radio transmitters. At present, MMTC has two medium-wave and one TV and one FM transmitters. However, since it has only one 100w TV transmitter, a severe shortage is felt, both in quality and quantity, in training a large number of personnel in TV transmitter technologies. Hence, it is considered necessary to allocate to MMTC a full-scale TV transmitter with an output of about 1KW and relevant measuring instruments. As to the place of installation of such a transmitter, the above-mentioned Radio Frequency Training Room is considered as being efficient.

4) Outdoor Installations

MMTC requests the provision of such outdoor installations as a FPU transmitter/receiver, a shortwave antenna and a satellite transmission receiving antenna. Of these, it is judged that the degree of necessity is especially high for practical training in the handling of antennas for the reception of transmissions from the PALAPA satellite which has an important role to play in TV transmissions in Indonesia. In this respect, it is considered most efficient to install a receiver in the Radio Frequency Training Room and conduct overall radiowave training there.

The objective of installing an FPU transmitter/receiver is to give practical training in microwave theory and such training is considered feasible with the equipment to be allocated to the Radio Frequency Training Room.

As to the shortwave antenna, it is considered that the effect on practical training would be small in view also of the fact that the installation of corresponding equipment, viz., transmitter/receiver, construction site and steel tower would be required.

(9) Other Facilities

1) Two Classrooms and Equipment for Educational Use

There are at present 12 classrooms. Under the plan of MMTC, the number of classes is to total 14 by 1993/94.

The allocation of these 14 classes to the existing training facilities at MMTC would be quite feasible during the period of practical training, if the practice room or the training room (to be mentioned later) were used. For that reason, it is considered that there is no need of providing new classrooms. (Refer to the results of a simulation shown in Fig. 3-1-3)

2) Three Joint Lecture Rooms and AV Equipment

At present, joint lectures with a maximum of 120 participants are conducted mainly for general subjects in the auditorium (maximum 450 seats) and temporary lobby (50~70 seats). Since these rooms are not appropriate for the lectures due to their nature, structure and environment, a new joint lecture room is necessary. As far as the necessary number of rooms is concerned, only one room of a maximum capacity of 120 persons is considered to be sufficient due to past experience and future plans.

3) Audio-visual Classroom and AV Equipment

MMTC's request concerning audio-visual facilities and equipment may be summarized as follows. In order to enrich audio-visual education using various kinds of video teaching materials and to conduct evaluation and guidance regarding the outcome of practical training in various fields such as the production of various types of programmes, editing of programmes and material-gathering for the production of programmes, while auditioning the actual programmes with the trainees, MMTC wishes to have an audio-visual room to serve the purpose. In the case where audio-visual education is to be conducted for all the trainees attending each of the different courses, the total number of trainees would be a maximum of 120 persons (DI), while in the case of evaluation of and guidance on the results of training conducted in different advanced courses, it is likely that the maximum number of trainees to assemble in the audio-visual room would be 8 (DII or DIII). If such cases as mentioned above were to be assumed, it would be difficult to cope with the requirement in an efficient and carefully thought-out manner with a single

independent audio-visual room. Hence, it is judged as being most appropriate to cope with demands for efficient audio-visual education in the following manner. In the case where a class or study/evaluation of programmes is conducted for a large number of trainees using AV equipment, an arrangement should be made to conduct the class or study/evaluation of programmes in the Joint Classroom mentioned earlier in which AV equipment, such as a video projector, is set up. And in the case of such a class as evaluation and guidance concerning the results of practical training, that is, a class given to a small group of trainees, measures should be taken to make efficient use of the Programme-Production Training Room which can be partitioned into 2 or 3 small rooms (each equipped with a video playback device) to be used individually to suit their respective purposes, as will be explained later in this report.

In short, what are proposed here are, instead of providing an independent audio-visual room, to install AV equipment of an appropriate scale in the Joint Classroom and, at the same time, to assign three sets of simple-type video auditioning equipment to the Programme-Production Training Room.

4) Seminar Room and AV Equipment

MMTC requests the provision of more than one room for use in conducting research on the selection of a subject for each of the groups taking part in various kinds of practical training.

As mentioned in 2-3-3 in which an explanation was given on how the training courses are actually conducted, the practical training in programme production is run by the method of having all the participants in the particular course take part in the production of TV or radio programmes, as the case may be, under different themes designated in advance, after splitting themselves up normally into about four groups, such as a studio production group or an outside-broadcast group, either in radio or in TV.

In the above-mentioned case, the programme production itself is done at various facilities, such as a studio, but preliminary consultations, preparations, discussions, writing of reports, and other work associated with the programme production are usually conducted in separate rooms. For such purposes, classrooms are

normally used at present.

As mentioned in 9), in order to allocate the existing 12 classrooms appropriately to the 14 classes of the future, provision of a separate room for practical training in programme production would become a condition to be met.

While the maximum number of participants in a team is normally about 24, there seldom is a case where all of these members gather together in a single room. This number tends to fluctuate and, therefore, it is considered quite feasible to cope with the situation by setting up a space, which can accommodate about a half of the maximum number of participants in a team to meet or work together and which is equipped with AV machines, at three locations (each of such spaces should be of a structure that enables obtaining a big room by removing the temporary partitioning walls, according to needs) and by using, where necessary, the classrooms as well.

Based on the results of the examination made as outlined above, it is judged that the setting up of a new programme-production training room, instead of the seminar room requested by MMTC, is most essential.

5) ENG-equipment Maintenance Room and Auxiliary Equipment

With the steady increase in the number of training courses in news coverage and programme-material recording using small and lightweight ENG systems, the needed ENG equipment is likely to increase substantially. In the case of MMTC, it is requesting the provision of an ENG-equipment maintenance room. It is considered that the degree of necessity is high for a room and equipment for use in conducting efficiently such work as preparing for regular check-ups on equipment, changing of batteries and maintenance, all of which are indispensable for training in the use of ENG equipment.

6) Language Laboratory

For English-language education, MMTC is requesting provision of a language laboratory equipped with an LL system.

In the MMTC's curriculum for the Diploma Courses, importance is attached to English language education in all the training courses. MMTC aims at attaining the goal of ensuring that all the participants in the training courses will eventually become

capable of taking part in discussions in English using technical terms as well. For that purpose, it is considered that the degree of necessity is high for an English classroom equipped with an LL system that enables effective study of the English language.

3-2-5 Examination of Essentiality of Technical Cooperation

The technical cooperation currently being executed has been going on since 1983 and is due to complete its term in October 1990.

The cooperation and technological transfers in relation to the preparation of teaching materials for the DI Courses have already been completed and the cooperation in relation to the preparation of teaching materials for the DII and DIII Courses are also scheduled to be completed by October. However, technological transfer in relation to the DII and DIII Courses has not yet been conducted. In order to carry out the technological transfer mentioned above, there is the need of extending the implementation of the technical cooperation.

3-2-6 Basic Policy for Execution of Cooperation

As a result of examinations made as outlined above, various questions concerning the implementation of the Project, such as its effects, its feasibility and the executive capabilities of the country concerned, have been confirmed and it has also been made certain that the effects that can be expected as a result of implementation of the Project are in perfect conformity with the intent and spirit of Japan's grant aid cooperation, as stated in Chapter 5. Accordingly, it has been judged that it is most appropriate to carry out this project with Japan's grant aid cooperation.

Based on this judgment and on the premise that the Project will be executed with Japan's grant aid cooperation, the outline of the Project will now be examined so that the basic designing may be carried out. As to the actual contents of the Project, however, it is considered appropriate to change a part of what were requested originally, the reasons being as explained in the sections of this report in which examinations were made of the component factors of this project, and the contents of facilities and equipment requested by the Indonesian government.

3-3 Outline of the Project

3-3-1 Executing Agency and the Operational System

Figs. 3-3-1 and 3-3-2 show the positioning on the organization chart of the MMTC which is the executing agency.

Fig. 3-3-2 also show the personnel assignments.

