2-2-5 Problems Confronting Broadcasting in Indonesia

Ever since the start of radio and TV broadcasting in Indonesia, the government has devoted a great deal of efforts to the development of broadcasting services in order to ensure that broadcasting actively plays the roles assigned to it. As a result, as mentioned in 2-1-2 (2) and (3), a considerable population coverage has already been reached by both radio and TV. In the case of radio, a population coverage of 68% has been attained through 49 stations across the country. And in the case of TV, too, a national population coverage of 68% has been achieved through the network of ten TV stations and 244 transmitting stations.

However, because of its rapid development, the radio and TV broadcasting in Indonesia has been faced by problems as mentioned below in various aspects including broadcast-network facilities, management and operation, programmes and technical management including maintenance.

(1) Composition and Coverage of Broadcasting Network

1) Number of Programme Series

At present, both in radio and TV, two series each of programmes are broadcast in metropolitan Jakarta. However, in the provinces, there is only one series of programmes broadcast, both in radio and TV. This means that the diversified wishes of the audience concerning programmes, especially those of the residents in regions outside Jakarta, are not being met sufficiently.

2) Coverage

Indonesia is a vast archipelago nation consisting of a large number of islands and occupying a wide area. As a result, despite the great efforts made to improve and expand broadcasting networks, the population coverage still remains at about 68% for both radio and TV. The current condition of coverage, therefore, is still quite far from the nationwide service which is the target set by the Indonesian government.

The broadcasts on the radio network are currently conducted through the combined use of medium waves and shortwaves. The

medium wave is used for broadcasting in and around the area in which the station is located, while shortwaves are used for broadcasts to farther inland regions and remote islands. However, because of the unstable reception condition, the range of the area in which broadcasts can be received in good condition is limited. In the case of the 12 regional stations in eastern Indonesia, such as Irian Jaya, they have no medium-wave facilities and therefore are still broadcasting in shortwave only.

On the TV broadcasting network, transmission of programmes of TVRI is conducted via the PALAPA satellite operated by PERUMTEL. TVRI has been promoting the construction of TVRO relay transmitting stations in areas unserved by TV broadcast, but the pace of construction is only an average of five stations a year and so there is still a long way to go before the target of nationwide service is attained.

While it is technically feasible for general TV viewers to receive broadcasts via the PALAPA satellite (See 2-1-2(3) 3), the transmission power of the PALAPA, owing to its originally having been designed as a communication satellite, is so small that the viewers are required to set up an antenna with a large diameter. So, there is a problem in the reception of PALAPA broadcasts because of the cost and other installation conditions. Consequently, numerically, little improvement can be expected in TVRI's coverage by direct reception of broadcasts via the PALAPA satellite.

(2) Programme Production & Programme Compilation, Programme Transmission Network and Business Communication Circuit Network

The radio programmes are produced at 49 stations across the country. As to the programme compilation at the regional stations, 20% of the broadcasting hours are devoted to the relaying of news and information programmes from Jakarta and the remainder to the broadcast of programmes produced by the stations themselves, partly owing to the inadequacies of the programme transmission network as mentioned later on.

As to the transmission circuits for radio programmes, a downward link originating from Jakarta has been established by leasing telephone lines of the PALAPA satellite circuits from PERUMTEL, but owing to poor sound quality and noise interference, good quality transmission of programmes is impossible. For that reason, none of the regional stations is relaying various kinds of cultural and other high-quality programmes produced by the Jakarta station except for news and information programmes.

Meanwhile, since no link-up has been set up yet, instantaneous-exchange broadcasting of programmes, which is one of the excellent functions of broadcasting, is not yet conducted in Indonesia.

The Nusantara stations, which play central roles in their respective regions, have the function of managing the regional stations under their respective jurisdictions. However, none of them has programme transmission circuits linking it with the regional stations. In the past, periodical relays of programmes were conducted on the off-air waves in shortwave but such relaying has seldom been conducted in recent years for such reasons as that there is noise interference from the shortwave bands. Hence, the Nusantara stations are not playing the role of regional key stations as far as broadcasting programmes are concerned.

As to TV, the Jakarta central station broadcasts a National Programme and a Metropolitan Programme. The broadcast hours are about 7 hours a day on weekdays for the former and only about 2.5 hours for the latter. As a result, requests have been made by the TV audience to increase the broadcast hours.

Meanwhile, with regard to the local TV broadcasts, 10 stations across the country are currently conducting 2-3 hours (about 30% of the daily broadcast hours) of local broadcasts. The remainder of the daily broadcast hours is devoted to the relaying of programmes from Jakarta.

As to the transmission of TV programmes, it used to be done through TVRI's own circuits and the standby circuits leased from PERUMTEL in Java and Sumatra. But since the launching of the PALAPA satellite, nationwide relays of programmes have been conducted via the satellite as well, by leasing a transponder. So, at present, combined use is made of the above-

mentioned two ways of programme transmission. Transmission of programmes to the stations outside Java or Sumatra depends primarily on the PALAPA satellite. Under these circumstances, the local TV broadcasts are confined to the service areas of the transmitting stations of the ten programme-producing stations and those relaying stations, to which the programmes of the parent stations are relayed either via TVRI's own circuits or via the off-air waves.

While the downward transmission of TV programmes (from Jakarta) has somehow been established, the upward (to Jakarta) circuits have not yet been set up. So, the simultaneous relaying of regional programmes and programme exchanges, both of which are excellent functions of TV, have not yet been conducted in Indonesia.

As an important circuit network other than the programme transmission circuits, the business communication network is necessary for communications between broadcasting stations. At present, both RRI and TVRI make exclusive use of shortwave SSB equipment for business communications purposes such as the sending of news scripts and the making of technical contacts. There is no other method of inter-station communication that can be relied on, except for the subscription telephone, telegram and mail. As a result, efficient operation of broadcasting services has been seriously obstructed.

As to such inadequacies in transmission circuits and business communications circuits, the Indonesian government, too, has been expending a great effort to improve the situation. However, the improvement and expansion of circuit networks require a large amount of funds and, moreover, there is the need of maintaining close cooperation with the government offices and agencies concerned, such as the Ministry of Tourism, Posts and Telecommunications and PERUMTEL. As yet, none of the improvement plans has been brought to reality.

In any case, as to the projects that extend over various government offices and agencies, what is indispensable is to establish an overall plan extending over all the offices and agencies concerned and a system to promote the implementation of the plan.

(3) Deterioration of Functions of Broadcasting Facilities and Inappropriate Maintenance System

The maintenance of broadcasting facilities, the work that becomes increasingly essential as the broadcasting facilities are expanded, has not been conducted sufficiently. Even though some of the stations have been found to be making substantial efforts in their maintenance work, it has been noticed that, at almost all of the stations, the deterioration of equipment and their functions is quite advanced. Especially at RRI stations, spare parts are in short supply, with the result that a number of cases have been seen where broken-down installations and equipment have been left unrepaired for a long period. The problem apparently lies in aspects such as the inability of the personnel to cope with equipment failures, allocation of maintenance equipment and spare parts and the nationwide maintenance and management system for equipment and installations.

(4) Control of Quality of Broadcasts

In order for the broadcasting service to fulfill its mission, there is the need of establishing a system whereby the quality of its products, viz., the programmes, is constantly controlled. In other words, through this system, it must be ensured that programmes of high quality are transmitted on high-quality radiowaves and are delivered to the broadcast audience in good condition, and that the quality is constantly maintained and improved.

Among the regional stations, some cases are seen where broadcasting is continued without rectifying the deteriorated sound or picture quality. Problems are considered to lie in the skills of personnel and the operational management system, including the problems relating to the technical facilities.

Furthermore, such work as confirmation and improvement of reception conditions are not conducted systematically.

(5) Improvement of Quality of Broadcast Programmes

In Indonesia, besides the nationwide broadcasts of RRI and TVRI, broadcasts by stations that are neither RRI nor TVRI can also be received. In the case of radio, there are non-RRI commercial stations, etc., which are winning popularity among the regional residents with interesting programmes that are closely linked with the respective local communities. In the case of TV, Indonesia's first commercial TV station started broadcasting in Jakarta in March 1989. In addition to such domestic broadcasts as mentioned above, people in Indonesia can enjoy TV programmes from Thailand and Malaysia by installing a parabolic antenna which can receive TV signals in their home through the PALAPA satellite.

Under these circumstances, RRI and TVRI are now placed in a position where they are strongly requested by the listeners and viewers to make their programmes more diversified and more interesting and to further improve the programmes both in quality and quantity.

Although broadcasting is extremely effective as a means of educating the people, it must be pointed out that systematic production of educational programmes is not yet being conducted either in RRI or TVRI.

(6) Management and Operation

In order to operate a broadcasting organization soundly, three factors are necessary. They are the so-called "3Ms," viz., Men, Material and Money.

As for "Men," RRI and TVRI together have a total of about 13,700 employees, but the problem is that there are only a few that possess the high level of specialized ability which is required in carrying out broadcasting work. (Refer to 2-2-6.)

"Material" means facilities and equipment. At both RRI and TVRI, the superannuation of facilities is quite advanced but adequate maintenance is not being done, with the result that lowering of the level of broadcasting service is taking place. On the other hand, the need has been expressed for the expansion of facilities in order for RRI and TVRI to fulfill the mission assigned to them as broadcasting organizations.

As for "Money," the greater part of the construction budget is dependent on foreign aid. As regards the operational budget, the main financial sources are the national treasury in the case of RRI and TV license fees and a government subsidy in the case of TVRI. As the facilities are increased and the programme services expanded from now on, a substantial increase in the amount of the budget will become necessary.

In the case of radio, the license-fee system is not adopted. Although some of the regional governments are collecting an annual charge of 500-600 Rp as tax, such a revenue does not directly become income of RRI. While expectations are placed on the TV license fee as a financial source for broadcasting services from now on, the rate of collection of the license fee, because of the collection being left to POS and GIRO, is low at about 55% on the national average.

Ever since their start, Indonesia's radio and TV broadcasting services have been operated as two separate organizations. But the Indonesian government has been examining, at its in-house study committee, the plan to integrate both organizations of RRI and TVRI into a state-run broadcasting corporation, an efficient and sound enterprise that unifies Men, Material and Money. However, there still being a number of problems to be solved, the Indonesian government has not yet formed a definite plan.

2-2-6 Present Status of Personnel Assignment and Necessity of Training

(1) Past Transition in Number of Personnel

The transition in number of personnel of RRI and TVRI during the past decade is as shown in Fig. 2-2-1. During the past ten years, the increases were 1,635 at RRI and 2,536 at TVRI. Particularly at TVRI, the number of personnel increased sharply along with the expansion of the TV broadcasting network.

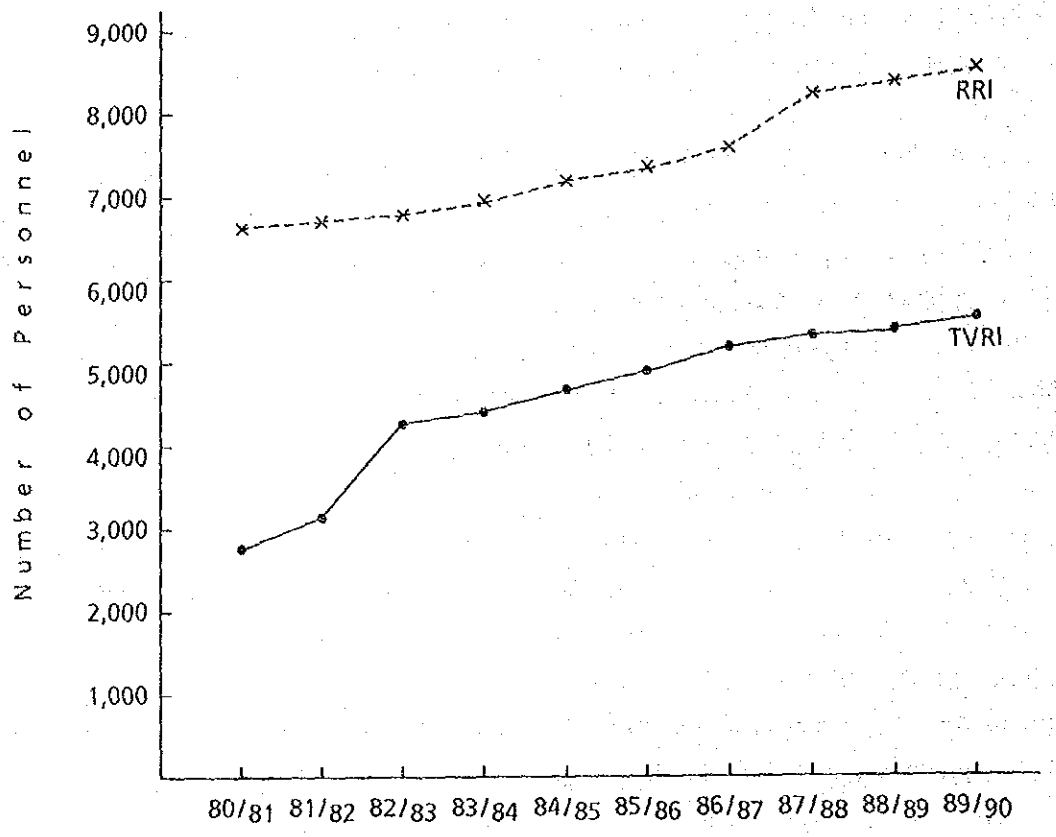


Fig. 2-2-1 Number of Personnel of RRI & TVRI

(2) Outlook for Future Number of Personnel

With regard to the various projects currently in progress as mentioned earlier in 2-2-1, the RTF Directorate General estimates that, with the completion of the projects, the required increase in the number of personnel would be about 800 and considers it necessary to employ additional personnel.