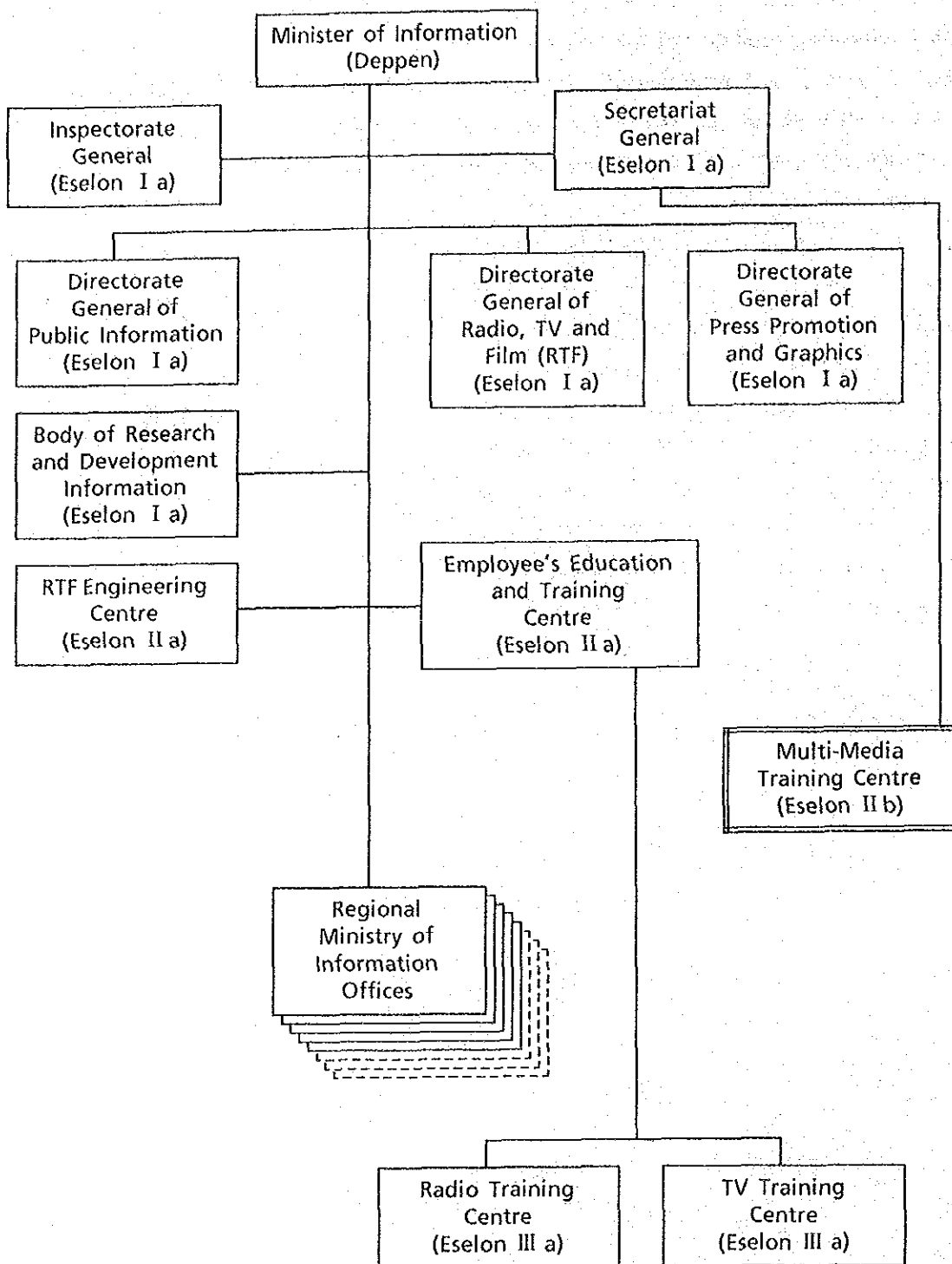


Fig. 3-3-1 Organization Chart of Deppen

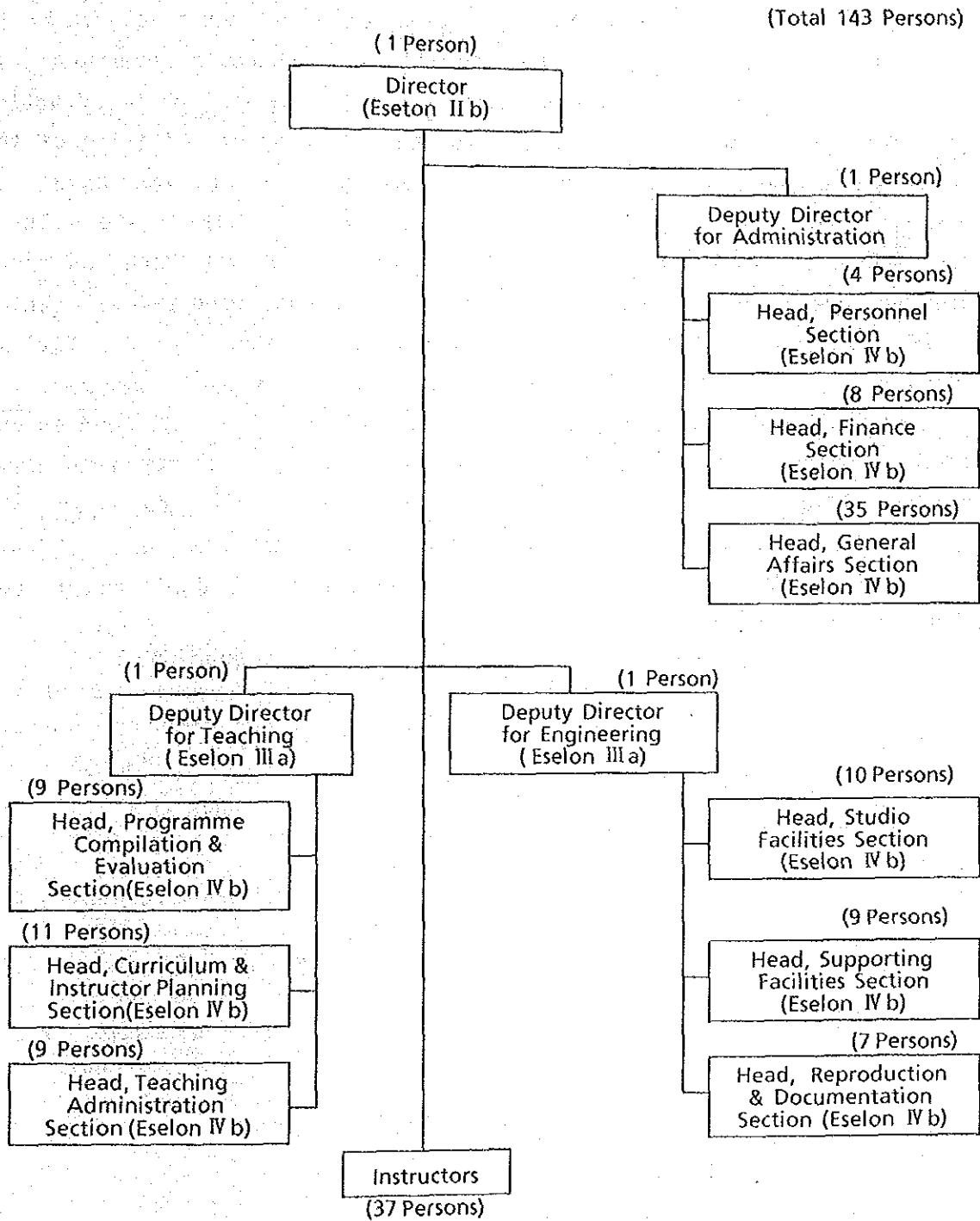


Fig. 3-3-2 Organization Chart of MMTC

3-3-2 Operational Plans

(1) Training Plans

With a view to spreading information-conveying education aimed at promoting national unity and modernization, the Indonesian government has been endeavoring to expand the nation's radio and television broadcasting networks. Based on its conviction that the enhancing of abilities of the personnel engaged in radio and TV broadcasting is most essential in ensuring the steady development of broadcasting services of the future, the Indonesian government in July 1985 established the MMTC and has since been conducting the training of candidates to become middle-level senior staff officers in the broadcasting services by starting the Diploma Courses.

As mentioned in 2-4, the MMTC plans to start the DI - DIII Courses one after another so that the total number of such courses may eventually reach the target of 24 courses. It is the plan of MMTC to expand the present 8 courses to 14 courses during the period from this year, 1990/91, to 1993/94. The courses and fields of training to be implemented each year are as shown in Table 3-3-1.

Table 3-3-1 Training Course Plan

Study Programme \ Years	1990/91	1991/92	1992/93	1993/94
D I				
1 Programme Compilation Planning	24	24	24	24
2 Programme Lines Production	24	24	24	24
3 News and Current Affairs Reporting	24	24	24	24
4 Studio and Master Control Technics	24	24	24	24
5 Transmission Operation	24	24	24	24
5 Courses	(5) 120	(5) 120	(5) 120	(5) 120
D II				
1 Broadcasting Programme Planning	—	—	12	12
2 Programme Package Production	12	12	12	12
3 Script / Storywriting	12	—	—	12
4 Broadcast Journalism	—	12	12	12
5 Studio Production Technics	12	12	12	12
6 Transmission Technics	—	12	12	12
6 Courses	(3) 36	(4) 48	(5) 60	(6) 72
D III				
1 Educational and Religious Programmes	—	—	—	8
1' Cultural and Entertainment Programme Production	—	—	8	—
2 Scenario and Storyboard Writing	—	—	8	8
3 Apparatus Engineering	—	—	8	8
3 Courses	0	0	(3) 24	(3) 24
14 Courses	(8) 156	(9) 168	(13) 204	(14) 216

Figures on the table are the number of trainees

(2) Curriculum

As to the contents of the training given in each course, there already exists a curriculum established by MMTC. So, in this project, detailed plans will be set up on the basis of curriculum.

Table 3-3-2 shows an outline of the training programme and Table 3-3-3 the plans for the numbers of units taken annually for each training course and the plans for the assignments of practical training and lectures to which particular importance is attached.

Table 3-3-2 Outline of Training Programme

Course	Outline of Training Programme	Remarks	
D I	1 Programme Compilation Planning	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programmes and Professional Skills, such as programme compilation, programmes administration, audience research, scriptwriting, etc.</p> <p>Practice : To practice programme compilation, audience research and programme production</p>	<ul style="list-style-type: none"> • General Subjects of D I Course • Religion • State Ideology • Research Methodology • Indonesian Language • English
	2 Programme Lines Production	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programmes and Professional Skills, such as programme production, programme aesthetics, scriptwriting, etc.</p> <p>Practice : To practice programme production</p>	
	3 News and Current Affairs Reporting	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to news programmes and Professional Skills, such as ethical code in journalism, news scriptwriting, news editing, R-TV journalism, etc.</p> <p>Practice : To practice news programme production</p>	
	4 Studio and Master Control Techniques	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to electric and electronic engineering and Professional Skills, such as studio equipment, measurement, production techniques including audio, video and lighting, etc.</p> <p>Practice : To practice operation in programme production and basic electricity, electronics and radio techniques</p>	
	5 Transmission Operation	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to electric and electronic engineering and Professional Skills, such as radio techniques, antenna, measurement, transmitter equipment, etc.</p> <p>Practice : To practice operation of transmitter, and basic electricity, electronics and radio techniques</p>	
	1 Broadcasting Programme Planning	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programmes and Professional Skills, such as programme production, management of production, scriptwriting, etc.</p> <p>Practice : To practice programme compilation, audience research and programme production</p>	
	2 Programme Package Production	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programmes and Professional Skills, such as programme production, dramaturgy, directing, etc.</p>	
	3 Script/Storywriting	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programmes and Professional Skills, such as programme production, literature, scriptwriting, etc.</p> <p>Practice : To practice scriptwriting for programme production</p>	
	4 Broadcast Journalism	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to news programmes and communication and Professional Skills, such as broadcast journalism, news programme production, news bulletin and current affairs, etc.</p> <p>Practice : To practice news programme production</p>	
	5 Studio Production Techniques	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to electric and electronic engineering and technical management and Professional Skills, such as audio and video techniques, editing techniques, measurement, equipment, etc.</p> <p>Practice : To practice programme production techniques, and electricity, electronics and radio techniques</p>	
6 Transmission Techniques	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to electric and electronic engineering and technical management and Professional Skills, such as transmission techniques, antenna and radiowave propagation, measurement, transmitter, etc.</p> <p>Practice : To practice transmitter techniques, and electricity, electronics and radio techniques</p>		
D II	1 Educational and Religious Programme Production	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programmes and Professional Skills, such as scriptwriting, programme production, animation, etc.</p> <p>Practice : To practice programme production</p>	<ul style="list-style-type: none"> • General Subjects of DII Course • Citizenship • Indonesian Language (for Courses 1, 2, and 3) • Research Methods • English
	1' Cultural and Entertainment Programme Production	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programmes and Professional Skills, such as traditional music and puppetry, performance choreography, scriptwriting, animation, etc.</p> <p>Practice : To practice programme production</p>	
	2 Scenario and Storyboard Writing	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programme scenario and Professional Skills, such as script and story writing, animation, acting, characterization, etc.</p> <p>Practice : To practice scriptwriting for programme production</p>	
	3 Apparatus Engineering	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to electric and electronic engineering and computer techniques and Professional Skills, such as production equipment, broadcasting station equipment planning, digital video effects, acoustics, etc.</p> <p>Practice : To practice production and transmitter equipment techniques, and electricity, electronics and radio techniques</p>	
	1 Educational and Religious Programme Production	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programmes and Professional Skills, such as scriptwriting, programme production, animation, etc.</p> <p>Practice : To practice programme production</p>	
	1' Cultural and Entertainment Programme Production	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programmes and Professional Skills, such as traditional music and puppetry, performance choreography, scriptwriting, animation, etc.</p> <p>Practice : To practice programme production</p>	
D III	2 Scenario and Storyboard Writing	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programme scenario and Professional Skills, such as script and story writing, animation, acting, characterization, etc.</p> <p>Practice : To practice scriptwriting for programme production</p>	<ul style="list-style-type: none"> • General Subjects of DIII Course • English • Comparative Science of Religion (for Course 1) • Indonesian Language (for Course 2) • Maintenance Management (for Course 3) • "Educational and Religious Programme Production" will be held in 1993/94. • "Cultural and Entertainment Programme Production" will be held in 1992/93.
	3 Apparatus Engineering	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to electric and electronic engineering and computer techniques and Professional Skills, such as production equipment, broadcasting station equipment planning, digital video effects, acoustics, etc.</p> <p>Practice : To practice production and transmitter equipment techniques, and electricity, electronics and radio techniques</p>	
	1 Educational and Religious Programme Production	<p>Lecture : To learn General Subjects, Basic Knowledge/Skills related to broadcasting programmes and Professional Skills, such as scriptwriting, programme production, animation, etc.</p> <p>Practice : To practice programme production</p>	

Table 3-3-3 Numbers of Units to be Taken Annually and the Assignments of Practical Training and Lectures

Courses		No. of Units to be taken annually	Nos. of Units to be Taken in :	
			1st Semester	2nd Semester
D I	Lecture		22	14
	Practical training		2	6
	Total	44	24	20
DII	Lecture		12~17	15~18
	Practical training		6	4
	Total	40~42	18~23	19~22
DIII	Lecture		14~16	10~12
	Practical training		4	6
	Total	36~38	18~20	16~18

- Figures show the number of units to be taken.