Regarding not only the projects that consist mainly of work to rehabilitate the existing facilities but also the other types of projects, the RTF Directorate General is considering the possibility of reassigning personnel as much as possible from among the existing staff; however, as for the broadcasting stations and transmitting stations to be newly

constructed, the Directorate General admits the necessity of new employment of personnel. The main stations requiring such new employment of personnel are the four TV stations (Banda Aceh, Samarinda, Ambon and Bandung)at each of which a TV studio is to be newly constructed. At each of these stations, the same as in the case of other TVRI stations, there is the need of establishing a work force of about 200. As for the 50 TV relay stations to be newly constructed, it is estimated that assignment of about five persons each would be required, as Indonesia adopts a manned-system for all such TV relay stations.

As for the projects with both software and hardware aspects which are judged as being necessary to be implemented during the ten years of Repelita V and VI, it is also considered essential to establish a maintenance system, to furthermore construct TV relay stations in the poor TV reception areas and to increase the number of personnel needed to improve the quality of programmes. Hence, the RTF Directorate General considers it necessary to newly employ about 330 personnel.

(3) Present Status of Personnel Composition

Table 2-2-3 shows a comparison between RRI and TVRI in the quality of personnel in terms of compositional ratios of the personnel's educational backgrounds. The numbers of staff members who are graduates of either a college or a university, the type of persons most needed in the broadcasting services, are only 9.9% in the case of RRI and 14.0% in the case of TVRI in ratio against their respective total work forces. The graduates of a high school or its equivalent account for about two-thirds. And the majority of them are graduates of a general course; the number of those completing a specialized course, such as a technical course, is small.

Table 2-2-3 Comparison in Number of Personnel between RRI and TVRI in Terms of Educational Background

(Unit: person)

Education	RRI		TVRI	
	Number of Persons	Ratio (%)	Number of Persons	Ratio (%)
University graduate	356	4.3	341	6.4
Academy graduate	468	5.6	415	7.7
Senior high school graduate	5,702	68.4	3,350	62.2
Junior high school graduate	855	10.3	488	9.1
Primary school graduate or below	954	11.4	787	14.6
Total	8,335	100.0%	5,381	100.0%

Total number: 13,716 persons (As of the end of March, 1989)

(4) Present Status of Personnel Employment and Necessity of Personnel Training

In Indonesia, where the rate of unemployment is rather high, the government adopts the policy of giving as many employment chances to the people as possible. Hence, the Ministry of Manpower allocates new recruits to all the public organizations. With regard to the new recruits thus allocated by the Ministry of Manpower, DEPPEN assigns them to various work-sites in consultation with such broadcasting organizations as RRI and TVRI. As a result, such broadcasting organizations as RRI and TVRI are placed in a position where they are obliged to accept any new recruit allocated to them, even if the persons allocated to them by the Ministry of Manpower may be found to have inadequate personal qualities or educational background for broadcasting work.

For the development of broadcasting services, what is indispensable is to enhance the operational ability of the broadcasting personnel who require a high-level of intellectual capacity and expertise. However, in the educational environment of Indonesia today, it is extremely difficult to find a large number of excellent personnel outside DEPPEN. Hence, it

becomes increasingly necessary to give training to the maximum number of personnel within the organization, from the basics of broadcasting work to the sophisticated ability to execute the work.

In order to cope with the training needs as mentioned above, Radio and TV Operational Training Centres have been set up, but the training actually given at these Centres has not necessarily been responding effectively enough to the needs of the work-sites.

The Radio Operational Training Centre was established in 1976 with financial and technical assistance from West Germany. At this Centre, during the period of 14 years from 1976 to 1989, a total of 104 training courses were conducted for 2,850 trainees (annual average of 204 trainees).

The Television Operational Training Centre was established in 1980, also with financial and technical assistance from West Germany. During the period of ten years from 1980 to 1989, a total of 2,884 persons underwent training at this Centre (annual average of 288 trainees).

The training given at the above-mentioned two training centres is vocational training on three levels, viz., basic, intermediate and advanced. The period of training varies from course to course, from 2-3 weeks to six months. The period when the training given at these Centres was at its peak was from around 1981 to 1984, when about 300 trainees completed a total of 14 courses in radio and about 450 completed 25 courses in TV each year. However, in 1987 and thereafter, the numbers of courses decreased to less than a half of the above-mentioned figures and the annual number of graduates also fell to about 100 persons at each Centre.

The total annual average of graduates of the above-mentioned two training centres at present is 492 including both radio and TV. This corresponds to 3.6% of the total number of staff members at RRI and TVRI. And this means that each staff member is given only one chance to receive training in 28 years!

In order to further improve and develop broadcasting in Indonesia, it is considered essential to ensure that each and every one of the staff members engaged in broadcasting services gains highly advanced knowledge and ability concerning the programmes and enhances his or her technological capabilities to cope with the steadily advancing broadcasting technologies. Hence, it is considered to be absolutely necessary to set up training courses seizing every possible opportunity so as to enable each staff member to undergo training at least an average of once every 5-6 years during the period of his or her career.

In view of the actual status of training given to the broadcasting personnel at the training centres in Indonesia, what has now become increasingly important as the method of enhancing the quality and ability of personnel in carrying out their duties is the so-called on-the-job training (OJT) in which the employees are trained and educated under appropriate guidance given by their seniors in the course of their day-to-day activities on the work-site. However, because of the fact that adequate chances to gain experience and training are not given to the middle-class employees who are expected to promote the broadcasting work as leaders, there is a shortage of human resources with appropriate experience, ability, insight and leadership. As a result, problems as mentioned earlier in 2-2-5 remain to be solved in such aspects as day-to-day management and operation, programme production and operation, maintenance and management of facilities.

2-3 Present Status of the Multi-Media Training Centre (MMTC)

As mentioned earlier in 2-1-2 (1), as broadcast-related training centres of DEPPEN of the Indonesian government, there are the following three Centres; the Radio Operational Training Centre (RTC), the Television Operational Training Centre (TVTC) and the Multi-Media Training Centre (MMTC). As shown in Fig. 2-1-1, on the organizational chart, the first two belong to the Employees' Educational and Training Centre, and the MMTC to the Secretariat of the Vice Minister.

As to the contents of training given, whereas the first two Centres conduct necessary vocational training for the employees of radio and TV broadcasting organizations, the MMTC, which has been designated as an academy to offer diploma-conferring educational training courses, has been conducting education and training of personnel in accordance with the established regulations.

Here, in this section, the present status of MMTC will be explained, leaving the details of RTC and TVTC to be given later in 3-2-3.

2-3-1 Outline

(1) Process Leading to Establishment of MMTC

Based on its judgment that in Indonesia, a multi-racial nation possessing a vast territory, broadcasting is the most effective means of information to achieve national unity and modernization, the Indonesian government since the beginning of the 1970s has carried out large-scale expansion and improvement of radio and TV broadcasting networks, with foreign economic assistance such as Japan's yen credit loans and buyer's credits from European countries and the United States. As a result, by the beginning of the 1980s, broadcasting networks that are roughly of today's scale had been established. In addition, following the rapid expansion of broadcasting services, a large number of broadcasting personnel were employed.

As mentioned earlier in 2-2-6, with regard to the employment of personnel for the Indonesian government and public organizations, the

government adopts the national policy of giving as many employment opportunities as possible to the people and has the established system of having the Ministry of Manpower allocate the new employees to the public organizations. As a result, the organization in charge of broadcasting services are often placed in a position where they are obliged to employ any allocated personnel even if their qualities or educational background were found to be insufficient for broadcasting work. This has brought about the situation where the personnel who are lacking in specialized knowledge about broadcasting or who are inexperienced persons possessing only a low level of technical skills are assigned in large number to the work-sites of broadcasting services, obstructing the smooth running of broadcasting work, such as programme production, operation, maintenance and management of facilities. Hence, over the years, the importance of education and training of personnel within the organization had been strongly recognized. After the start of the 1970s, the Radio Training Centre (RTC) and the Television Training Centre (TVTC), as the training facilities for broadcasting personnel, were established one after the other with assistance from West Germany. However, they were both too small in scale to satisfy the training needs of the broadcasting services.

In view of this situation, DEPPEN drew up a plan to establish in the academic city of Yogyakarta a comprehensive education and training centre (the Multi Media Training Centre) for the training and education of the personnel working for all of the information media under its control; film, video, printing, publication and general information, as well as broadcasting. And accordingly, the Indonesian government requested Japan to provide technical cooperation and grant aid. In response to this request, Japan in 1984 provided Indonesia with facilities and training equipment through grant aid to assist the latter in radio and TV personnel training and to provide technical cooperation concerning the training of broadcasting personnel.

The process leading to the completion of this grant aid technical cooperation was as follows:

1972	Proposal made by the Advisory Team (JICA-based long-term experts from Japan) on the necessity

	of establishing a training centre for broadcasting personnel
1977-78	Establishment, within DEPPEN, of the Study Committee on the Construction of MMTC.
	Preparation, after a series of studies, of a plan to establish MMTC.
September 1979	Submission of a formal request by the Indonesian government to the Japanese government.
September 1980	Dispatch, by the Japanese government, of a contact survey team to consult with the Indonesian government about matters relating to this subject.
January 1981	Dispatch of a preliminary survey team concerning grant aid.
September 1981	Dispatch of the Basic Design Study Team on grant aid; signing of the Minutes on Sept. 25.
February 7, 1982	Dispatch of a team to explain the draft final report on the Basic Design Survey under grant aid.
June 10, 1982	Dispatch of the preliminary study team on project-based technical cooperation (training plans).
August 20, 1982	Signing of Exchange of Notes
October 14, 1982	Verification of the consultancy contract by the Japanese government.
February 28, 1983	Verification by the Japanese government of the contract with the contractor.
October 12, 1983	Dispatch of a study team to sign an agreement on the execution of project-based technical cooperation (R/D). (R/D was signed and became effective on October 21).
April 2, 1984	Delivery of the building.
May 16, 1984	Dispatching of long-term experts to Indonesia from Japan.
June 21, 1984	Delivery of broadcasting equipment.
November 25, 1984	Dispatch of a team to discuss the Project.
July 31, 1985	Opening ceremony for the MMTC held in the presence of the President of Indonesia.

(2) Objectives and Contents of Training

Originally, the MMTC was established with the objective of providing the broadcasting personnel with basic knowledge required for carrying out their duties and to give them practical training. However, in Indonesia, unless the employees of the government or public organizations obtain qualifications based on the official school system authorized by the state, it is difficult for them to become eligible for application of the official promotion system. Besides, at the broadcasting organizations, urgent need has also been felt for the training of prospective middle-class senior staff members. For the above-mentioned two reasons, the DEPPEN authorities changed the contents of the training given at the MMTC and examined the possibility of changing the MMTC into an educational training organization (academy) authorized to confer diplomas (qualifications) to its graduates. As a result, the MMTC was changed into an academy under the presidential order dated July 30, 1985.

Thus, the trainees at the MMTC, by completing the Diploma I (D I) Course, Diploma II (D II) Course and Diploma III (D III) Course, are now awarded the qualifications as a graduate of an academy and the way has now been opened for them to be eligible for promotion within the organization.

The MMTC has a further plan of eventually opening three more courses viz., the Diploma IV (D IV) Course, the Specialist I (SP I) Course and the Specialist II (SP II) Course.

These courses aim at conferring such vocation qualifications as outlined below.

As shown in Fig. 2-3-1, Indonesia's educational system adopts the 6-3-3 system comprising 6 years in primary school, 3 years in junior high school and 3 years in senior high school. Higher education is conducted at universities (4-5 year system) and colleges (2-3 year system) called "academies." The MMTC corresponds to the above-mentioned "academy."

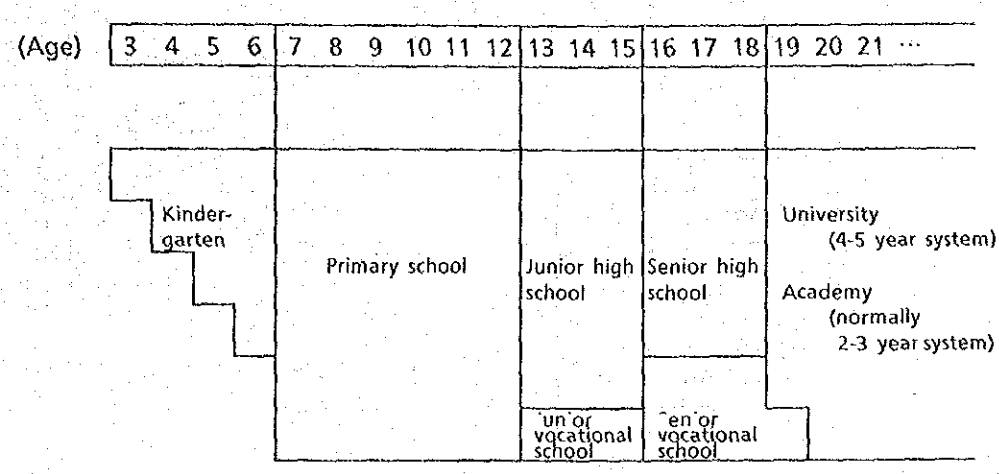


Fig. 2-3-1 Educational System of Indonesia

Fig. 2-3-2 shows a comparison of MMTC's Diploma Courses with the educational system of general universities that confer degrees.

Whereas general universities educate the students continuously for a set number of years in principle, the diploma training courses at the MMTC complete the training at the end of the period set for each course. So, in the case of MMTC's diploma courses, the employees after completion of a course generally return to their work-sites in the broadcasting services to engage in practical work and those desiring further training may proceed to more advanced courses on recommendation by the director of the broadcasting station to which they belong and after being selected by the MMTC. The qualifications of the personnel for whom each diploma course is intended and the targets and contents of each course are as shown in Table 2-3-1.

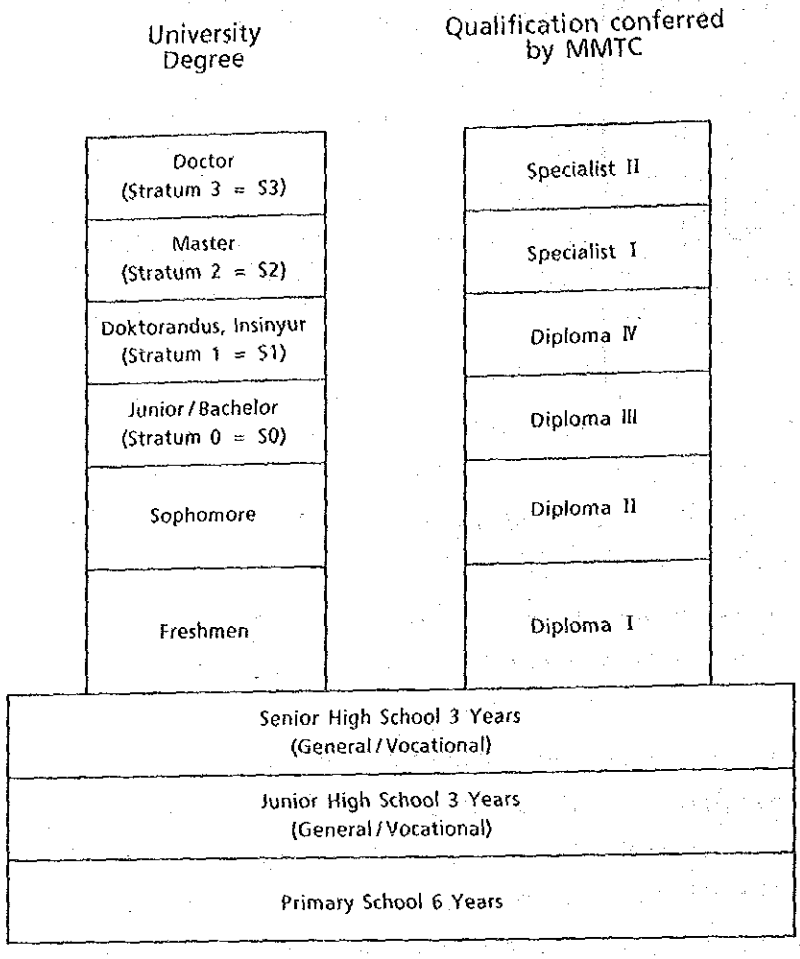


Fig. 2-3-2 Comparison of Educational Systems between General Universities and MMTC

(4) Organization and Personnel

The MMTC is a training institution that conducts human resources development of the staff members of RRI and TVRI, both of which are under the jurisdiction of the RTF Directorate General. However, because of the fact that educational training and staff administration of the employees of the Ministry of Information are in the charge of the Vice Minister's secretariat, the MMTC is under the supervision of the Vice Minister's secretariat as stated in 2-1-2.

The current organizational system of the MMTC, whose system has gradually been streamlined since its establishment, is as shown in Fig. 2-3-3. The number of staff members is 107 in all, plus 33 instructors from outside the organization. The breakdown of the staff of the MMTC is as shown in Table 2-3-2.

Table 2-3-1 Outline of the Diploma Courses

	Name of Course	Intended for:	Targets to be Attained	Contents of the Courses
D-I	Programme Compilation Planning	Those who are in charge of programme compilation and/or planning at RRI/TVRI and who have been recommended by the heads of their departments.	To learn characteristics of the media, methods of arranging programmes in the right order and correct programme transmission.	Programme management, programme composition, programme production, audience survey, broadcasting rights, broadcast scripts.
	Programme Lines Production	Those who are in charge of programme production at RRI/TVRI and who have been recommended by the heads of their departments.	To acquire practical and specialized knowledge concerning programme production.	Production management, programmes, programme production, programme aesthetics, programmes and broadcast management.
	News and Current Affairs Reporting	Those who are in charge of news at RRI/TVRI and who have been recommended by the heads of their departments.	To acquire wide-ranging knowledge and functions concerning news coverage and news-programme production	Composition of news, news-programme management, news-programme production, news-programme planning, ethical code, news-scriptwriting.
	Studio and Master Control Technical Operation	Production and operation engineers at RRI/TVRI who have been recommended by the heads of their departments.	To acquire knowledge about radio and TV equipment and production techniques concerning programme production.	Measuring techniques and measuring instruments, studio equipment operation techniques, technical and lighting systems in programme production and measuring techniques.
	Transmission Operation	Those who are in charge of transmission operation at RRI/TVRI and who have been recommended by the heads of their departments.	To acquire practical knowledge concerning programme transmission.	High-frequency circuits, transmission techniques, antenna, radiowave propagation, transmitter techniques, measuring techniques and measuring instruments.

Table 2-3-1 Outline of the Diploma Courses

	Name of Course	Intended for:	Targets to be Attained	Contents of the Courses
D-II	Broadcasting Programme Planning	Those who are in charge of programme planning at RRI/TVRI and who have been recommended by the heads of their departments.	To acquire the ability to assemble all kinds of programme materials in accordance with programming plans.	Evaluation and production of programmes, methods of preparing production materials, personnel assignment planning, script-writing, budget planning.
	Programme Package Production	Those who are in charge of programme production at RRI/TVRI and who have been recommended by the heads of their departments.	To acquire the ability to give due consideration to methods, techniques and artistic sense when producing each programme.	Programme aesthetics, direction, audio-visual techniques in programme production, and theory on programme formats.
	Script/Story Writing	Those who are in charge of scriptwriting at RRI/TVRI and who have been recommended by the heads of their departments.	To acquire the ability for idea development, writing techniques and scriptwriting in programme production.	Programmes, literature, scriptwriting, techniques for gathering of programme materials, theory on programme formats.
	Broadcast Journalism	those who are in charge of news at RRI/TVRI and who have been recommended by the heads of their departments.	To acquire the ability for scriptwriting, reporting, editing, commentating and analyzing news materials.	Broadcast journalism, presentation and reporting techniques, news programmes and current-affairs commentating, news editing and news-programme production.
	Studio Production Techniques	Production engineers at RRI/TVRI who have been recommended by the heads of their departments.	To acquire ability not only in programme production engineering but also in understanding various programme materials.	Shooting techniques, audio techniques, video techniques, measuring techniques and editing techniques.
	Transmission Technics	Transmission engineers at RRI/TVRI who have been recommended by the heads of their departments.	To acquire complete knowledge concerning transmitters, radiowave propagation, audio and video transmission qualities.	Multiplex transmission system, antenna, radiowave propagation, measuring techniques and measuring instruments, transmitter techniques.

Table 2-3-1 Outline of the Diploma Courses

	Name of Course	Intended for:	Targets to be Attained	Contents of the Courses
D-Ⅲ	Educational and Religious Programme Production	Those who are in charge of production of educational/religious programmes at RRI/TVRI and who have been recommended by the heads of their departments.	To acquire the ability to produce educational/religious programmes in conformity with social order from a comprehensive point of view.	Educational psychology, cultural anthropology, cross-cultural exchanges, script-writing, musical descriptions.
	Scenario and Storyboard Writing	Those who are in charge of scriptwriting at RRI/TVRI and who have been recommended by the heads of their departments.	To acquire the ability to write radio and TV programmes, to dramatize literal works and comedies, to write presentation scripts and shoot scripts.	Scriptwriting, animation, script analysis, broadcast performances, filming methods.
	Apparatus Engineering	Apparatus engineers at RRI/TVRI, who have been recommended by the heads of their departments.	To acquire the knowledge concerning designing, planning and construction of studio and master control facilities.	Facility planning for broadcasting stations, acoustic engineering, programme-production equipment planning, optimum equipment layout, animation techniques.

(Total 107 persons)

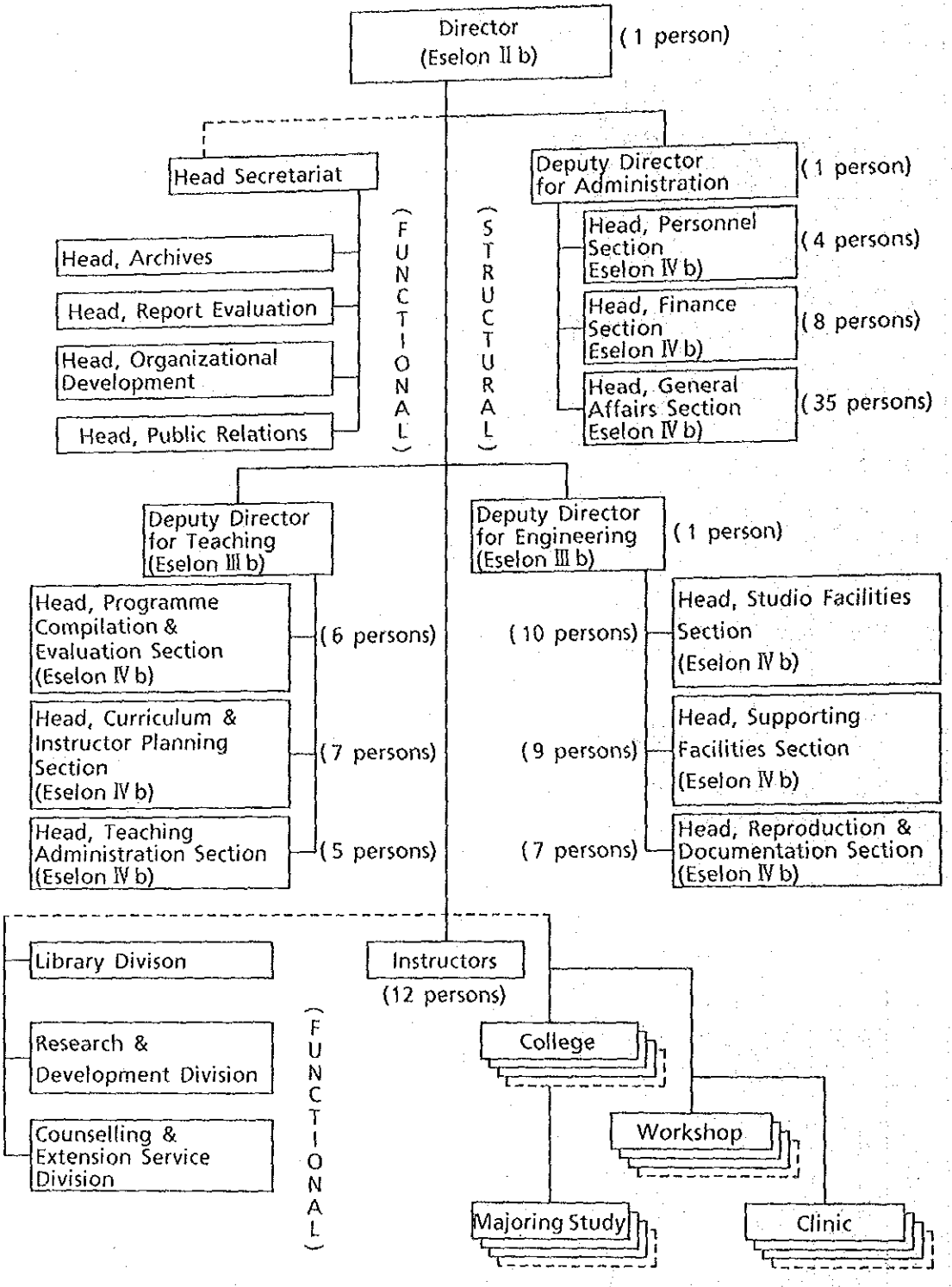


Fig. 2-3-3 Organizational Chart of MMTC

Table 2-3-2 Staff Member of MMTC

Section	Number
Director	1
Instructors	12 (Additionally, concurrent instructors 15 and external instructors 33)
Administration group	48
Engineering group	27
Teaching administration group	19
Total	107

2-3-2 How Japan's Grant Aid Programme and Technical Cooperation are Being Implemented

As mentioned in 2-3-1 (1) explaining the process leading to the establishment of MMTC, the plan to establish the Radio/Television Broadcasting Training Centre was submitted in September 1979 by the Indonesian government to the Japanese government, requesting Japan's cooperation. In response to this request, the Japanese government, following the sending of various survey teams and discussions with the Indonesian government since 1980, decided to provide facilities and equipment through grant aid assistance and to offer assistance in personnel training in the form of project-based technical cooperation.