Lecture : By attending fifty 50-min. Lectures + a 5-min. recess for one semester, a trainee gets two units.

Practical training : By participating in practical training from 8:00~16:20 one day for one semester, a trainee gets two units.

The curriculums of different courses are given in Tables 3-3-4 (1) - 3-3-4 (15).

The details of subjects taught in five DI courses and three DII courses, which are currently being conducted as of 1990, are given in the "Remarks" column. It is considered appropriate to draw up and implement the training plans hereafter along these lines. As for the details of the subjects to be taught in the remaining courses, they are planned to be determined this coming July (1990) with the assistance of the JICA experts to be sent from Japan.

Table 3-3-4 (1) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA I

STUDY PROGRAMME : PROGRAMME COMPILATION PLANNING

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			I	II	
I.	GENERAL SUBJECTS				
1.	Religion	2	2	-	1. Islam, Catholic, Protestant, Hindu, Buddhist
2.	State Ideology	2	2	-	2. State Ideology, 1945, State Basic Law and GBHN
3.	Introduction to Research Methodology	2	2	-	3. Scientific Writing Guidance
4.	Indonesian Language	2	2	-	4. Indonesian Literature and Language
5.	English I	2	2	-	5. General Basic English
6.	English II	2	-	2	6. Professional English
	SUB TOTAL	12	10	2	
II.	BASIC KNOWLEDGE/SKILLS				
7.	Introduction to Programme Management	3	-	3	7. Programme Compilation & Management
8.	Programme Formatology	2	2	-	8. News, Education, Cultural & Entertainment Programmes
9.	Introduction to Programme Production	2	2	-	9. Introduction to Aesthetics & Ethics of R-TV Programme Production
10.	Cultural Appreciation	2	-	2	10. National Cultural Appreciation & Social Psychology
11.	Communication Science	2	-	2	11. Inter & Intrapersonal Communication, Mass Communication, Journalistics, Public Relation, Rhetoric Public Study
	SUB TOTAL	11	4	7	
III.	SKILLS				
12.	Audience Research	2	-	2	12. Problem Formulation Hypothesis, Formulation of Data Gathering and Processing
13.	The Role of Broadcasting Right	3	3	-	13. Copyright, Patent, Programme, Procedure
14.	Administration	2	2	-	14. Personnel Management, Budget, Logistics Programme Support
15.	Scriptwriting I	3	-	3	15. R-TV Scriptwriting
16.	Introduction to Programme Compilation	2	2	-	16. The Arrangement of Programme Pattern in Related to Utilize the Resources
17.	Practice I	6	-	6	
18.	Practice II				
	SUB TOTAL	21	10	11	
	TOTAL	44	24	20	
19.	Sport and Health				
20.	The Structural Organization and Work Procedures of the Ministry of Information				

Table 3-3-4 (2) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA I

STUDY PROGRAMME : PROGRAMME LINES PRODUCTION

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			I	II	
I.	GENERAL SUBJECTS				
1.	Religion	2	2	-	1. Islam, Catholic, Protestant, Hindu, Buddhism
2.	State Ideology	2	2	-	2. State Ideology, 1945, State Basic Law and GBHN
3.	Introduction to Research Methodology	2	-	2	3. Scientific Writing Guidance
4.	Indonesian	2	2	-	4. Indonesian Literature and Language
5.	English I	2	2	-	5. General Basic English
6.	English II	2	-	2	6. Professional English
	SUB TOTAL	12	8	4	
II.	BASIC KNOWLEDGE/SKILLS				
7.	Science of Communication	2	-	2	7. Mass Communication & Basics of Journalism, Public Relations, Public Speech, Audience Research
8.	Introduction to Production Management	3	3	-	8. Production Management
9.	Introduction to Broadcast Programmes	2	2	-	
10.	Programme and Broadcast Management	2	-	2	
	SUB TOTAL	9	5	4	
III.	SKILLS				
11.	Programme Production I	3	3	-	11. Introduction to R-TV Production:
12.	Programme Production II	3	-	3	- Educational Culture, Religion, Sports
					- Music
					- Dance
					- Drama
13.	Aesthetics & Art in Programme Production I	4	4	-	13. 14.
14.	Aesthetics & Art in Programme Production II	3	-	3	- Lighting Arrangement
					- Sound Arrangement
					- Decoration Arrangement II
					- Colourimetry
15.	Scriptwriting	2	2	-	- Pictures and Sound Arrangement II
16.	Programme Production Practice I	2	2	-	15. R-TV Scriptwriting
17.	Programme Production Practice II	8	-	6	16. 17. Practice R-TV Production
	SUB TOTAL	23	13	12	
	TOTAL	44	24	20	
18.	Sports and Health				
19.	The Structural Organization and Work Procedures of the Ministry of Information				

Table 3-3-4 (3) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA I

STUDY PROGRAMME : NEWS AND CURRENT AFFAIRS REPORTING

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			I	II	
I.	GENERAL SUBJECTS				
1.	Religion	2	2	-	1. Islam, Catholic, Protestant, Hindu, Buddhism
2.	State Ideology	2	2	-	2. State Ideology, 1945, State Basic Law GBHN
3.	Introduction to Research Methodology	2	-	2	3. Scientific Writing Guidance
4.	Indonesian Language	2	2	-	4. Indonesian Literature and Language
5.	English I	2	2	-	5. General Basic English
6.	English II	2	-	2	6. Professional English
	SUB TOTAL	12	8	4	
II.	BASIC KNOWLEDGE/SKILLS				
7.	News Formatology	2	2	-	7. The Analysis of News Resources, News Selection, News Formats, Daily News and News Information.
8.	Introduction to News Programme Management	2	2	-	
9.	Introduction to News Programme Production	2	2	-	
10.	Planning of News Programmes and Broadcasting Programmes	2	-	2	
11.	Science of Communication	2	2	-	11. Mass Communications & Basics of Journalism, Public Relations, Public Speech, Audience Research
	SUB TOTAL	10	8	2	
III.	SKILLS				
12.	Journalism Ethical Code	2	2	-	
13.	News Text Writing	3	-	3	
14.	News Editing Technics	2	2	-	
15.	R-TV Journalism	2	2	-	
16.	Reporting & Interviews	3	-	3	
17.	Aesthetics & Art in Programme Production	2	-	2	17. - Sound Arrangement - Lighting System - Artistic Arrangement
18.	Practice News Broadcast Programme Production	2	2	-	
19.	Practice News Production	6	-	6	
	SUB TOTAL	22	8	14	
	TOTAL	44	24	20	
20.	Sports and Health				
21.	The Structural Organization and Work Procedures of the Ministry of Information				

Table 3-3-4 (4) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA I

STUDY PROGRAMME : STUDIO AND MASTER CONTROL TECHNICAL OPERATION

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			I	II	
I.	GENERAL SUBJECTS				
1.	Religion	2	2	-	1. Islam, Catholic, Protestant, Hindu, Buddhism
2.	State Ideology	2	2	-	2. State Ideology, 1945, State Basic Law and GBHN
3.	Introduction to Research Methodology	2	-	2	3. Scientific Writing Guidance
4.	Indonesian Language	2	2	-	4. Indonesian Literature and Language
5.	English I	2	2	-	5. General Basic English
6.	English II	2	-	2	6. Professional English
	SUB TOTAL	12	8	4	
II.	BASIC KNOWLEDGE/SKILLS				
7.	Mathematics	2	2	-	
8.	Electronics	3	3	-	8. Electric technics, Electronics Technics, Digital Technics
9.	Audio and Video Technics I	2	2	-	
10.	Audio and Video Technics II	2	-	2	
	SUB TOTAL	9	7	2	
III.	SKILLS				
11.	Measurement & Measuring Instruments	2	-	2	11. Theory and Practice
12.	Studio Equipment Technics I	2	2	-	
13.	Studio Equipment Technics II	2	-	2	
14.	Technical Aspects of Programme Production	3	3	-	14. R-TV Programme Production, Technics of Sound
15.	Lighting System & Colourimetry Production	2	2	-	System and Theory of Music
16.	Technics of Tools For Picture and Sound	4	-	4	
17.	Practice in Handling Equipment For Programme Production I	2	2	-	
18.	Practice in Handling Equipment For Programme Production II	6	-	6	
	SUB TOTAL	23	9	14	
	TOTAL	44	24	20	
19.	Sports and Health				
20.	The Structural Organization and Work Procedures of the Ministry of Information				

Table 3-3-4 (5) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA I

STUDY PROGRAMME : TRANSMISSION OPERATION

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			I	II	
I.	GENERAL SUBJECTS				
1.	Religion	2	2	-	1. Islam, Catholic, Protestant, Hindu, Buddhism
2.	State Ideology	2	2	-	2. State Ideology, 1945, State Basic Law GBHN
3.	Introduction to Research Methodology	2	-	2	3. Scientific Writing Guidance
4.	Indonesian Language	2	2	-	4. Indonesian Literature and Language
5.	English I	2	2	-	5. General Basic English
6.	English II	2	-	2	6. Professional English
	SUB TOTAL	12	8	4	
II.	BASIC KNOWLEDGE/SKILLS				
7.	Mathematics	2	2	-	
8.	Electric Technics	2	2	-	
9.	Electronics I	2	2	-	9. Electronic Technics, Digital Technics
10.	Electronics II	2	-	2	
11.	Audio and Video Technics I	2	2	-	
12.	Audio and Video Technics II	2	-	2	
	SUB TOTAL	12	8	4	
III.	SKILLS				
13.	Radio Technics	2	2	-	
14.	Antenna and Radio Wave Propagation	2	-	2	
15.	Studio Equipment Technics II	2	-	2	15. R-TV Transmission Technics
16.	Measurement and Measuring Instruments I	2	2	-	
17.	Measurement and Measuring Instruments II	2	-	2	
18.	Transmitter Technics I	2	2	-	18. R-TV Transmission Technics
19.	Transmitter Practice I	2	2	-	19. Electronics and Measurement Practice
20.	Transmitter Practice II	6	-	6	20. R-TV Measurement Practice and Digital Practice
	SUB TOTAL	20	8	12	
	TOTAL	44	24	20	
21.	Sports and Health				
22.	The Structural Organization and Work Procedures of the Ministry of Information				

Table 3-3-4 (6) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA II

STUDY PROGRAMME : BROADCASTING PROGRAMME PLANNING

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			I	II	
I.	GENERAL SUBJECTS				
1.	Citizenship	2	2	-	
2.	Indonesian Language II	2	2	-	
3.	English III	2	2	-	
4.	English IV	2	-	2	
5.	Audience Research II	2	2	-	
	SUB TOTAL	10	8	2	
II.	BASIC KNOWLEDGE/SKILLS				
6.	Programme and Broadcast Management II	2	-	2	
7.	Communication Psychology	2	2	-	
8.	Cultural Anthropology I	2	-	2	
9.	Role of Public Relations and Advertising	2	2	-	
10.	Communication Planning and Strategy	2	-	2	
	SUB TOTAL	10	4	6	
III.	SKILLS				
11.	Programme Evaluation & Production I	2	-	2	
12.	Technics of Production Material Arrangement	2	2	-	
13.	Planning of Human Resources I	2	-	2	
14.	Effective Staff Writing	2	-	2	
15.	Budgeting Planning I	2	-	2	
16.	Practice III	6	6	-	
17.	Practice IV	4	-	4	
	SUB TOTAL	20	8	20	
	TOTAL	40	20	20	