(1) Grant Aid Cooperation

Based on the results of the preliminary study in January 1981 and the Basic Design Study in September 1981, the Japanese government decided to cooperate in the establishment of a Radio/Television Broadcast Training Centre with grant aid totalling 1.8 billion yen and concluded an Exchange of Notes (E/N) on August 20, 1982. In June 1984, the facilities were completed and were delivered to the Indonesian side. On July 31, 1985, the opening ceremony was held, honoured by the presence of President Suharto.

The main facilities and equipment provided are:

a) Buildings 900 million yen

Ferro-concrete structure 4 buildings

Total floor area 5,495m²

containing classrooms, TV studios, radio studios, training rooms and other training facilities

b) Training equipment 900 million yen

Equipment for use in training personnel in TV and radio broadcasting

Meanwhile, the Indonesian side, in parallel with the above-mentioned cooperation from Japan, constructed such facilities as the auditorium, library, dining room and lodging facilities (totalling 5,723m² in area) with funds totalling 1.3 billion yen (5.73 billion rupiahs, 1983). Details of facilities and equipment are described in 2-3-5.

(2) Project-based Technical Cooperation

With regard to the technical cooperation in personnel training at the projected Radio/TV Broadcasting Training Centre, discussions concerning the implementation of technical cooperation were held in October 1983 based on the results of the preliminary study conducted in June 1982 and the survey conducted in August 1983 by the long-term study experts. As a result, an R/D was concluded on October 21, 1983 concerning provision of project-based technical cooperation. Based on this R/D, the sending of long and short term experts, acceptance of trainees to study in Japan and provision of training equipment have been carried out.

The technical cooperation at the outset had been planned to be implemented for five years from the signing of the R/D, but this plan was extended by two years in October 1988. Further, in order to expand D-Ⅱ and D-Ⅲ, the present R/D is scheduled to be concluded this coming summer (1990) to extend the period of the technical cooperation for two more years from October 1990.

1) Sending of Long-term Experts

Since May 1984 up to March 1990, a total of 19 JICA-based long-term experts have been sent to Indonesia to cooperate in the

development of MMTC.

The composition of each expert team from 1984 to October 1988 when the first extension was made was seven persons consisting of six experts and one coordinator. The fields of work the seven persons took charge of were as follows:

(1) Programme compilation (up to October 1989, this was also in the charge of the team leader)
(2) Programme production
(3) News reporting
(4) Production engineering
(5) Master control and post-production
(6) Transmitter engineering
(7) Coordination

As from October 1988 when the first 2-year extension became effective, the number of experts was reduced by two persons and, at present, each expert team consists of five persons, viz., 4 experts and 1 coordinator, as follows:

(1) Programme compilation and news reporting (up to October 1989, this was also in the charge of the team leader)
(2) Programme production
(3) Production engineering, master control and post-production
(4) Transmitter engineering (since October 1989, this was also in the charge of the team leader)
(5) Coordination

2) Sending of Short-term Experts

In addition to the cooperation through the sending of long-term experts as mentioned above, the guidance to be given, as needs arise, through the sending of short-term experts had been promised in the R/D and has since been implemented over the years. Table 2-3-3 shows the records of cooperation conducted through the sending of short-term experts from Japan to Indonesia between the period from the opening of the MMTC until the end of fiscal 1989.

Table 2-3-3 Technical Cooperation by Short-term Experts

Year	Item	Category	Duration	Partici-pant	Expert
1984/85	Administration	General	1984.11.18 ~1985. 1.18	1	1 JICA/NHK
	Art	Production	1984.12. 8 ~1985. 1.17	1	1 JICA/NHK
1985/86	Administration	General	1985. 6.10 ~1985. 9. 9	1	1 JICA/NHK
	Processing	Technical Operation	1986. 1.27 ~1986. 3.26	1	1 JICA/NHK
1986/87	Programme Materials	Programme Compilation	1986. 3.13 ~1986. 5.12	1	1 JICA/NHK
	News Editing	News	1986. 9.30 ~1986.11.29	15	1 JICA/NHK
	Lighting	Production Technics	Ditto	15	1 JICA/NHK
	Electric Power	General Technics	1986.11. 4 ~1986.12. 3	15	1 JICA/NHK
1987/88	Transmitter	Transmitter	1987. 6. 8 ~1987. 6.24		1 JICA/NEC
	Transmitter	Transmitter	1987. 6. 8 ~1987. 6.29		1 JICA/Toshiba
	Antenna Technics	Transmitter	1987. 9. 9 ~1987. 9.22	10	1 JICA/NHK
	Sound Effects	Production Technics	1987.11.16 ~1987.12.27	13	1 JICA/NHK
	Audio Mixing	Production Technics	Ditto	13	1 JICA/NHK
	Opinion Survey	Programme Compilation	1988. 1.17 ~1988. 2.17	17	1 JICA/NHK
1988/89	Reliability	General Technics	1988.11. 5 ~1988.12. 9	38	1 JICA/NHK
	Receiver Technics	General Technics	Ditto	9	1 JICA/NHK
	Special Effects	Production Technics	Ditto	29	1 JICA/NHK
1989/90	School Broadcasting	Production	1989. 5.15 ~1989. 6.18	43	1 JICA/NHK
	Spot Programmes	Compilation production	Ditto	25	1 JICA/NHK
	Archives	Programme Compilation	Ditto	18	1 JICA/NHK
	Educational Broadcasting	Production	1989. 9.18 ~1989.10.22	35	1 JICA/NHK
	Entertainment Programmes	Production	Ditto	35	1 JICA/NHK
	OB Technics	Production Technics	1989.11.13 ~1989.12. 9	37	1 JICA/NHK
	Maintenance	Production Technics	Ditto	37	1 JICA/NHK
	New Media	General Technics	1990. 3.12 ~1990. 4. 7	22	1 JICA/NHK
	Acoustics	General Technics	Ditto	22	1 JICA/NHK
Total				453	26

3) Training of Counterpart Personnel Accepted for Study in Japan

The objectives of the training of counterpart personnel accepted for study in Japan include i) securing of personnel to whom future technical transfers may be directed and ii) fostering of personnel who will play the leading role in the running of the MMTC. Fully realizing the importance of such training of the counterpart personnel in Japan, the Japanese government expressed agreement at the time of the R/D discussions to the plan of accepting the trainees into Japan on a continual basis; about ten during the first two years and several persons each year during the subsequent years. In actual practice, however, as shown in Table 2-3-4, Japan has already accepted more trainees than originally agreed.

Table 2-3-4 Counterpart Training in Japan

Year	Name of Training	Number of Persons	Course
1983	MMTC Instructor	4	Special
1984	Administration	2	Group + Individual
	Educational Progammes	1	Group + Individual
	TV Engineering	1	Group + Individual
	Radio Engineering	1	Group + Individual
	Graphic Design	1	Individual
	Administration	1	Individual
1985	Editing	1	Group + Individual
	Photo Processing	1	Group + Individual
	Transmitter	1	Group + Individual
	Sound Effects	1	Group + Individual
1986	Educational Programmes	1	Group
	Archives	1	Individual
	Educational Programmes	1	Group
	Electric Power	1	Group + Individual
	Processing	1	Group + Individual
1987	Educational Programmes	1	Group
	Radio Engineering	1	Group + Individual
	TV Engineering	1	Group + Individual
	TV Transmitter	1	Group + Individual
	Audience Research	1	Individual
	Educational Programmes	1	Group
	Administration	1	Individual
1988	TV Engineering	2	Group + Individual
	Broadcasting Administration	1	Individual
	TV Engineering	2	Group + Individual
	General Affairs	1	Individual
1989	TV Administration	2	Group
	TV News Programmes	1	Individual
	TV Engineering	1	Group
	Measuring Technics	1	Individual
Total		38	

The results of training in Japan of the above-listed counterpart trainees were satisfactory. After their return to Indonesia, all except five of the members listed became involved in the running of the educational training projects at the MMTC and have been contributing substantially to the development of the MMTC. Table 2-3-5 shows the numbers of such personnel taking charge of different training courses at the MMTC as of April 1990.

Table 2-3-5 Course and Counterpart

Name of Course	Programme Compilation	Production	News	Operation Technics	Transmitter	Total
Number of Counterparts	9	5	4	8	6	29
Name of Experts	Shigeki Ueno	Yuji Tokimatsu	Shigeki Ueno	Osamu Kobayashi	Noboru Shimoji	

4) Provision of Equipment

Table 2-3-6 shows how equipment have been provided during each fiscal year. Table 2-3-7, on the other hand, shows how additional equipment have been provided by going carried in by the experts.

Table 2-3-6 Equipment Provided by Technical Cooperation

Year	Price (1000 Yen)	Main Equipment
1984	23,156	Photocopy machine, typewriter, personal computer, word processor, measuring instrument, handy camera, VTR, monitor
1985	159,960	Training kits, TV OB van, transmission equipment, measuring instrument, radio OB van, radio car, microbus
1986	96,641	TV OB van, production equipment, measuring instrument, TV transmitting antenna
1987	25,445	Portable power generator, close-up photography equipment, transformer, slidac, signal generator, grand piano
1988	20,232	Colour corrector, location tools, news gathering tools, electronics training kits, VTR, spare parts
1989	62,032	Outdoor news gathering tools, video editing tools, location sound equipment, electronics practice equipment, maintenance spare parts, training material making tools
Total	387,466	

Table 2-3-7 Supplementary Equipment for Experts' Jobs

Year	Price (Unit: 1000Yen)	Main Equipment
1984	1,903	Camera, monitor, video tape, stationary, books
1985	1,362	Books, VTR, monitor
1986	1,781	Betacam power supply unit, word processor, disc records, books
1987	2,969	Typewriter, high speed dubbing machine, stationary, word processor
1988	7,901	Personal computer, TV camera, tape recorder, books, VTR controller
1989	10,580	Word processor, personal computer, measuring instrument, TV camera, VTR
Total	26,496	

2-3-3 How the Diploma Course Training is Conducted

(1) Outline of How the Diploma Course Training has been Conducted since the Opening of the MMTC

The MMTC was originally established with the objective of giving basic knowledge required by broadcasting personnel in carrying out their duties and also of conducting practical training for them.

From May 1984 the JICA-based experts, keeping the opening of the MMTC in view, conducted the training of instructors and, at the same time, tackled the work of offering guidance in the development of the training courses. As a result, through the cooperation of the experts and the Indonesian side, the training curriculums for a total of 11 months, viz., Basic-I (4 months), Basic-II (3 months) and Basic-III (4 months), were developed.

Immediately before the opening of the MMTC, President Suharto suggested the necessity of guaranteeing the status of trainees by conferment of qualifications, and the DEPPEN authorities accordingly examined the possibility of changing the training courses into a system under which diplomas are conferred, and decided to change the MMTC into a diploma-conferring training organization (academy). This change into an academy took effect on July 30, 1985 following the issuance of Presidential Orders Nos. 59 and 60. On the following day, July 31, the MMTC was officially opened in the presence of President Suharto.

Consequently, it became necessary for the MMTC to change its training curriculums, but this problem was dealt with by using the already-developed 11-month curriculums —— Basic-I (4 months), Basic-II (3 months) and Basic-III (4 months) —— as the curriculums for the Diploma-I (D I) Course.