Table 3-3-4 (7) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA II

STUDY PROGRAMME : PROGRAMME PACKAGE PRODUCTION

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			III	IV	
I.	GENERAL SUBJECTS				
1.	Citizenship	2	-	2	1. Nationalism
2.	Research Methods II	2	2	-	2. Data Processing & Analysis, Research Report
3.	Indonesian Language II	2	2	-	3. Grammar, Literature, Writing
4.	English III	2	2	-	4. Grammar, Conversation
5.	English IV	2	-	2	5. Profession, Conversation/Discussion
	SUB TOTAL	10	6	4	
II.	BASIC KNOWLEDGE / SKILLS				
6.	Communication Science II	2	-	2	6. Media & Non Media Communication
7.	Programme Formatology II	2	-	2	7. Programme Formatology
8.	Animation I	2	-	2	8. The Principle of Animation
9.	Production Management III	2	2	-	9. R-TV Programme Production Management
	SUB TOTAL	8	2	6	
III.	SKILLS				
10.	Aesthetics & Art of Programme Production III	3	-	3	10. Artistic, Sound & Lighting Technics
11.	Dramaturgy	2	2	-	11. Dramaturgy
12.	Directing I and II	2	-	2	12. Programme Directing
13.	The Arts of Hearing and Seeing I	2	2	-	13. Lines composition, sound montage, and depth dimension
14.	Programme Production III	3	-	3	14. R-TV Programme Production
15.	Practice III	6	6	-	
16.	Practice IV	4	-	4	
	SUB TOTAL	22	10	12	
	TOTAL	40	18	22	

Table 3-3-4 (8) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA II

STUDY PROGRAMME : SCRIPT / STORYWRITING

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			III	IV	
I.	GENERAL SUBJECTS				
1.	Citizenship	2	-	2	1. Nationalism
2.	Research Methods II	2	2	-	2. Data Processing & Analysis, Research Reports
3.	Indonesian Language II	2	2	-	3. Grammar & Literature, Writing
4.	English III	2	2	-	4. Structure / Grammar, Conversation
5.	English IV	2	-	2	5. Profession, Conversation / Discussion
	SUB TOTAL	10	6	4	
II.	BASIC KNOWLEDGE / SKILLS				
6.	Social Communication	2	-	2	6. Social Communication
7.	The Technics of Broadcast – Programme Collection	2	-	2	7. Getting Ideas, hunting Ideas, processing Ideas, Development of Ideas, Outline and Framework of Ideas
8.	Programme Formatology II	2	2	-	8. R-TV Programme Formatology
9.	Programme Broadcast management II	2	-	2	9. R-TV Programme Formatology
	SUB TOTAL	8	2	6	
III.	SKILLS				
10.	Aesthetics and Art of Programme Production II	3	-	3	10. Art, Light & Sound Technics, Editing, Music Illustration, the Arts of Hearing and Seeing
11.	Literature	2	-	2	
12.	Scriptwriting II	2	2	-	12. R-TV Scriptwriting on Documentary and Feature
13.	Scriptwriting III	3	-	3	13. R-TV Storywriting
14.	Programme Production	2	2	-	14. R-TV Programme Production for Documentary and Feature
15.	Practice III	6	6	-	15. R-TV Script Practice
16.	Practice IV	4	-	4	16. R-TV Scriptwriting for Programme Production
	SUB TOTAL	22	10	12	
	TOTAL	40	18	22	

Table 3-3-4 (9) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA II

STUDY PROGRAMME : BROADCAST JOURNALISM

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			III	IV	
I.	GENERAL SUBJECTS				
1.	Citizenship	2	-	2	
2.	Research Methods II	2	2	-	
3.	English III	2	2	-	
4.	English IV	2	-	2	
5.	Indonesian Language II	2	2	-	
	SUB TOTAL	10	6	4	
II.	BASIC KNOWLEDGE / SKILLS				
6.	News Programme Management II	2	2	-	
7.	Development Communication	2	-	2	
8.	Cultural Anthropology	2	-	2	
9.	Communication Psychology	2	-	2	
	SUB TOTAL	8	2	6	
III.	SKILLS				
10.	R-TV Journalism II	3	3	-	
11.	Technics of Development - Presentation and Reportage	3	-	3	
12.	News Bulletin and Current Affairs II	2	-	2	
13.	News Editing II	2	2	-	
14.	News Programme Production	2	-	2	
15.	Practice III	3	6	-	12. Daily News, News Magazine and Informational News
16.	Practice IV	4	-	4	
	SUB TOTAL	22	11	11	
	TOTAL	40	19	21	

Table 3-3-4 (10) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA II

STUDY PROGRAMME : STUDIO PRODUCTION TECHNICS

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			III	IV	
I.	GENERAL SUBJECTS				
1.	Citizenship	2	-	2	1. Nationalism
2.	Research Methods I	2	2	-	2. Data Processing & Analysis, Research Report
3.	English III	2	2	-	3. Grammar & Conversation
4.	English IV	2	-	2	4. Profession & Conversation
	SUB TOTAL	8	4	4	
II.	BASIC KNOWLEDGE/SKILLS				
5.	Electronics II	3	3	-	5. Digital Technics, Electric Technics, Electronics
6.	Management Technics	2	-	2	6. Administration, Circulation, Network Planning, Maintenance and Facilities
7.	Lighting and Sound Technics	2	2	-	7. The Art of Arranging Light & Sound
8.	Power Supply, Safety Engineering and Fire Prevention I	2	-	2	8. Safety Design, Heat, Current and Fire Protection
9.	Camera Blocking Technics	2	-	2	9. Basic Technics of TV Film
	SUB TOTAL	11	5	6	
III.	SKILLS				
10.	Audio Technics	2	2	-	10. Audio System
11.	Video Technics	2	2	-	11. Video System
12.	Measurement Technics II	2	2	-	12. Measurement & Audio - Video Measurement Equipment
13.	The Technics of Editing and Synchronizing I	2	2	-	13. Picture & Sound I
14.	The Technics of Editing and Synchronizing II	2	-	2	14. Picture & Sound II
15.	The Technics of Equipment Operation	3	-	3	15. R-TV OB & Studio Equipment
16.	Practice III	6	6	-	16. R-TV Programme Production Practice
17.	Practice IV	4	-	4	17. R-TV Programme Production Practice
	SUB TOTAL	23	14	9	
	TOTAL	42	23	19	

Table 3-3-4 (11) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA II

STUDY PROGRAMME : TRANSMISSION TECHNIQS

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			III	IV	
I.	GENERAL SUBJECTS				
1.	Citizenship	2	-	2	
2.	Research Methods II	2	2	-	
3.	English III	2	2	-	
4.	English IV	2	-	2	
	SUB TOTAL	8	6	4	
II.	BASIC KNOWLEDGE /SKILLS				
5.	Mathematics II	2	2	-	
6.	Electronics III	2	2	-	
7.	Digital Switching Concept	2	-	2	
8.	Power Supply, Safety Engineering and Fire Prevention I	2	-	2	
9.	Pulse Technics	2	2	-	
	SUB TOTAL	10	6	4	
III.	SKILLS				
10.	Fundamentals of Simulcast Paging System	2	2	-	
11.	Antenna and Radio Wave Propagation II	2	-	2	
12.	Transmission Technics II	2	-	2	
13.	Measurement and Equipment III	2	2	-	
14.	Measurement and Equipment IV	2	-	2	
15.	Transmitter Technics II	2	-	2	
16.	Practice III	4	6	-	
17.	Practice IV	6	-	4	
	SUB TOTAL	22	10	12	
	TOTAL	40	20	20	

Table 3-3-4 (12) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA III

STUDY PROGRAMME : EDUCATION AND RELIGION PROGRAMME PRODUCTION

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			V	VI	
I.	GENERAL SUBJECTS				
1.	English V	2	2	-	
2.	English VI	2	-	2	
3.	Religion Comparison Science	2	2	-	
	SUB TOTAL	6	4	2	
II.	BASIC KNOWLEDGE / SKILLS				
4.	Social Communication	2	-	1	
5.	Education Psychology	2	2	-	
6.	R-TV Education Programme II	2	2	-	
7.	Cultural Anthropology II	2	-	2	
	SUB TOTAL	8	4	4	
III.	SKILLS				
8.	Intercultural & Development	2	2	-	
9.	Communication Development	2	2	-	
10.	Scriptwriting II	2	-	2	
11.	Music Illustration	2	-	2	
12.	Aesthetics & Art of Programme Production IV	2	2	-	
13.	Animation II	2	2	-	
14.	Practice V	4	4	-	
15.	Practice VI	6	-	6	
	SUB TOTAL	22	12	10	13. Including the Arts of Hearing and Seeing
	TOTAL	36	20	26	

Table 3-3-4 (13) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA II

STUDY PROGRAMME : CULTURAL AND ENTERTAINMENT PROGRAMME PRODUCTION

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			V	VI	
I.	GENERAL SUBJECTS				
1.	English V	2	2	-	
2.	English VI	2	-	2	
	SUB TOTAL	4	2	2	
II.	BASIC KNOWLEDGE/SKILLS				
3.	Cross Cultural Communication	2	-	2	
4.	Programme Creation	2	2	-	
5.	Stage Show Programmes	2	2	-	
6.	Cultural Anthropology II	2	-	2	
7.	Cultural Appreciation	2	-	2	
	SUB TOTAL	10	4	6	
III.	SKILLS				
8.	Traditional Musicology & Puppetry	2	2	-	
9.	Performance Choreography	2	2	-	
10.	Scriptwriting II	2	2	-	
11.	Aesthetics & Art of Programme Production IV	2	-	2	
12.	Animation	2	2	-	
13.	Directing III	2	-	2	13. Including the Arts of Hearing and Seeing
14.	Practice V	4	4	-	
15.	Practice VI	6	-	6	
	SUB TOTAL	22	12	10	
	TOTAL	36	18	218	

Table 3-3-4 (14) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA III

STUDY PROGRAMME : SCENARIO AND STORYBOARD WRITING

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			III	IV	
I.	GENERAL SUBJECTS				
1.	Indonesian Language III	2	2	-	
2.	English V	2	2	-	
3.	English VI	2	-	2	
	SUB TOTAL	6	4	2	
II.	BASIC KNOWLEDGE /SKILLS				
4.	Literature (Drama) II	2	-	2	
5.	Cultural Anthropology	2	2	-	
6.	Drawing and Composition	2	2	-	
7.	Cinematography	2	-	2	
	SUB TOTAL	8	4	4	
III.	SKILLS				
8.	Script and Story Writing IV	3	3	-	
9.	Animation	3	-	3	
10.	Script Analysis	2	-	2	
11.	Characterization	2	2	-	
12.	Acting	2	2	-	
13.	Practice V	4	4	-	
14.	Practice VI	6	-	6	
	SUB TOTAL	22	11	11	
	TOTAL	36	19	17	

Table 3-3-4 (15) STRUCTURE OF THE CURRICULUM PROGRAMME

PROGRAMME : DIPLOMA III
 STUDY PROGRAMME : APPARATUS ENGINEERING

NO.	SUBJECTS	SKS	SEMESTER		NOTES
			III	IV	
I.	GENERAL SUBJECTS				
1.	English V	2	2	-	
2.	English VI	2	-	2	
3.	Maintenance Management II	2	2	-	
	SUB TOTAL	6	4	2	
II.	BASIC KNOWLEDGE / SKILLS				
4.	Electronics III	2	2	-	
5.	Power Supply, Safety Engineering and Fire Prevention II	2	2	-	
6.	Film Technics	2	-	2	
7.	Computer Programming	2	-	2	
	SUB TOTAL	8	4	4	
III.	SKILLS				
8.	Animation Technics	2	-	2	
9.	Digital Video Effects	2	2	-	
10.	Matching and Arrangement Technics III	2	2	-	
11.	OB and Studio Equipment Planning Technics	2	2	-	
12.	Broadcasting Station Equipment Planning	2	-	2	
13.	Acoustics II	2	-	2	
14.	Practice V	4	4	-	
15.	Practice VI	6	-	6	
	SUB TOTAL	22	10	12	
	TOTAL	36	18	18	

(3) Operational Plans

1) Plans for the Use of Classrooms

At the MMTC at present, there are 12 classrooms, of which eight are allocated to be used as the "home rooms" for the eight courses currently conducted as of 1990.