Originally, the MMTC had planned to open five Diploma-I (D I) courses (totalling 120 persons) simultaneously with the opening of the MMTC in 1985. However, owing to budgetary restrictions, only four courses (79 trainees) were conducted. As these courses were started in the middle of a fiscal year, the training for that fiscal year was conducted for only

one semester and the second-semester training was conducted in 1989 together with the 1989 trainees.

During 1986/87, 1987/88 and 1988/89, overall cuts were made in the national budgets owing to the deterioration in finance caused by the drop in oil prices. Consequently, the MMTC's training courses were obliged to be reduced to 2 courses, 3 courses and 4 courses in the respective years. In 1989/90, all of the five D-I courses were conducted, thanks to government finances taking a favorable turn and also to the recognition by the Indonesian government of the importance of human-resources development and training. Also in 1989/90, three D-II courses (out of the eight courses planned), which had been under preparation, were carried out. In 1990/91, too, the same as in the preceding year, five D-I courses and three D-II courses are in progress.

Table 2-3-8 shows the records of training courses conducted at the MMTC since its opening, and Tables 2-3-9 (a) and (b) each show how the D-I and D-II courses have been conducted.

Table 2-3-8 Record of Training Courses

Diploma Course	Course \ Year	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91
D I	1. Programme Compilation Planning					○	○
	2. Programme Lines Production	○ *	○	○	○	○	○
	3. News and Current Affairs Reporting	○ *		○	○	○	○
	4. Studio and Master Control Techinical Operation	○ *	○	○	○	○	○
	5. Transmission Operation	○ *			○	○	○
	Number of Courses	4 *	2	3	4	5	5
D II	1. Programme Package Production					○	○
	2. Script/Story Writing					○	○
	3. Studio Production Technics					○	○
	Number of Courses	–	–	–	–	3	3

* The first semester of these courses was implemented in 1985, while the second semester was in 1989.

Table 2-3-9 (a) Past Record of D I Course

Year	Ordinal Number	Period	Course (Study Programme)	Number of Applicants	Number of Trainees	Number of Passed Trainees
1985/86	1st	July 31, 1985 ~ Feb. 18, 1986	Programme Lines Production	358	12	12
			News and Current Affairs Reporting		12	9
			Studio and Master Control Technical Operation		29	27
			Transmission Operation		19	16
			Total		72	64 (Passed MMTC Local Test)
1986/87	2nd	April 12, 1986 ~ March 17, 1987	Programme Lines Production	241	20	18
			Studio and Master Control Technical Operation		20	19
			Total		40	37
1987/88	3rd	April 27, 1987 ~ March 26, 1988	Programme Lines Production	213	20	20
			News and Current Affairs Reporting		20	20
			Studio and Master Control Technical Operation		20	20
			Total		60	60
1988/89	4th	April 16, 1988 ~ March 18, 1989	Programme Lines Production	329	18	18
			News and Current Affairs Reporting		18	18
			Studio and Master Control Technical Operation		18	18
			Transmission Operation		18	17
			Total		72	71
1989/90	5th	April 4, 1989 ~ March 16, 1989	Programme Compilation Planning	392	24	24
			Programme Lines Production		24	24
			News and Current Affairs Reporting		24	24
			Studio and Master Control Technical Operation		24	24
			Transmission Operation		24	24
			Total		120	120
	Supplementary Course for the 1st Year Course	Sep. 4, 1989 ~ March 16, 1990	Programme Lines Production	48	7	7
			News and Current Affairs Reporting		6	6
			Studio and Master Control Technical Operation		14	14
			Transmission Operation		13	13
			Total		40	40
1990/91	6th	April 16, 1990 ~ March 25, 1991	Programme Compilation Planning		24	
			Programme Lines Production		24	
			News and Current Affairs Reporting		24	
			Studio and Master Control Technical Operation		24	
			Transmission Operation		24	
			Total		120	

Table 2-3-9 (b) Past Record of DII Course

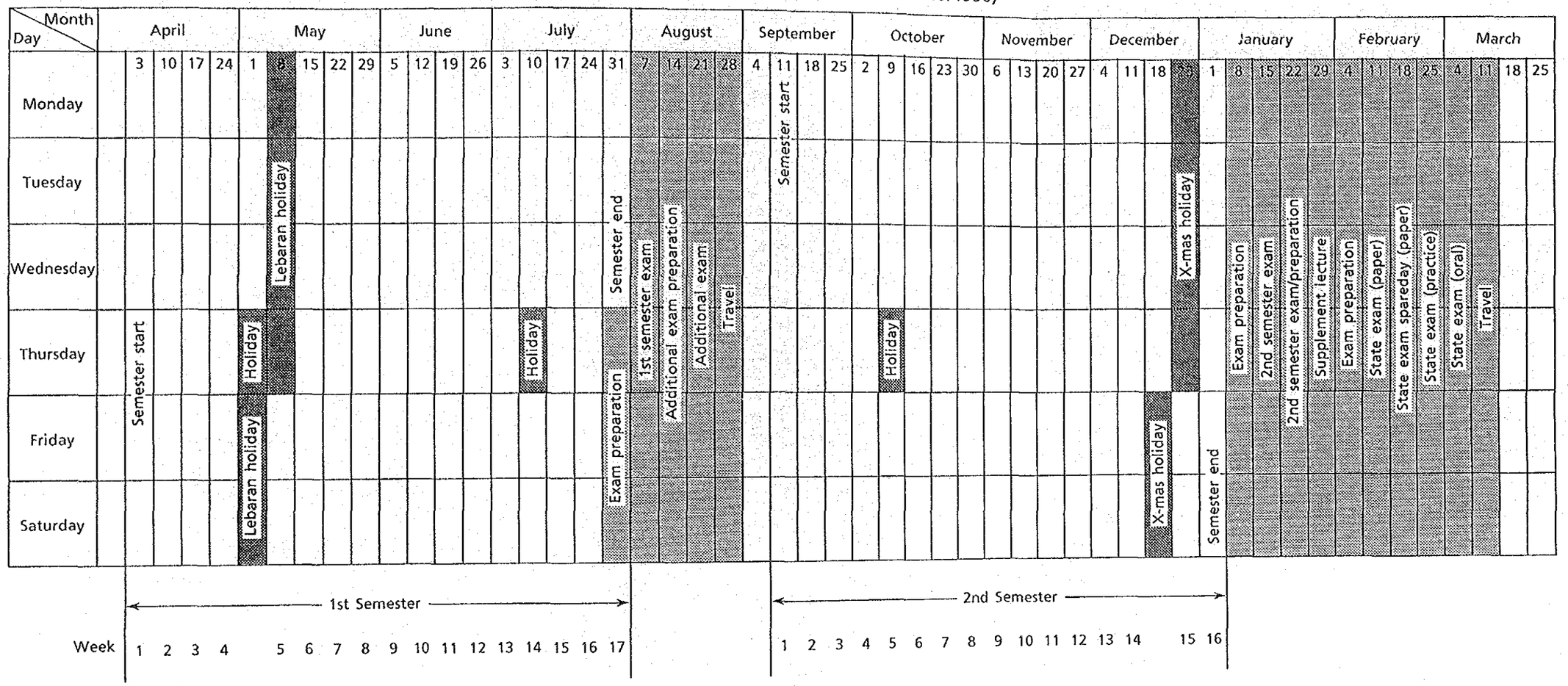
Year	Ordinal Number	Period	Course (Study Programme)	Number of Applicants	Number of Trainees	Number of Passed Trainees
1989/90	1st	April 4, 1989 ~ March 16, 1990	Programme Package Production	86	12	12
			Script/Story Writing		11	11
			Studio Production Technics		12	12
			Total		35	35
1990/91	2nd	April 16, 1990 ~ March 25, 1991	Programme Package Production	119	12	
			Script/Story Writing		12	
			Studio Production Technics		12	
			Total		36	

(2) Annual Schedule of Training Courses

A brief explanation will be given here of the annual pattern of training given at the MMTC, using the case of the courses conducted in 1989/90 as an example.

In both the D-I and D-II courses, the first semester started on April 6, 1989 and continued for a net period of 16 weeks, followed by four weeks consisting of a semester exam, preparations, a makeup exam and a short trip. The second semester began on September 11 and similarly continued for a net period of 16 weeks excluding the holiday periods, followed by 10 weeks consisting of preparation for exams, the semester exam, a makeup exam, a state exam (paper tests), a makeup exam for the state exam, a state exam in practical skills, a state exam (oral tests) and a short trip. Table 2-3-10 shows the schedule of training at the MMTC for 1989/90.

Table 2-3-10 Training Schedule (as of 1989/1990)



(3) Curriculums

In both D-I and D-II, the curriculum is divided into general subjects, basic-skill subjects and specialized subjects. Through lectures and practical training, the trainees are required to take each year a total of 44 credits in the case of D-I and 40-42 in the case of D-II. Besides the above, the trainees are supposed to attend such non-credit classes as lectures on "Sports and Health" and "Organization and Operational System of DEPPEN."

As for the credits, in the case of lectures, a trainee earns one credit (or one SKS-SISTEM KREDIT SEMESTER in Indonesian) by continuously attending the classes —— 50 minutes per subject a week —— for 16 weeks. In the case of practical training, a trainee earns two credits by taking part in practical training one day (8:00-16:20 being the standard hours) a week for 16 consecutive weeks.

As for the practical training, each trainee is required to earn 8 SKS a year (one day a week during the 1st semester: 2 SKS, and three days a week during the 2nd semester: 6 SKS) in the case of D-I courses, and 10 SKS a year (three days a week during the 1st semester: 6 SKS, and two days a week during the 2nd semester: 4 SKS) in the case of D-II courses. So, in terms of ratios in the number of hours, the lectures-practical training ratios are roughly 6:4 in the case of D-I and 5:5 in the case of D-II. The curriculum composition is such that the higher the level of the course, the more importance is attached to practical training.

As for the curriculums of the training courses which are conducted at present (five D-I courses and three D-II courses), they are shown in 3-3-2 (2), Operational Plans, together with the courses being planned.

(4) Timetables

Weekly timetables are prepared in accordance with the curriculums of the D-I and D-II courses.

The daily allocation of lecture hours is done by taking 50 minutes as the unit and each subject is normally allotted 100 minutes (2 SKS), as follows:

1st period: 08:00 - 08:50
(Recess: 5 minutes)
2nd period: 08:55 - 09:45
(Recess: 10 minutes)
3rd period: 09:55 - 10:45
(Recess: 5 minutes)
4th period: 10:50 - 11:40
(Lunch: 60 minutes from 11:40 to 12:40)
5th period: 12:40 - 13:30
(Recess: 5 minutes)
6th period: 13:35 - 14:25
(Recess: 5 minutes)
7th period: 14:30 - 16:20

The timetables in the 1st and the 2nd semesters for the five D-I courses and three D-II courses conducted in 1989/90 are shown in Tables 2-3-11, 12 and 13. Of the lectures given in the respective courses, joint classes were conducted for such general subjects as the Indonesian Language, Religion, State Ideology, Introduction to Research Methodology and Citizenship. In the tables are also shown which rooms were used for such joint classes. As for other lectures, general classrooms were used. How the practical training has been conducted will be explained in the next item (5).

Table 2-3-11 Teaching Schedule of Semester I for D I Course

Programme Compilation Planning

Hour \ Day of the Week	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
08:00~09:45	Indonesian Language	Introduction to Research Methodology	Administration	English I	Practice	State Ideology
09:55~11:40	Programme Formatology	Introduction to Programme Production	Role of Broadcasting Right	Introduction to Programme Compilation		
12:40~14:25	Religion					
14:30~16:20						

Programme Lines Production

08:00~09:45	Indonesian Language	English	Aesthetics & Art in Programme Production I	Practice	Programme Production I	State Ideology
09:55~11:40	Scriptwriting	Introduction to Broadcast Programmes	Introduction to Production Management			
12:40~14:25	Religion	Aesthetics & Art in Programme Production I				
14:30~16:20						

News and Current Affairs Reporting

08:00~09:45	Indonesian Language	English	News Formatology	Practice	News Editing Technics	State Ideology
09:55~11:40	Journalism Ethical Code	R/TV Journalism	Introduction to News Programme Production			
12:40~14:25	Religion	Introduction to News Programme Management	Science of Communication			
14:30~16:20						

Studio and Master Control Technical Operation

08:00~09:45	Indonesian Language	Lighting System & Colourimetry Production	Mathematics	Practice	Technical Aspects of Programme Production	State Ideology
09:55~11:40	Studio Equipment Technics I	Electronics	English I			
12:40~14:25	Religion		Audio and Video Technics I			
14:30~16:20						

Transmission Operation

08:00~09:45	Indonesian Language	Transmitter Technics	Electronics	Practice	Mathematics	State Ideology
09:55~11:40	Measurement & Measuring Instruments I	Radio Technics	English I			
12:40~14:25	Religion	Audio and Video Technics I	Electric Technics			
14:30~16:20						

Auditorium 24 persons × 5 classes = 120 persons

Auditorium 24 persons × 5 classes = 120 persons

Auditorium and Other Classrooms

(Islam) (Protestant, Catholic, Hindu)

Table 2-3-12 Teaching Schedule of Semester Ⅱ for D I Course

Programme Compilation Planning

Hour \ Day of the Week	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
08:00~09:45	Practice	Practice	Practice	Introduction to Programme Management	Communication Science	Scriptwriting I
09:55~11:40				Audience Research	Scriptwriting I	Introduction to Programme Management
12:40~14:25				English II		
14:30~16:20						

Programme Lines Production

08:00~09:45	Practice	Practice	Practice	English II	Aesthetics & Art in Programme Production II	Introduction to Research Methodology
09:55~11:40				Communication Science	Programme & Broadcast Management	Programme Production II
12:40~14:25				Aesthetics & Art in Programme Production II		
14:30~16:20						

News and Current Affairs Reporting

08:00~09:45	Practice	Practice	Practice	Reporting and Interview	English II	Introduction to Research Methodology
09:55~11:40				Aesthetics & Art in Programme Production	News Text Writing	Reporting and Interviews
12:40~14:25				Planning of News Programmes and Broadcasting Programme		News Text Writing
14:30~16:20						

Studio and Master Control Technical Operation

08:00~09:45	Practice	Practice	Practice	Measurement & Measuring Instruments	Studio Equipment Technics II	Introduction to Research Methodology
09:55~11:40				Audio & Video Technics II	Technics of Tools for Picture & Sound	Technics of Tools for Picture & Sound
12:40~14:25				English II		
14:30~16:20						

Transmission Operation

08:00~09:45	Practice	Practice	Practice	Electronics II	Audio & Video Technics II	Introduction to Research Methodology
09:55~11:40				Antenna & Radio Wave Propagation	English II	Transmitter Technics I
12:40~14:25				Measurement & Measuring Instruments II		
14:30~16:20						

Auditorium 24 persons × 4 classes = 96 persons

Table 2-3-13 Teaching Schedule of Semester Ⅰ and Ⅱ for DⅡ Course

Semester Ⅰ

Programme Package Production

Hour \ Day of the Week	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
08:00~09:45	Practice	Practice	Practice	Arts of Hearing & Seeing I	English III	Research Methods III
09:55~11:40				Dramaturgy		Production Management III
12:40~14:25				Indonesian Language II		
14:30~16:20						

Script/Story Writing

08:00~09:45	Practice	Practice	Practice	English III	Programme Formatology	Research Methods II
09:55~11:40				Programme Production		Scriptwriting II
12:40~14:25				Indonesian Language II		
14:30~16:20						

Studio Production Technics

08:00~09:45	Practice	Practice	Practice	Audio technics	Electronics II	Research Methods II
09:55~11:40				English III		Technics of Editing and Synchronizing I
12:40~14:25				Video technics		Lighting & Sound Technics
14:30~16:20						

Temporary Lobby Room 12 persons × 3 classes = 36 persons

Semester Ⅱ

Programme Package Production

Hour \ Day of the Week	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
08:00~09:45	Directing II	English IV	Programme Formatology II	Practice	Practice	Citizenship
09:55~11:40	Programme Production III	Communication Science II	Aesthetis & Art of Programme Production III			
12:40~14:25	Animation I	Aesthetis & Art of Programme Production III	Programme Production III			
14:30~16:20						

Script/Story Writing

08:00~09:45	Social Communication	English IV	Literature	Practice	Practice	Citizenship
09:55~11:40	Technics of Broadcast Programme Collection	Scriptwriting III	Scriptwriting III			
12:40~14:25	Aesthetis & Art of Programme Production II	Aesthetis & Art of Programme Production II	Programme Broadcast Management II			
14:30~16:20						

Studio Production Technics

08:00~09:45	English IV	Measurement Technics II	Power Supply, Safety Engineering and Find Prevention I	Practice	Practice	Citizenship
09:55~11:40	Management Technics	Technics of Equipment Operation	Camera Blocking Technics			
12:40~14:25	Technics of Editing & Synchronizing II		Technics of Equipment Operation			
14:30~16:20						

Temporary Lobby Room 12 persons × 3 classes = 36 persons

(5) How Practical Training is conducted

The objectives of practical training lie in having the trainees confirm, through practical training given them in a form as close as possible to what they would experience on the actual work-site in broadcasting services, the knowledge and theories they will have gained through their lectures and in thereby having them enhance their technical skills related to broadcasting work.

The training given in the D-I courses aims at enabling the trainees to perform their broadcasting duties under the instruction of their seniors. It is, therefore, so designed that the trainees may be able to gain basic knowledge and skills in broadcasting services through their participation in practical training. The training given in the D-II courses, on the other hand, aims at enabling the trainees to execute their own routine duties through the cooperation and assistance of their supervisors. It is also designed so that, through practical training, the trainees may be able to gain specialized knowledge and skills.

The outline of the aims, place, method, etc., of practical training given in each course is shown in Table 2-3-14.

Table 2-3-14

Course		Aim of Practical Training	Remarks (Outline of Place, Method and so on)
D I	Programme compilation planning	• Basic knowledge and skill on - Management and facilities of broadcasting station - Programme planning and compilation - Relation between programme and audience • Practice on programme production	• Practical training at RRI and TVRI stations in Yogyakarta • Data survey and audience research at POS & GIRO and Statistics Bureau • Production training in MMTC
	Programme lines production	• Basic knowledge and skill on programme production • Practice on programme production	• Production training in MMTC
	News and current affairs reporting	• Basic knowledge and skill on news gathering and news programmes • Practice news programme production	• Production training in MMTC
	Studio and master control technical operation	• Basic knowledge and skill of production and master control technics • Practice of programme production technics	• Production technic training in MMTC
	Transmission operation	• Basic knowledge and skill on - Production and master control facilities - Transmitter - Electric and electronic technics • Practice on transmitter operation and measurement	• Production training in MMTC
D II	Programme package production	• Professional knowledge and skill on programme production of various types	• Production training in MMTC
	Script/story writing	• Professional knowledge and skill on gathering materials and script/story writing	• Gathering materials outside of MMTC • Writing practice in MMTC
	Studio production technics	• Professional knowledge and skill on production and master control technics • Practice on programme production technics	• Practical training in MMTC

The assignment of practical-training days during each week, as mentioned in (3) and (4), is done in such a way as to avoid overlapping and to ensure effective use of the facilities. Thus, during the 1st semester, one day for the D I courses and three days for the D II courses are assigned and, during the 2nd semester, three days for the D I courses and two days for the D II courses are assigned, respectively.

As for the contents of the practical training given in each course, a summary of how the courses were conducted in 1989/90 is given in Table 2-3-15.

Among the training courses, such as those in programme production, that actually use such production facilities as studios or OB vans, the trainees of related courses are brought together to be given joint training, because joint work by both the programme and engineering personnel is required and also because the avilability of practical-training facilities is restricted. Thus, in conducting the three D I courses, viz., "Programme Lines Production," "News and Current Affairs Reporting" and "Studio and Master Control Technical Operation," all the trainees are divided into a number of teams by theme and by the facilities to be used (radio & TV studios and OB vans), so as to have each team produce, by joint work, a programme under a given theme. In this way, the trainees are given the chances of gaining skills in their specialized fields of work through their participation in the joint activities as mentioned above.

There are a number of different patterns of practical training in programme production according to the training course concerned or the theme of each programme. But conceptually, each programme production team is expected to complete the production of one programme in three weeks, as follows:

1st week: Preparation for the production, getting the equipment ready and conducting rehearsals.

2nd week: Production of the programme in a studio or by on-the-spot coverage; recording of the programme

3rd week: Editing and evaluation of the programme

The courses "Programme Compilation Planning" and "Transmission Operation" in D I and "Script Story Writing" in D II are each carried out under a special practical-training procedure of a set pattern.

For example, in the case of the "Programme Compilation Planning" in D I, the trainees, in addition to participating as staff in charge of programme compilation in the practical training in programme production at the MMTC as mentioned above, take part in practical training outside the MMTC, such as the practical training in programme compilation at the Yogyakarta station of RRI or TVRI, as the case may be, and a data survey and an audience survey conducted by such offices as the post office or the statistics bureau. In the case of the "Transmission Operation" course in D I, practical training is conducted independently in such subjects as the basics of electricity, electronic circuit technology and measurements in transmitter operation. Also, as for the "Script/story Writing" course in D II, the training given is not so arranged as to directly relate to the training in programme production, and the participants are, instead, given practical training in scriptwriting for all stages of programme production, from news or material gathering and preparations to the actual writing of scripts for broadcast.

Table 2-3-15 How Practical Training is Conducted at the MMTC (fiscal 1989/90)

Course	Semesters Ⅰ (D Ⅰ) and Ⅲ (D Ⅱ)	Semesters Ⅱ (D Ⅰ) and Ⅳ (D Ⅱ)
D Ⅰ Programme Compilation Planning	• All the 24 trainees (once a week on Friday) • Introduction of radio and TV facilities at MMTC, and practical training in the study of broadcasting concepts relating to RRI and TVRI. [Places: Classrooms, studios, RRI and TVRI]	• Three groups: (further split up into two sub-groups) (3 days a week, on Monday, Tuesday and Wednesday) • Outside : Practical training at RRI and TVRI; data survey and audience opinion survey at POS & GIRO and Statistics Bureau • MMTC : Production training by taking part in "Programme Lines Production" and "News and Current Affairs Reporting" groups [Places: RRI and TVRI, government offices, classrooms and studios]
D Ⅰ Programme Lines Production D Ⅰ News and Current Affairs Reporting D Ⅰ Studio and Master Control Technical Operation	• First 5 weeks (once a week on Thursday); · Participants in each course will be divided into 3 groups. · Trainees will be taken around to have a look at 9 different types of equipment including Radio and TV audio, lighting, TV studio camera and VTR and to receive briefings on each (no operation). • During the next 9 weeks; · Four groups will be formed; TV-1, TV-2, R-1 and R-2. · Practical training in the production of a simple type of programme, taking 2-4 weeks to go through various stages from preparation to evaluation. (During this period, each group will produce 3 programmes in Radio or TV, totaling 12 radio and TV programmes.) · the programme-production groups and news-reporting groups will produce different programmes, while the trainees in engineering will participate in any one of these groups. · Each group will go through separate preparation stages and, when they come to the production stage, the engineers will join and together conduct rehearsal and recording. The evaluation of the programmes produced will also be done jointly. [Places: Classrooms, studios and outdoors]	• Three days a week, Monday, Tuesday and Wednesday • Trainees will be divided into 4 groups for "News and Current Affairs Reporting" and also 4 for "Programme Lines Production". (Six groups each in 1989) • During three weeks as a unit period, preparation, rehearsals, recording, post-production and evaluation will be conducted. • Each group will produce five different types of somewhat complex programs. • Equipment to be used: TV : Studio, OB van and ENGs Radio : ATRs • Trainees in "Studio and Master Control Technical Operation" will join at the recording and post-production stages. [Places: Classrooms, studios and outdoors]
D Ⅰ Transmission Operation	• Once a week on Thursday. • Trainees will be divided into six groups of 4 members. • Introduction of studio equipment, and basic training in such work as soldering, handling of electronic parts, measuring of voltage, handling of ammeters and oscilloscopes. [Places: Studio and electric-power training room]	• Three days a week, on Monday, Tuesday and Wednesday. • Trainees will be divided into three groups viz., TV transmitter, radio transmitter and electronic engineering experiments. Each group will be given training in different subjects in turn during the three-day period each week. • Radio and TV transmitters: Handling of equipment, various measuring methods, outdoors measurements. Electronic engineering experiments: Experiments on electronic circuits, amplifier, experimental assembly of logic circuits in transistors, outdoor measurement. [Places: Studio and electric-power training room]
D Ⅱ Script/story Writing	• Three days a week, on Monday, Tuesday and Wednesday. • Trainees will write scripts for six different types of Radio and TV programmes, such as information of cultural programmes • Training will be giving for a period of 9 weeks as a unit. 1st 3 weeks : Preparation & Hunting 2nd 3 weeks: Theme, Synopsis 3rd 3 weeks : Writing of the scripts • Three scripts will be written by each trainee who will continue the scriptwriting work further in the next semester. At the present stage, the trainees in this course will have no direct relations with the groups in other courses, such as Programme Production. [Places: Classrooms, outside MMTC]	• Two days a week, on Wednesday and Friday. • continuation of Semester Ⅲ. [Places: Classrooms and outside MMTC]
D Ⅱ Programme Package Production D Ⅱ Studio Production Technics	• Three days a week, on Monday, Tuesday and Wednesday. • Trainees will be divided into groups producing six different types of Radio and TV programmes, such as news, educational and cultural, and during a period of 1 to 3 weeks as a unit period, they will engage in preparation, rehearsal, recording, post-production and evaluation. • During the period of Semester Ⅲ, the trainees will be given practical training in the production of six of Radio and TV programmes each. [Places: Classrooms, studios, outdoors]	• Two days a week, on Wednesday and Friday. • Continuation of Semester Ⅲ. • Through Semester Ⅲ and Ⅳ, the trainees will be given practical training in the production of about 11 Radio and TV programmes. [Places: Classrooms, studios, outdoors]

2-3-4 How Training Other than the Diploma Courses (Enrichment Courses) is Conducted

At the MMTC, various training courses other than the Diploma Courses, which are also related to broadcasting, are conducted. They are called, at the MMTC, the Enrichment Courses. The Enrichment Courses are conducted by making use of the hours when the MMTC's facilities are not being used. The past records of Enrichment Courses conducted at the MMTC are given in Table 2-3-16. The Enrichment Courses may roughly be classified into three types. One of the three is the training given by JICA's short-term experts.