However, when the number of courses will have been increased to 14, it will be necessary to discard the idea of "home rooms" and, instead, adopt the method of allocating the classrooms each time the need arises.

In the above-mentioned case, effective use of classrooms is considered as adequately feasible by efficiently using the joint lecture room, the language laboratory and the programme-production training room, all of which are to be newly provided, and thereby allocating the rooms in such a way as to suit the actual conditions.

For reference purposes, a rough simulation has been conducted concerning the allocation of classrooms. The results of this simulation are shown in Table 3-3-5. As can be seen from this table, an efficient allocation of the classrooms is quite feasible, even though the usage rate would be as high as 95% for the existing 12 classrooms.

The premises for the said simulation are as follows. In any case, it is desirable that an even more detailed operational plan be drawn up for the use of the classrooms.

Premises of the Simulation

- a) A total of 14 courses will be conducted for 216 trainees, as follows: five DI courses ($24 \text{ trainees} \times 5 \text{ courses} = 120 \text{ persons}$), six DII courses ($12 \text{ trainees} \times 6 \text{ courses} = 72 \text{ persons}$) and three DIII courses ($8 \text{ trainees} \times 3 \text{ courses} = 24 \text{ persons}$), respectively.
- b) As for the execution plan for the joint lectures of general subjects and practical training, it is assumed that the method currently adopted is to be used as it is and that, for the new courses, too, a method similar to the one currently adopted in running the similar types of courses is to be used.

- c) For a joint lecture given to an audience of more than 24 persons, the joint lecture room to be newly provided will be used.
- d) For an English class, the language laboratory to be newly provided will be used in principle. However, this has been excluded from the simulation, since the English classes are conducted within the same time periods as those given in Table 3-3-7. This question will be discussed later in item 2).
- e) Of the various practical training courses, the DII programme/news scriptwriting and the DIII scriptwriting courses will in principle be conducted in the classrooms.
- f) Among the practical training courses, with regard to the DI programme compilation and the DII programme planning, classrooms will be allocated to them for preparatory work and preparation of materials, since the participating trainees are taking part in the programme-production training and also because they are to participate in practical training outside MMTC at RRI and TVRI and in audience surveys.
- g) The practical training in programme production will be conducted at studios or other facilities, participated in by all of the participants in related courses who divide themselves into groups (two groups each for radio and TV are assumed). In this case, for such work as preliminary consultations and preparations, discussions, evaluations and preparation of reports, the programme-production training room (which can be partitioned into three room), which is to be newly provided, will be used effectively and, in addition, one classroom will be allocated as well.
- h) As for the practical training in the transmission technology courses of DI and DII, it will be conducted in a practical-training room instead of allocating a classroom specifically for that purpose.

Table 3-3-5 Simulation of Classroom Allocation

Course	Programme Study	93/94 Course Number (Number of persons)	1st Semester							2nd Semester										
			Mon	Tue	Wed	Thu	Fri	Sat	Mon	Tue	Wed	Thu	Fri	Sat						
D I	1 Programme Compilation Planning	24			101		PT													
	2 Programme Lines Production	24			102		PT													
	3 News and Current Affairs Reporting	24			103		PT													
	4 Studio and Master Control Technical Operation	24			104		PT													
	5 Transmission Operation	24			105		PT													
			Religion JLR 44C.R. (Islam 100 persons) State Ideology JLR (24 x 5 = 120) RRI,TVRI MMTC Studio C.R.101 Indonesian JLR (24 x 5 = 120) Production Practice C.R. 102,103,104,105. L- T.R.							Survey II JLR (24 x 4 = 96) RRI,TVRI,POSBGIRO. MMTC Studio Practice C.R. 101 Production Practice Studio C.R. 102,103,104,105. L- T.R.										
D II	1 Broadcasting Programme Planning	12																		
	2 Programme Package Production	12																		
	3 Script/Storywriting	12																		
	4 Broadcasting Journalism	12																		
	5 Studio Production Technics	12																		
	6 Transmission Technics	12																		
			T.R. Script Practice C.R. Survey II JLR (12 x 5 = 60) Production Practice Studio, PPTR. 3 + C.R. 202							T.R. Civics JLR (12 x 5 = 60) Script Practice C.R. Production Practice Studio PPTR. 3 + C.R. 202										
D III	1 Educational and Religious Programme Production	8																		
	2 Scenario and Storyboard Writing	8																		
	3 Apparatus Engineering	8																		
			T.R. Script Practice C.R. Survey II JLR (12 x 5 = 60) Production Practice Studio, PPTR. 3 + C.R. 202							T.R. Writing Practice C.R. Production Practice Studio, PPTR. 3										
	Classroom to be vacant for one day or more		106							106										
			101 105 106							101 105 106										

NOTE : JLR : Joint Lecture Room
 PPTR : Programme Production Training Room
 C.R. : Classroom
 PT : Practice
 T.R. : Training Room

2) Plans for Use of Joint Lecture Room

The Joint Lecture Room is scheduled to be constructed for the purpose of being used for conducting joint lectures on such subjects as the general subjects for a large number of trainees at one time. It is so planned as to enable audio-visual education as well, by providing such sophisticated types of AV equipment as a video projector.

The primary objective of use of the Joint Lecture Room is to allocate it for use by a large number of trainees (24 persons or more). The second objective of use of this room envisaged is to use it efficiently as a large classroom equipped with the latest type of AV devices; for example, giving evaluation and guidance on the radio and TV programmes to be produced as a result of the practical training in programme production, guided-auditioning of teaching-material programmes, and developing and using AV equipment to substantiate what are verbally explained in general lectures. For that reason, there is the need of conducting elaborate operation and management of this Joint Lecture Room.

3) Plans for the Use of the Language Laboratory

The curriculums for the Diploma Courses aim at ensuring that education in the English language is conducted in all the training courses so that the trainees may attain a practical level in the use of English in each of their specialized professional fields. Hence, it is expected that the Language Laboratory (maximum capacity: 24 persons) equipped with an LL system will be made positive use of.

The following is the outcome of a study made as to whether or not it would be possible to teach English individually to all the classes of the Diploma Course in the Language Laboratory.

In making this study, it was taken as a premise that the number of times this LL classroom can be used per day and per week would be 3 times a day (two 50-minute classes each time) from Monday through Thursday and twice on Saturdays. As this would mean that the LL classroom can be used a total of 16 times a week, it would theoretically be possible for a total of 14 classes to use the room individually. In actual practice, however, the demands for use of the room would inevitably be concentrated if the time-tables for joint lectures and practical training were taken into



account. (Refer to Table 3-3-8 which gives an example of the result of a study made on the possible allocation of the Language Laboratory.) From the above, the following conclusions may be drawn about the method of language education.

- ① To conduct the class, for example, in an ordinary classroom during the first 50 minutes and in the LL classroom during the next 50 minutes, according to the progress of study in each class.
- ② To use the LL classroom jointly, in the case of the smaller classes of DII or DIII courses.
- ③ To use the LL classroom during the hours outside those hours anticipated.

So, there is the need of choosing from among various methods, such as those mentioned above as examples, the method that is likely to prove most effective by applying it in the way that is suited to the actual circumstances including the contents of the subjects, the preference of the lecturer concerned and the relations with other lectures.

Table 3-3-6 Example of Possible Allocation of the Language Laboratory

	Semester I						Semester II					
	Mon	Tue	Wed	Thu	Fri	Sat	Mon	Tue	Wed	Thu	Fri	Sat
Possible number of use	3	3	3	3	2	2	3	3	3	3	2	2
D I	■	■	← 5 classes →		■	■	← 6 classes →			← 5 classes →		■
D II	← 3 classes →			← 6 classes →			← 6 classes →			← 3 classes →		
D III	← 3 classes →										← 3 classes →	

 Practice
 Joint lecture

Under the conditions anticipated, the use of the LL classroom would be concentrated.

4) Plans for Use of Various Practical-training facilities

While various types of facilities and equipment for practical-training use are to be provided under this project, it is proposed that these should be used in such a way as to reinforce the entire Diploma Training Courses by drawing up overall plans for use of the training facilities and equipment owned by MMTC, since the existing and the newly-provided facilities and equipment are all mutually related.

With regard to the overall plans for the use of the facilities and equipment being newly provided under this project, as well as the existing ones, a comprehensive examination has been made from the points of view of those concerned at MMTC and the JICA experts and taking into account the current condition of use of such training facilities and equipment at MMTC. The results of the examination are shown in Table 3-3-7.

Table 3-3-7 Plans for the Use of Facilities and Equipment at the MMTC (Part 1)

Facilities and Equipment	Courses		D I						D II				D III			Remarks			
	Existing	Newly installed	Programme Planning	Programme Lines	Production	News and Current Affairs Reporting	Studio and Master Control	Technical Operation	Transmission Operation	Broadcasting Planning	Programme Package Production	Script/Story Writing	Broadcasting Journalism	Studio Production Technics	Transmission Technics		Educational and Religious Programme Production	Scenario and Storyboard Writing	Apparatus Engineering
1. TV Studio																			
TV Studio -1 (sub-control, etc.)	●		○	⊗	○	○	⊗	○	○	○	○	○	○	⊗		⊗	○	⊗	
TV Studio -2 (sub-control, etc.)		●	○	⊗	○	⊗	○	○	○	○	○	○	○	⊗		⊗	○	⊗	
2. TV master control room (incl. continuity studio)	●		○	○	○	○	⊗	○	○	○	○	○	○	○		○	○	○	
3. Telecine room	●		○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	
Telecine/FSS equipment	●		○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	
4. VTR room	●		○	⊗	○	⊗	○	○	○	○	○	○	○	⊗		○	○	○	
1" VTR system	●		○	○	○	○	⊗	○	○	○	○	○	○	○		○	○	○	
3/4" VTR, Betacam editor	●		○	⊗	○	⊗	○	○	○	○	○	○	○	○		○	○	○	
5. Post-production room		●								⊗			⊗			○	○	○	
Post-production system		●								⊗			⊗			○	○	○	
6. Video editing room		●								⊗			⊗			○	○	○	
Betacam editor		●								⊗			⊗			○	○	○	
7. ENG-equipment maintenance room		●																	
ENG camera, VTR	●		○	⊗	○	⊗	○	○	○	○	○	○	○	○		○	○	○	
ENG Betacam	●		○	⊗	○	⊗	○	○	○	○	○	○	○	○		○	○	○	

Table 3-3-7 Plans for the Use of Facilities and Equipment at the MMTC (Part 2)

Facilities and Equipment	Courses		D I						D II						D III			Remarks
	Existing	Newly installed	Programme Planning	Programme Lines Production	News and Current Affairs Reporting	Studio and Master Control Technical Operation	Transmission Operation	Broadcasting Planning	Programme Package Production	Script/Story Writing	Broadcasting Journalism	Studio Production Techniques	Transmission Techniques	Educational and Religious Programme Production	Scenario and Storyboard Writing	Apparatus Engineering		
8. Radio studio																		
Radio studio -1 (sub-control, etc.)	●		○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Radio studio -2 (sub-control, etc.)		●																
9. Radio master control room (incl. continuity studio)	●		○	○	○	○	○	○	○	○	○	○	○	○	○	○		
10. Tape editing room	●		○	○	○	○	○	○	○	○	○	○	○	○	○	○		
11. TV OB van	●		○	○	○	○	○	○	○	○	○	○	○	○	○	○		
12. Radio OB van	●		○	○	○	○	○	○	○	○	○	○	○	○	○	○		
13. Programme-production training room		●	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
14. Electric engineering training room	●																	
15. Electronics training room		●																
16. Electric power training room		●																
17. Radio frequency training room		●																
18. Transmitter training room	●																	

3-3-3 Location and Condition of the Project Site

(1) Location

The project site is located in the premises of MMTC, which is in the Sleman district in the northeast of Yogyakarta. The premises are located along the Magelang Road which is a main highway linking Yogyakarta to Semarang. Located in the suburbs of Yogyakarta 6km north of the palace, the project site enjoys a most convenient geographical position from the point of access. Although a railway of the Indonesian National Railways runs along the Magelang Road, it is not used at present. So, the means of transportation to access this site is by motorbike, bicycle, bus or private car.

(2) Condition of the Site and the Existing Facilities

The premises have a total area of 75,000m² comprising a 37,515m² roughly rectangular-shaped piece of land of about 200m in width × 180m in depth facing the Magelang Road, a plot of 6,300m² lying to the north of the above-mentioned land and the irregular-shaped plot of 31,947m² located to the west across a farm road.

On the premises facing the Magelang Road stand such buildings as an auditorium, a library and a canteen, all of which have been constructed by the Indonesian side, as well as the existing training facilities which were constructed with Japan's grant aid cooperation and delivered to the Government of Indonesia in June 1984. The outline of the main facilities existing on the project site is as stated in Table 3-3-8. The group of facilities are built in a cluster on the flatland occupying the northern half of the premises. The southern side of the premises is about 1m lower in elevation and is currently used as a playing field. Since rainwater flows into this portion of the land, the playing field is unusable during the rainy seasons. There are a total of three gates into the premises, viz., two along the Magelang Road and one along the farm road. For ordinary access to the premises, the northeastern gate where the guardhouse stands is used. Except for the three gates, the premises are surrounded either by a fence or a concrete-block wall about 2m high. On the Magelang Road side is located a parking lot with a capacity of about 45 cars and, therefore, there is no need of newly constructing a parking area.

Table 3-3-8 Outline of Main Facilities

Buildings	Structure / scale	Total Area	Remarks
Existing training facilities	Reinforced concrete, 2-storied	5,495m ²	
Auditorium	Reinforced concrete, 2-storied	929m ²	Max. capacity: 450 seats
Library	Reinforced concrete, 2-storied	619m ²	Open-shelf reading room: seating 75
Canteen	Reinforced concrete, single-storied	570m ²	Max. seating: 200

Along the Magelang Road and on the northern side of the premises is a plot of L-shaped land which is currently used as farmland. In case any training facilities for other than radio or TV are to be constructed in the future, the above-mentioned plot seems to be appropriate. During the construction work under this project, this plot can be used as a stockyard for the construction materials as well as a space for a temporary road and office. On the premises along a farm road stand such facilities as trainee dormitories (two 4-storied reinforced concrete buildings each for men and women), a staff dormitory (a 2-storied reinforced concrete building) and staff residences (four single-storied buildings), totaling about 3,800m² in area. This site still has space for the construction of additional buildings and, therefore, it is possible to construct more dormitory buildings to cope with any increase in the number of trainees in the future.

(3) Examination of the construction site

In a westerly direction from the existing studio building, there is a site of vacant flatlands of about 70m × 45m in area. Considering the convenience of liaison with the existing facilities and that of connections with electric power, broadcasting signals, etc., the above-mentioned site is the most suitable as the construction site for the proposed facilities.

(4) Soil Conditions

The soil characteristics of the premises are uniform and stable. Immediately under the surface soil is a sandy clay layer with a depth of 1.5-2.0m, beneath which is a sandy gravel layer. Within the sandy clay

layer are scattered a number of volcanic rocks each with a diameter of about 1m. So, it is necessary to be specially cautious when digging the ground.

No underground water has been confirmed down to 5.0m below the ground surface.

(5) Environment

Although the volume of traffic is quite large on the Magelang Road on the eastern side of the project site, there is no particular need of taking insulation measures against noise, since the existing training facilities are playing the role of a buffer zone. Besides, since the greater part of the surroundings consists of farmland, there is no major factor that contributes to the degradation of the environmental conditions.

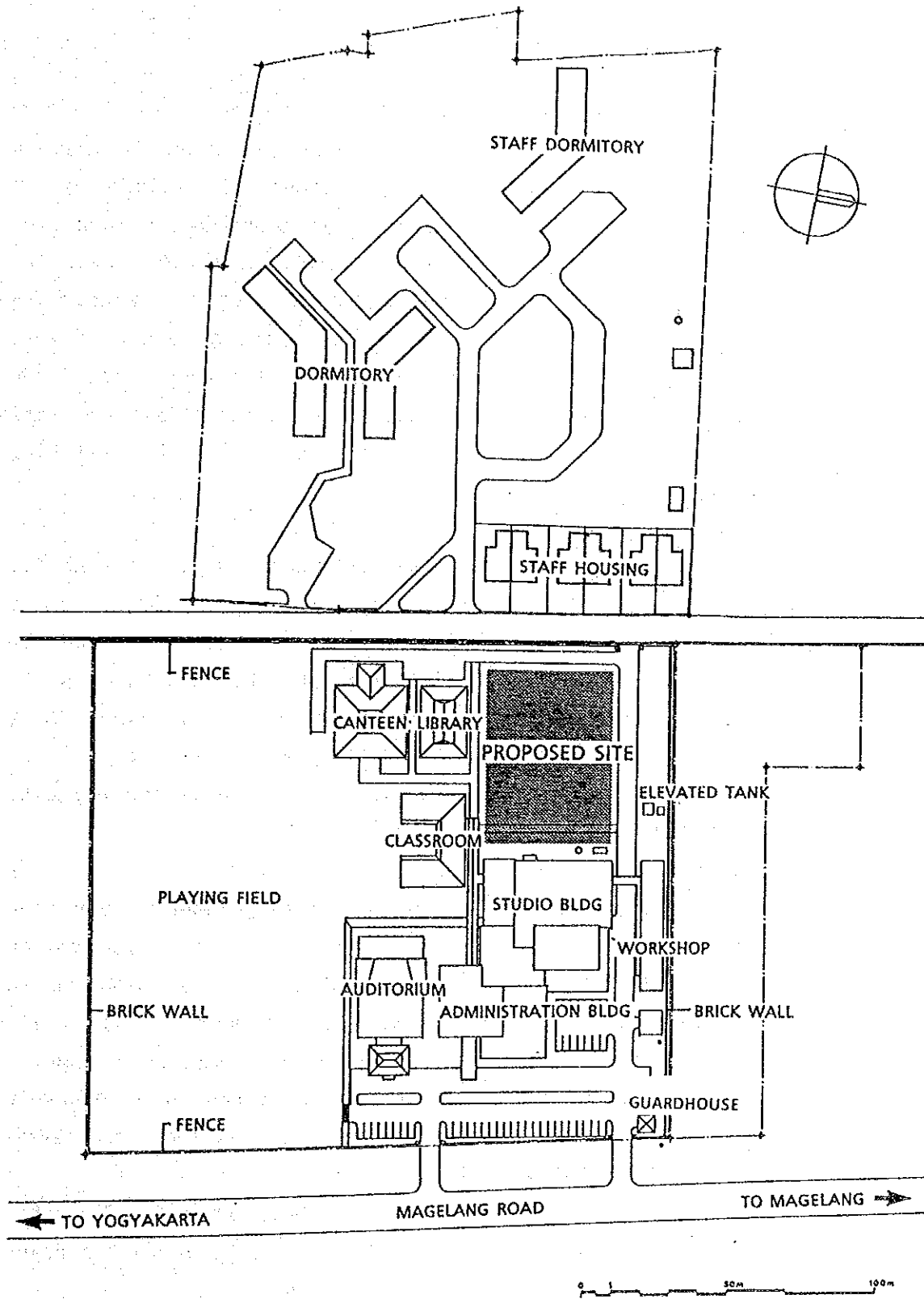


Fig. 3-3-3 Condition of the Project Site

(6) Infrastructure

1) Electric Power

Along the Magelang Road 22kV overhead electric lines of the PLN (Perusahaan Listrik Negara) are installed and electricity is drawn via the lead-in pole erected in the northeastern corner of the site and through the overhead wire into the existing substation room. The power-receiving capacity of the existing transformer is 1,250kVA and there is a margin of about 400kVA. As to the general condition of power supply at present, there are power failures at the rate of about twice a month but they are not as bad as to obstruct the operation of the existing facilities.

2) Telephone

Along the Magelang Road, overhead telephone lines of the PTT (Perusahaan umum Telekomunikasi) are installed and the line is drawn via the lead-in pole erected in the northeastern corner of the site and through the overhead wire into the PABX room on the ground floor of the existing office building. At present, 5 service lines (Central Office Line (COL)) and 30 extension lines are used on this site. It is possible to increase the capacity of existing PABX.

3) Water supply

The city of Yogyakarta at present has no city-water supply plan and citizens are using well water as service water. The volume of water supply from the existing deep well on the site varies somewhat by season, wet or dry, but it is possible to obtain service water from this deep well up to a maximum of 12m³/hour. The water pumped up from the deep well is stored in a reservoir tank (60m³) and then is pumped up into an elevated tank (20m³) before being distributed to the facilities.

Under the ground of the project site, there is the main water pipe to the existing library and canteen. So, prior to the start of construction work, it is necessary to remove it.

4) Sewerage

As there is no public sewerage around the project site, a septic tank is installed at each building so that the wastewater and sewage may be made to permeate the ground after having been given disposal treatment. As to the rainwater, all the water within the site is gathered by a drain-ditch and is released into the waterway for farm use on the western side of the site.