Table 2-3-16 Enrichment Courses

Year	Duration	Number of Days	Course	Number of Partici-pants
1985/86	10/1 ~ 11/5	31	Music and dance	24
		31	1 Courses	24
1986/87	7/16 ~ 10/11	74	TV transmitter No. 8	24
	10/11 ~ '87.1/10	76	TV transmitter No. 9	24
	8/27 ~ 10/4	33	Radio transmitter	25
	Total	183	3 Courses	73
1987/88	6/8 ~ 6/26	17	TV set design	16
	6/15 ~ 7/23	34	Radio produciton	20
	7/20 ~ 12/26	155	Radio and TV agriculture programme	13
	8/10 ~ 9/16	33	TV drama producing	12
	8/10 ~ '88.1/23	154	TV studio maintenance	12
	9/16 ~ 10/26	35	Radio maintenance	20
	10/5 ~ 10/30	23	Microwave technics	12
	12/2 ~ 1/10	33	Radio production	20
	12/8 ~ 12/10	3	TV documentary production	75
	'88.1/4 ~ 1/8	5	News report and editing	23
	'88/1/4 ~ 2/14	36	Radio programme planning	20
	Total	528	11 Courses	243
1988/89	3/25 ~ 8/16	124	TV transmitter	18
	3/30 ~ 4/6	7	Radio administration	21
	7/1 ~ 8/12	37	Rural programme practice	18
	7/18 ~ '89.1/19	161	Higher special knowledge	15
	7/26 ~ 9/2	34	Radio transmitter maintenance	20
	9/27 ~ 10/6	9	Radio news basics	20
	10/19 ~ 10/21	3	Cine film processing	15
	11/14 ~ 11/16	3	Radio media and effects	40
	11/17 ~ 12/12	23	TV measurement	12
	'89.1/2 ~ 3/4	36	Radio announcer	21
	Total	437	13 Courses	200
1989/90	7/24 ~ 8/4	10	Colour TV lighting	33
	8/28 ~ 9/1	5	Agriculture broadcasting in West Germany and Indonesia	30
	9/19 ~ 9/28	8	Radio production	14
	9/20 ~ 9/23	4	Workshop "Historical remedy"	10
	Total	27	4 Courses	87
	Grand Total	1,206	29 Courses	627

2-3-5 Current Condition of Training Facilities and Training Equipment

(1) Outline of the Existing Facilities

The MMTC is located in the Sleman district in the northeast of Yogyakarta city. This site is located along the Magelang road, which is a main highway linking Yogyakarta Semarang in the north of Java, and is in the suburbs of Yogyakarta about 6km to the north of the palace. The site is divided into three blocks. Table 2-3-17 below shows the area of each block and the main buildings standing on the site of each block.

The layout of the existing buildings is shown in Fig. 2-3-4, their ground floor plan in Fig. 2-3-5 and their first floor plan in Fig. 2-3-6.

Table 2-3-17 Main Facilities of MMTC

Block A	Site Area	37,515m²	(Total floor area)
	Existing training facilities	Reinforced concrete, 2-storied	5.495m²
	Auditorium	Reinforced concrete (partly steel-frame), 2-storied	929m²
	Library	Reinforced concrete, 2-storied	619m²
	Canteen	Reinforced concrete, single-storied	570m²
	Others (Guard house, transformer building, etc.)		100m²
		Sub-total	7,713m²
Block B	Site Area	About 6,300m²	
	There is no facility on the site which is currently used as farmland.		
Block C	Site Area	31,947m²	
	Trainees' dormitory "A"	Reinforced concrete, 4-storied	2,050m²
	Trainees' dormitory "B"	Reinforced concrete, 4-storied	1,750m²
	Staff's dormitory	Reinforced concrete, 2-storied	700m²
	Staff's housing	Wooden, single-storied	420m²
		Sub-total	4,920m²
Grand total:	Site area	75,762m²	
	Total floor area of the buildings	12,633m²	

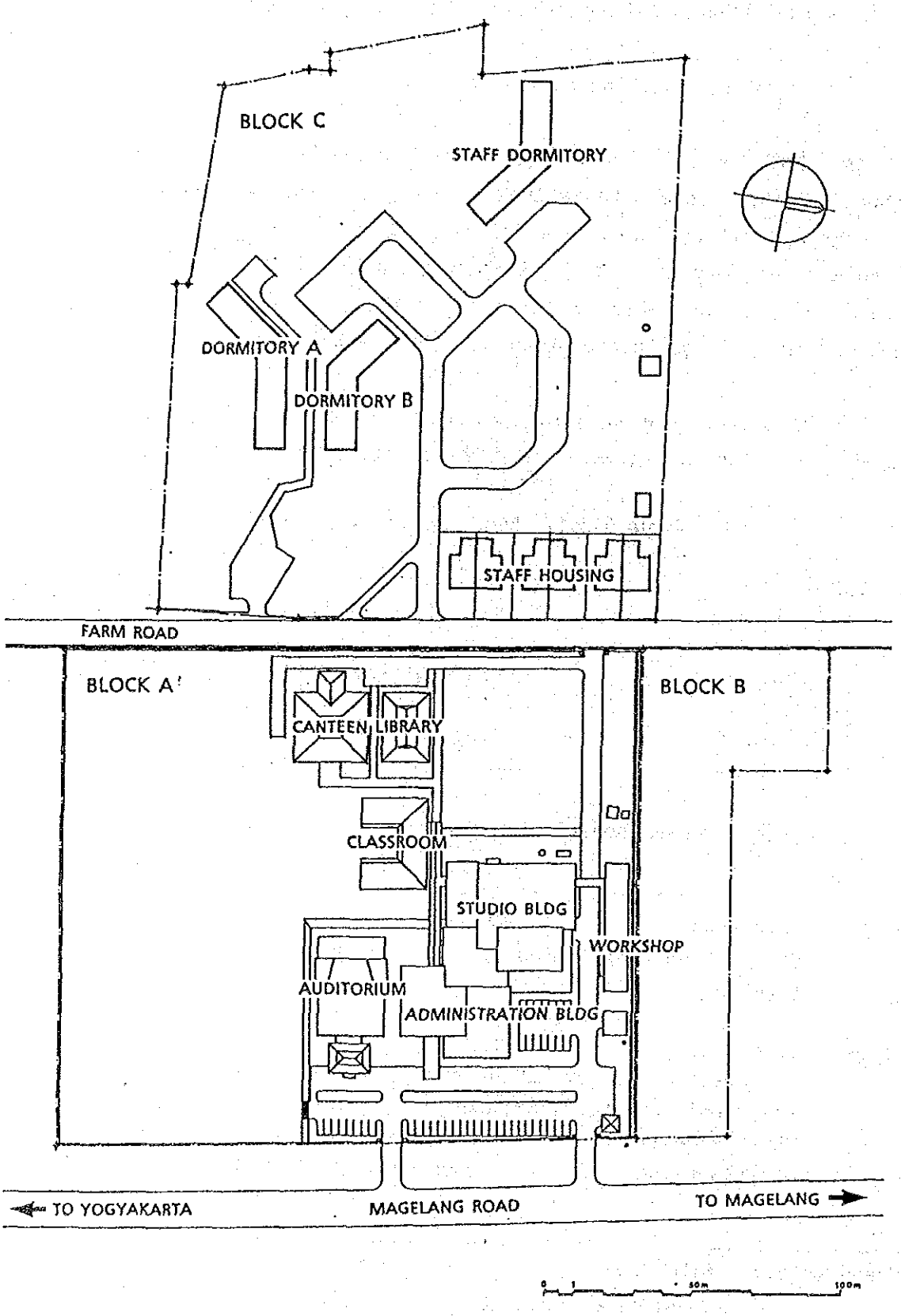
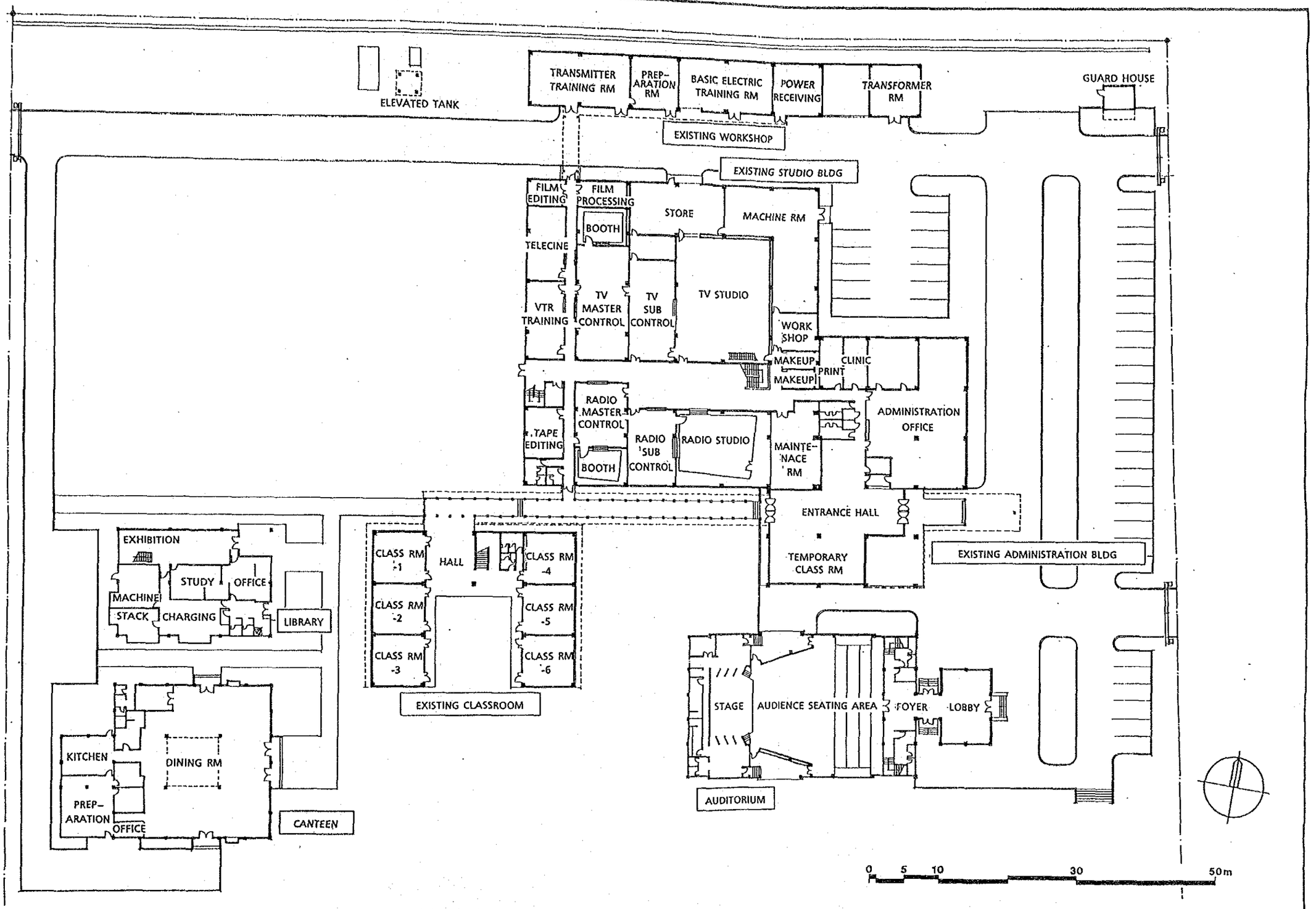