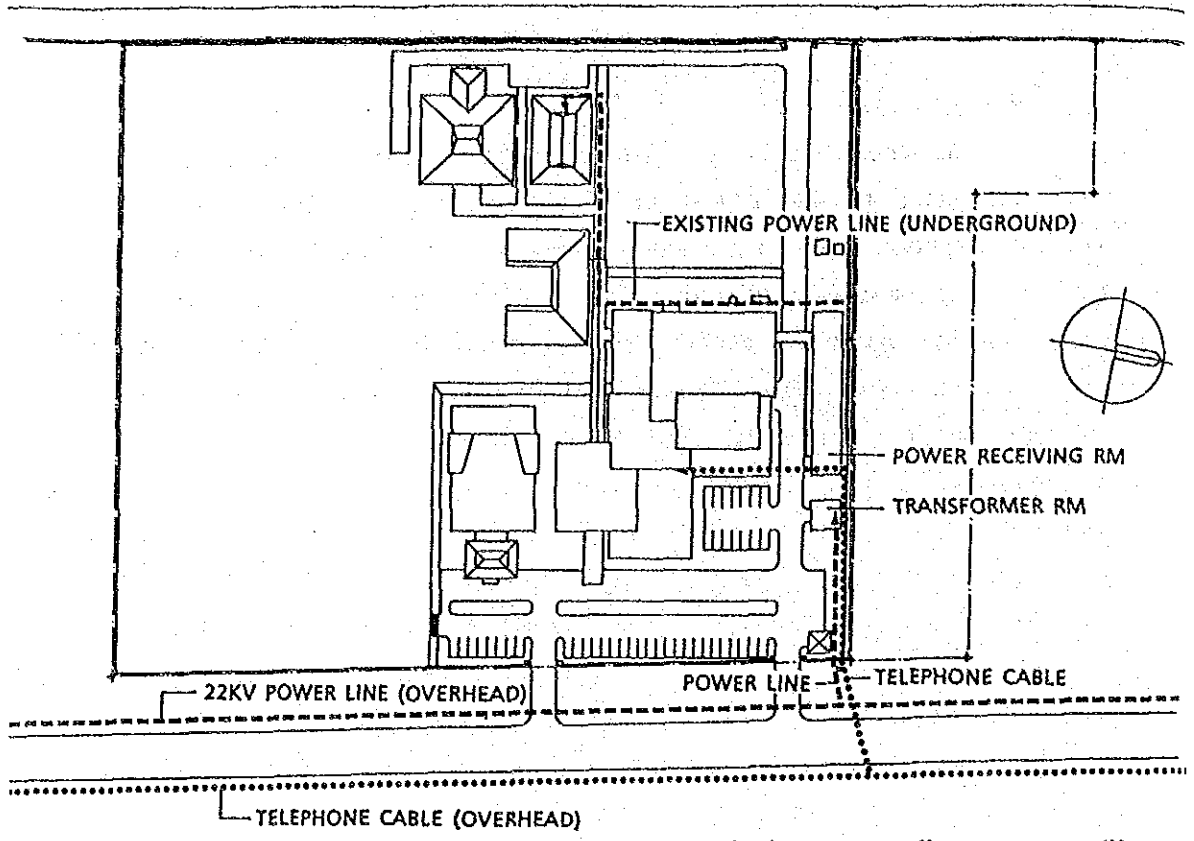


Fig. 3-3-4

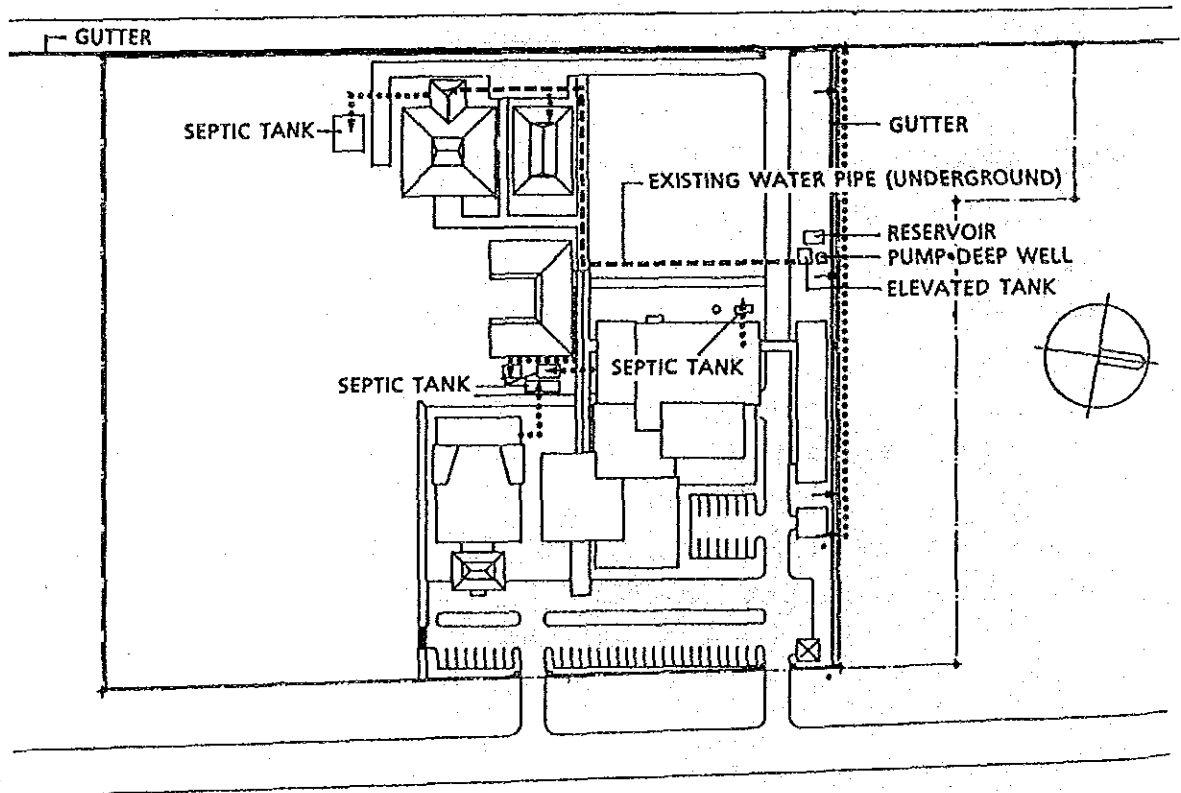


Fig. 3-3-5

3-3-4 Outline of the Facilities and Equipment

This reinforcement project is based on the training scale envisaged for 1993/94 when 14 Diploma Courses are to be conducted, and aims at improving and expanding the installations and equipment required in strengthening the entire Diploma Course along with the reinforcing of the existing training facilities. In designing the facilities and equipment, the following three basic policies have been adopted in addition to the fulfillment of such preconditions as the matching of the new facilities and equipment with the existing ones and the combined use of both the new and the existing facilities.

1) Enrichment of Audio-visual Education

The existing facilities lack full-scale equipment for use in auditioning the programmes or the works produced and, as a result, there is an inadequacy in the functions for programme appreciation, evaluation or analysis. By connecting the new audio-visual functions with the existing master-control room, transmission of various types of educational media becomes feasible and, consequently, expectations may be placed on the enrichment of not only the practical training in programme production but also of audio-visual education.

2) Acquisition of New Techniques in Programme Production

MMTC, because of its being also a practical training institution directly linked with workplaces, strongly desires to further augment the contents of the facilities and equipment that are required in meeting the wishes of the contemporary broadcasting stations to enhance the level of the programme-production techniques of their personnel. So, in conducting the basic designing, MMTC's request will be borne in mind and every effort will be made to assist in further improving and expanding MMTC's training facilities and equipment which are most essential in developing high-level technological strength and broad applicative ability of the broadcasting personnel, such as post-production techniques, and which are directly linked with the workplaces.

3) Augmentation of Basic Learning Equipment

The existing facilities lack the basic practical-training facilities and equipment necessary for acquisition of techniques in electronics, communications and electricity, with the result that adequate training cannot be given in these fields. So, with the aim of enhancing the efficiency in practical training and the contents of training, special efforts will be made to promote quantitative improvement by setting the standards for specifications of the training equipment to be adopted.

Table 3-3-9 Outline of Main Facilities and Equipment to be Provided Under the Project

Names & Functions of the Rooms	Outline of Contents and Scale	Names of Main Equipment	Objectives of Use
1. Joint Lecture Room Connected by lines with the master control room	136 m ² seating 120 persons	200-inch video projector	As a large classroom seating 120 persons, this room will be used not only for joint lectures but also as an audio-visual room for use by classes employing audio-visual teaching materials and as a video theatre for use in conducting such activities as appreciation, evaluation and analysis, as well as auditioning of video programmes.
2. Programme Production Training Room Can also be used as three small rooms by partitioning with sound-insulation curtains	78 m ²	Non-Professional VTRs for playback use only, monitors, etc.	To be used for such activities as scriptwriting, consultations about direction, preparations for production and coverage, meetings, lectures and rehearsals by small groups, and auditioning of videocassette recordings.
3. Language Laboratory (LL classroom)	52 m ² seating 24	LL system	Using an LL system, practical training can be given in language study to a group of a maximum of 24 persons (D I course)
4. TV Studio Separated with a curtain from the adjoining post-production room	215 m ² Studio 123 m ² Sub-control room 60 m ² Storeroom 32 m ²	ENG-type video camera, studio lighting, ½ inch VTR, etc.	A small and compact TV studio fit for production of such news programmes as a news show or a dialogue programme; aims at a well-coordinated and functional use.
5. Radio Studio With plenty of space for the convenience of conducting practical training	102 m ² Studio 50 m ² Sub-control room 52 m ²	Audio-mixer, tape-recorder, CD player, cassette-tape player, audio-dubbing system, etc.	A small studio for production of talk programmes. Here, complete programmes will be produced by processing sounds in various ways or enhancing the fullness of programmes by, for instance, adding special sound effects. Audio-dubbing is also feasible in this studio.

Names & Functions of the Rooms	Outline of Contents and Scale	Names of Main Equipment	Objectives of Use
<p>6. Post-production Room</p> <p>Equipped with facilities to edit the recorded tapes, inset letters, give special processing to video and audio or to rectify images.</p>	<p>60 m²</p>	<p>½-inch VTR, editor, switcher, etc.</p>	<p>To conduct detailed editing based on a large number of videotaped materials; to produce a complete programme on tape by enhancing perfection through various video processing.</p>
<p>7. Video Editing Room</p> <p>With editing equipment for ½-inch video-cassette tapes</p>	<p>58 m²</p> <p>Five editing booths. The opening of the booth has a space for a meeting of 3-4 persons.</p>	<p>Video editing equipment, etc.</p>	<p>This room will be used for practical training in news-editing work in general, including basic training in video editing using VTR materials.</p>
<p>8. ENG Equipment Maintenance Room</p> <p>Equipped with installations for maintenance and repair of various types of ENG cameras.</p> <p>Battery maintenance facilities</p> <p>Storage space for ENG-related equipment</p>	<p>52 m²</p> <p>Maintenance table, equipment storage shelves and lockers</p>	<p>ENG camera with built-in VTR.</p> <p>Battery charger, etc.</p>	<p>Equipped with installations and tools for use in ensuring efficient operation and maintenance of ENG cameras and VTRs, this room is used for management and storage of ENG equipment including accessories and auxiliary equipment.</p>
<p>9. Electronics Training Room</p> <p>With training facilities for electronic circuitry and applied technologies</p>	<p>78 m²</p> <p>Practical-training console</p> <p>Selves and lockers for storage of practical-training equipment</p>	<p>Various types of electronic circuits, logic circuit boards and panels, measuring instruments, etc.</p>	<p>Using system boards and panels, practical training will be conducted in this room in various subjects ranging from the basics to applied technologies.</p>

Names & Functions of the Rooms	Outline of Contents and Scale	Names of Main Equipment	Objectives of Use
10. Radio Frequency Training Room	78 m ² One transmitter set Practical-training table Selves and lockers for storage of measuring instruments	VHF TV transmitter (1kW) Antenna and receiver for receiving transmissions from the PALAPA satellite Microwave experiment set Spectrum analyzer Measuring instruments including six Basic Oscillator Training Kits	Theoretical studies of such subjects as VHF and microwave signals and practical training in reception of PALAPA satellite broadcasts, in VHF transmission technology and in the measurement of transmissions and receptions.
11. Electric Power Training Room Equipped with diesel-engine generator AC/DC motors	78 m ² Facilities for practical training in generating or receiving power of 3-5kVA, 3-phase, 220V, 50Hz	Diesel-engine-driven generator Power-distribution console, transformer, AC/DC motors, etc.	Practical training in the basics and operations concerning power-source installations, generators and power supply.
12. Videotape Storeroom	20 m ²	Lockers and shelves	For storage of such materials as ENG cassette tapes and programme-material tapes to be edited.

3-3-5 Maintenance and Management Plans

(1) Maintenance and Management of Equipment

As mentioned in 3-2-2 (1) 2), the current total of 19 personnel is quite sufficient as the number in charge of the maintenance and management of equipment at MMTC. In fact, MMTC has no plan to increase this number. The transition of the annual expenses for the repairing of equipment is as shown in Table 3-3-10.

Table 3-3-10 Transition of Repairing Expenses

	1986/87	1987/88	1988/89	1989/90
Ⓐ Budget	29,900,000	29,900,000	29,900,000	48,400,000
Ⓑ Expenses	24,175,000	21,000,000	31,839,085	51,381,515
Ⓐ - Ⓑ	5,725,000	8,900,000	- 1,939,085	- 2,981,515

Unit: Rupiah

As can be seen from Table 3-3-10, the expenditure of repairing expenses fluctuates each year. Both fiscal years 1988/89 and 1989/90 show a deficit with regard to this item of expenditure, but there is no problem because, when in deficit, the shortage is covered by the Ministry of Information. Therefore, as far as the budget is concerned, the amount currently allocated seems to be quite appropriate.

The average number of years for which depreciation needs to be estimated is about ten years, although it differs according to the type of broadcasting equipment. As to the period of time after which an item of equipment requires renewal, some say that it is ten years after the equipment is first put to use. However, in the case of broadcasting equipment, obsolescence comes quicker as a result of the advent of equipment with new specifications, rather than as a result of the aging of the equipment itself. Therefore, it is considered that the need for renewal of broadcasting equipment may occur in less than ten years, possibly in about seven years, after its initial installation.

(2) Electricity Charges

The electricity charge consists of the Basic Charge (Rp. 3160/kVA) and Usage Charge (Rp. 68/kVWH). Since the contract power of 1,100kVA remains unchanged, the Basic Charge is a fixed amount. The Usage Charge can be obtained by the following formula:

$$280\text{kVA} \times 8\text{h/day} \times 0.8(\text{usage rate}) \times 280\text{day/year} \times \text{Rp.}68/\text{kWH} = \text{Rp.}34,119,680$$

<note> The current consumption of electricity by MMTC is planned to be reduced to 750kVA so that, even with the additional consumption of 280kVA as a result of implementation of this project, the total is expected to be not more than 1,030kVA. Therefore, there will be no need of changing the present power-supply contract.

(3) Water Service Charges

Since MMTC uses the deep well located on the premises, there is no expenditure for water service.

(4) Sewerage Charges

Since MMTC uses a septic tank set up on the premises to dispose of wastewater and let it seep into the ground, there is no expenditure for sewerage.

(5) Plans to Secure Personnel

Twenty-five candidates for positions as instructors have already been employed. So, there is the need of employing 11 persons to take charge of work relating to instruction. Although MMTC currently has no detailed plan for an increase in the number of personnel, MMTC employed 25 persons in 1990 and therefore an increase of 11 persons would not be so difficult.

(6) Budget

The total amount of budget required in implementing this project may be estimated as follows.

As to the development budget, an amount of 1,888,825,000 rupiahs can be estimated. For 1993/94, MMTC estimates the annual expenses per course as follows:

DI Course	Rp. 177,200,000
DII, DIII Courses	Rp. 111,425,000

Since DIII courses are scheduled to be conducted, a calculation based on the above-quoted unit cost would bring the total to 1,888,825,000 rupiahs as mentioned above.

The amount of the ordinary budget, on the other hand, can be considered to be proportionate to the number of staff members. In 1993/94, the amount of ordinary budget will be 33.6% more than that of the current fiscal year, since, as a result of implementation of this project, the number of staff members will be increased by 36 from 107 in 1990. Consequently, the ordinary budget for 1993/94 can be estimated to total Rp. 842,430,000 (Rp. 630,562,000 × 1.336). About the budget, an explanation has also been given in 3-2-2 (2).

3-4 Technical Cooperation

The outline of the technical cooperation currently in progress is as follows:

[Title of the project]

Radio and Television Training Centre

- Signing Dates of R/D, etc. : October 21, 1983
(Extension) August 8, 1988
- Period of Cooperation : From October 21, 1983 to October 20, 1988
(Extension) From October 21, 1988 to October 20, 1990
- Location of the Centre : Yogyakarta
- Organizations Concerned on the Indonesian Side : Ministry of Information Multi-Media Training Centre (MMTC)
- Cooperating Organizations on the Japanese Side : Ministry of Posts and Telecommunications
Nippon Hoso Kyokai (NHK)
- Background of the Request : The Republic of Indonesia, which plans to expand its radio and television networks, is currently facing the problem of a shortage of human resources required in carrying out the expansion plan smoothly. In view of the urgent need of educating and training the required broadcasting personnel, the Indonesian side drew up a plan to train the personnel who are to engage in the broadcasting services and, at the same time, planned the establishment of a training centre and requested Japan to provide technical cooperation in executing their plan.
- Objectives and Contents : The technical cooperation has the following three objectives:
(1) Education and training of MMTC's instructors
(2) Cooperation in the development of curriculums

(3) Cooperation in the development of teaching materials

The contents of work to be undertaken by the technical-cooperation experts are; to educate and train the MMTC's instructors, to conduct technological transfers through individual guidances given to MMTC's staff members and to give guidance in the management and operation of MMTC and in the development of curriculums and teaching materials, so as to contribute eventually to the development of MMTC.

Current Status

: The Centre has already conducted the DI courses for five years and, as from 1989/90, it has been conducting five DI courses in full. As for the DII courses, the Centre has carried out three of the total eight courses during 1989/90 and the beginning of 1990/91.

Sending from Japan of Experts and Trainers, and Provision of Equipment

Fiscal year	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	Total
Long-term	4 long-term	7	7	10	12	9	6	51
Short-term	researchers	2	3	3	6	3	9	30
Trainers	4	5	4	5	5	5	5	33
Equipment (in million yen)	0	23	160	97	25	20	62	387

The present Project is an expansion of the above-mentioned project and is inseparably related to the latter.

Furthermore, as discussed in 3-2-5, in carrying out this project, the extension of the technical cooperation under the above-mentioned on-going project is essential.

CHAPTER 4 Basic Design

CHAPTER 4 Basic Design

4-1 Design Policy

The objective of the Project is to strengthen and reinforce the existing training facilities and to ensure smooth execution of the three Diploma Courses. The functions required of the proposed facilities are to supplement those which the existing facilities lack in implementing the training plans. Specifically, the following three may be mentioned; (i) the enrichment of audio-visual education, (ii) coping with the new technologies in programme production and (iii) augmentation of the contents of basic practical training.

In realizing these functions in a concrete form, the following will be emphasized as the basic policies:

(1) To Ensure Combined Use of the New and the Existing Training Facilities

The proposed training facilities shall be those which do not overlap with the existing training facilities. Both facilities, the existing and the proposed, play a mutually supplementary role. Therefore, architecturally, the proposed facilities shall be of a structure that enables organic use of the entire facilities; that is, not only securing easy flow of Men and Materials but also ensuring mutual linking of training equipment installed at the existing and the proposed facilities.

Furthermore, in terms of environment and landscape, the layout plan will be so designed as to give due consideration to the fact that the existing group of facilities is already forming a fine environment.

(2) To Ensure Matching with the Existing Training Facilities

The levels of technical grades of various aspects of the proposed training facilities, such as the finish of the building and acoustic performance, shall be about the same as those of the existing training facilities.

(3) To Make the Plan Conform with the Characteristics of a Broadcast Training Centre

Each room of the proposed facilities is required to meet different spatial, temperature, humidity and acoustic conditions according to the room's objective of use and the type of equipment installed in it. So, efforts will be made to ensure that materials and construction method suited to the conditions of each room will be selected and that the

facilities thus constructed will enable effective training of personnel. However, the construction of unnecessarily sophisticated types of facilities or the introduction of unnecessarily high-performance equipment will be avoided, considering the fact that what are being proposed are facilities to be used exclusively for the training of personnel and are not to be used for the production of programmes for actual broadcast use.

(4) To Reduce the Maintenance and Operation Cost for the Facilities and Equipment

The construction materials and methods for the new buildings will be those that ensure durability and low maintenance and operation costs. In selecting the training equipment, consideration will be given to the maintenance ability of the in-house staff and also to the availability of the maintenance system of local agents of the manufacturers concerned. Generally speaking, the life of training equipment is short compared with that of buildings. Consequently, there is the need to provide a way to replace or renew the equipment without repairing buildings.

(5) To Design Facilities Suitable to the Local Environment

The building will be designed to be compatible with the local climatic conditions. At the same time, the building will be designed to harmonize with the landscape of the ancient city of Yogyakarta.

4-2 Analysis of Design Criteria

In conducting the basic design, the following items will be analyzed carefully as the design criteria.

(1) Analysis of Natural Conditions

By designing the facilities in such a way as to conform with the local natural conditions, the durability of the facilities can be enhanced, good living conditions can be secured and the maintenance and operation costs can be reduced. For the basic design, particular attention will be paid to the following natural conditions.

1) Sunlight and Temperature

The city of Yogyakarta is located in the central part of the island of Java, at latitude 7°45' south, and belongs to the tropical climate zone. Temperature varies very little throughout the year, the average temperature being about 27°C. Even though the city is located in the inland region, it lies comparatively high at 116m above sea level and its temperature is a bit lower than that of the coastal areas. Sunlight during the dry season is strong and, also because the sun is high, there is the need to install heat insulation on the roofs of the buildings.

2) Rain

The dry season is from May to October and the wet season from November to April. The annual precipitation totals about 1,700mm, of which 90% is concentrated in the wet season. Such rains are squalls that pour heavily during a short period; there are no rain storms that are accompanied by strong winds.

3) Wind

Throughout the year, soft winds keep on blowing from west and southwest. The wind velocity is about 15m at most and there is no particular need to cope with strong winds.

4) Lightning

Because of thunderstorms during the wet season, much damage is caused by lightning. Since many units of electronic equipment will be supplied under the Project, a lightning protection system is absolutely necessary.

5) Earthquakes

Indonesia belongs to a seismic belt that runs along the rim of the Pacific Ocean. Moreover, the island of Java lies in the

volcanic zone that extends to the Himalayas. In the suburbs of Yogyakarta, too, there is an active volcano, and volcanic earthquakes are observed quite often. For that reason, the buildings will be made quake-proof and, at the same time, measures will be taken to prevent the equipment from overturning.

(2) Construction Situation in Indonesia

1) Construction Materials

In Indonesia, much large-scale construction requiring sophisticated construction techniques is going on continuously, and almost all of the construction materials can be procured locally. However, for the supply of such technically advanced products as air conditioning equipment and products that require complicated processing, such as sound-proof doors, Indonesia depends on imports. Use of imported products is also desirable with regard to some of the interior-finish materials, such as flooring and ceiling materials, owing to the unstable quality and supply of the domestic products.

2) Building Regulations

In addition to the PBN (State Regulations on Buildings), established by DPU (Ministry of Public Works), there are considerable kinds of building-related laws and regulations including load restrictions and fire-prevention and safety standards. There also are regulations established independently by the Yogyakarta office of DPU. In implementing the Project, it is necessary to observe all such laws and regulations as mentioned above. The application for building permission will be submitted to the Suleman district office of DPU.

4-3 Basic Plans for Facilities and Equipment

4-3-1 Facilities Layout Plan

(1) Analysis of the Construction Site

As the construction site for the proposed facilities, the vacant plot located on the western side of the existing studio building is most appropriate. This plot had been envisaged, at the time of layout planning of the existing facilities, as the future expansion space for additional film-related facilities. For that reason, on the western side of the existing studio building, there are such installations provided as an exit and a connecting pit for broadcast signals. On the southern side of the vacant plot, there runs an open path to the library and the canteen, and on the northern side runs a premises road of 6m in width. The area available is a plot sandwiched by the above-mentioned walkway and road, with an area of 70m in width by 45m in depth.

(2) Points to be Considered in Planning the Facilities

The entrance portion of the existing classroom building is an open space which is used by the trainees as their lounging space. Furthermore, taking into consideration such environmental conditions as the natural lighting of the tape-editing room in the existing studio building and the natural lighting and ventilation of the library, the new facilities should be kept a certain distance from the existing facilities and the new facilities and the existing facilities will be connected with covered walkways.