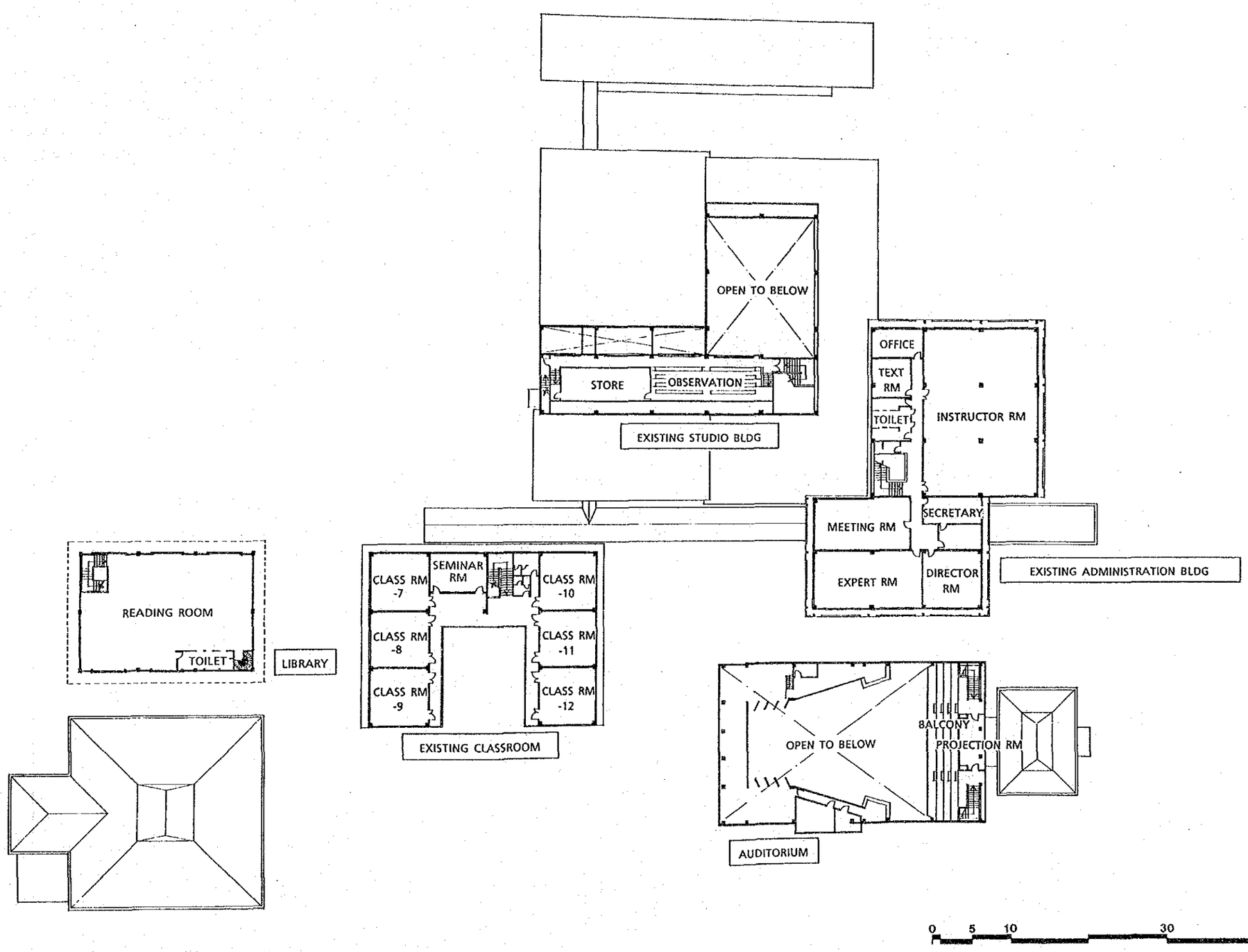
Fig. 2-3-4 Layout of Existing Facilities



THE BASIC DESIGN STUDY ON THE SUPPLEMENT PROJECT FOR THE RADIO AND TELEVISION TRAINING CENTRE IN YOGYAKARTA

Fig. 2-3-5

LAYOUT OF EXISTING BUILDING GROUND FLOOR PLAN 1:500



THE BASIC DESIGN STUDY ON THE SUPPLEMENT PROJECT FOR
THE RADIO AND TELEVISION TRAINING CENTRE IN YOGYAKARTA

Fig. 2-3-6

LAYOUT OF EXISTING BUILDING
FIRST FLOOR PLAN

1:500

(2) Composition and Contents of the Buildings

1) Existing Training Facilities

These facilities were constructed with grant aid offered by Japan and were delivered to the Indonesian side in June 1984. The facilities consist of an administration building, a studio building, a classroom building and a workshop building, as follows:

a) Administration building:

Administration office	311 m²
Clinic	26
Printing room	26
Instructor room	311
Deputy director office	26
Text room	29
Secretary	45
Director office	52
Expert office	104
Meeting room	91
Entrance hall	311
(incl. temporary classroom of 104m²)	
Total	1,379 m²

b) Classroom building:

Classrooms (52m² × 12 rooms)	624 m²
Store	35

c) Workshop building:

Transmitter training room	104 m²
Preparation room	52
Basic electric training room	104
Power receiving room	52

d) Studio building:

TV studio	259 m²
TV subcontrol room	104
TV master control room	116
TV announcer's booth	26
Radio studio	156
Radio subcontrol room	78
Radio master control room	65

Radio announcer's booth	39
Store	104
Telecine training room	58
VTR training room	58
Tape-editing training room	39
Film-developing training room	26
Film-editing training room	19
Makeup room (15m² × 2 rooms)	30
Workshop	39
Training equipment maintenance room	78
Observation corrider	93
Air conditioning machine room	181
Total floor area (net)	3,918 m²

The auditorium, library, canteen and the dormitories were constructed by the Indonesian side, as follows:

2) Auditorium:

Audience seating area	477 m²	(ground floor: 325m² 1st floor: 152m²)
Stage	184	(incl. dressing room and makeup room)
Entrance hall	91	
Foyer	32	
Toilets	59	
Machine room, etc.	68	

The audience seats are of a system in which movable chairs are arranged according to required capacity. The maximum capacity is 450 seats.

3) Library:

Open-shelf reading room	288 m²
Administration office	38
Stack room	103
Research room	23
AV teaching material storeroom	17
Entrance hall and exhibition room	81

Toilets	50
Machine room	14

On the ground floor are such rooms as the administration office and stack room, while the entire 1st floor is used as an open-shelf reading room.

4) Canteen:

Dining room	311 m^2
Instructors' dining room	15
Kitchen	104
Pantry	56
Store	30
Office	32
Toilets	12

Meals can be served to a maximum of 200 persons at a time.

5) Trainees' dormitory

Each room, about 16m^2, is to be shared by two persons and a toilet and shower set is to be shared by the residents of two rooms. Table 2-3-18 shows an outline of trainees' dormitories.

Table 2-3-18 Main Facilities of MMTC

Building	Number of rooms	Capacity	Remarks
Trainees' dormitory "A"	66	132	For female trainees and instructors
Trainees' dormitory "B"	65	130	For male trainees

Twenty-two rooms in trainees' dormitory "A" are currently used as a family dormitory for the instructors, so the actual maximum capacity of the trainees' dormitory is 218 instead of 262.

6) Staff's Dormitory

A 2-storied apartment building consists of ten 70m^2 housing units.

7) Staff's houses

There are three terrace houses accommodating six households, each household occupying living quarters of about 70m^2.

(3) How the Existing Training Facilities are Used

The existing training facilities are maintained well. The routine sweeping and cleaning are done adequately and repainting of exterior walls and checking and repairing of air conditioners are also conducted regularly. The actual conditions of use of main rooms are as follows:

1) Classroom building

One room is allocated to each class. The classrooms are used under the so-called "homeroom" system. Each classroom is 52m^2 and can accommodate 24 persons. During 1989/90, five D-I courses and three D-II courses, totaling eight courses, were conducted. The D-I courses used five rooms on the ground floor and D-II courses used three rooms on the 1st floor. The remaining four classrooms are normally used for short-term training courses other than the Diploma Courses. The eight classrooms used for the Diploma Courses are provided with an air-conditioning system by the Indonesian side. When a joint lecture class is conducted on such subjects as language or religion, such classes are normally given in a temporary classroom (104m^2, 70 seats) which is provided by partitioning a part of the entrance hall. Besides this, the auditorium (capacity: 450 seats) is occasionally used for joint classes with a large audience.

The weekly time schedules for the Diploma Courses are as shown in Tables 2-3-11 ... 2-3-13. For these courses, the classrooms are used as follows:

a) Allocation of Classrooms

At present, eight classrooms are reserved for regular use by five classes of D-I and three classes of D-II, so that most of the lectures for these two courses may be given in these rooms.

b) Conducting of Joint Lectures

The general subjects, such as Indonesian, English, religion, national ideals and introduction to survey methods, are generally taught in the form of joint lectures, using, at present, the auditorium and the temporary classroom.

The number of times used by D-I and D-II courses combined

are: three times a week in the auditorium and once a week in the temporary classroom during the 1st semester, and once a week for both the auditorium and the temporary classroom during the 2nd semester.

c) Usage of Classrooms for Practical Training

As will be explained later in item 5), the classrooms are used not only as a studio or a practical training room but also for preparations for practical training, and for preparations, discussions and evaluations by different training groups.

A far as the Diploma Courses as mentioned above are concerned, the usage rate of the classrooms hitherto has been confined to 67%. However, from another point of view, it may be said that, because of the lack of a joint classroom, the training courses at present inevitably have to be conducted occasionally in the auditorium or the provisional classroom in the lobby, both of which are not quite suited for such use from the point of view of the structure and environmental conditions.

At MMTC, in addition to the Diploma Courses mentioned above, the Enrichment Courses have been conducted in recent years and the number of such courses now reaches 13 to 15 each year. At peak times, about five Enrichment Courses are conducted in parallel in addition to the Diploma Courses. At such times, the usage rate of classrooms rises close to 100%, which means that the training facilities are being used effectively enough.

2) Administration building

The administration office is located on the ground floor by the entrance hall. Its floor area is 311m^2. At present, the office is used by 25 staff members. By partitioning a part of this room, a space is provided to install a PABX and an automatic fire alarm receiver. The instructors' office on the 1st floor is also 311m^2 in area and is currently used by 14 regular instructors. According to the standards set by the Ministry of Education and Culture of Indonesia for office areas, a floor space of 6-7m^2

should be made available to each person for general staff. This means that both the administration office and the instructors' office can accommodate about 50 persons each.

(4) Current Condition of Training Equipment

Table 2-3-19 shows the current condition of grant aid equipment, technical cooperation equipment and expert's equipment. As the tables show, administration and utilisation of equipment are generally good.

Incidentally, in this table, the utilization and management conditions have been evaluated in three stages, from A to C. In making this evaluation, the opinion of the technical-cooperation expert has also been solicited for reference purposes. The reasons for evaluation "C" are specifically stated on page 129 and thereafter.

Table 2-3-19 Current Condition of Training Equipment

Condition of grant aid equipment

	Item	Quan-tity	Utili-zation	Adminis-tration	Supplied date
I	TV studio equipment				
A	Production equipment				1984. 6.21
1	Color camera (NC-37)	3	A	A	〃
2	Video production equipment (TAKS-2000)	1S	A	A	〃
3	Audio production equipment (16SXM-42A)	1S	A	A	〃
4	Monitoring equipment	1S	A	A	〃
5	Lighting system	1S	A	A	〃
6	On-air sign	3	A	A	〃
7	Studio intercom (OK6681A)	1S	A	A	〃
B	Programme control equipment				
1	Portable color camera (NMC-828)	1S	A	A	〃
2	Character generator	1S	A	A	〃
3	Video control equipment	1S	A	A	〃
4	Audio control equipment (125XM-42A)	1S	A	A	〃
5	Monitoring equipment	1S	A	A	〃
6	Video processing amplifier (TAP-180C)	1S	A	A	〃
7	Lighting equipment	1S	A	A	〃
8	On-air sign	2S	A	A	〃
9	Studio intercom (OK6682A)	1S	A	A	〃
10	Audio rack	1	A	A	〃
C	TV master control equipment				
1	Video/audio switching equipment	1S	A	A	〃
2	Monitoring equipment	1S	A	A	〃
3	Operator's chair	2	A	A	〃
D	VTR				
1	1" Helical VTR (BVH2000PS-02)	2	A	A	〃

Note S: SET A: excellent B: good C: fair

Item	Quan-tity	Utili-zation	Adminis-tration	Supplied date
2 3/4" cassette VTR (BVU – 800P)	2	A	A	1984. 6.21
3 Video/audio switching equipment	1S	A	A	〃
4 Monitoring equipment	1S	A	A	〃
E Telecine and FSS				
1 Color telecine chain	1S	B	A	〃
2 16mm magnetic film recorder/reproducer (DSL30)	1S	B	A	〃
3 Video/audio switching equipment	1S	B	A	〃
4 Monitoring equipment	1S	A	A	〃
5 Color FSS (TGK203 ICS – IC0)	1S	A	A	〃
F Sync equipment				
1 Sync pulse generator (251D)	1S	A	A	〃
2 Sync pulse distributor	1S	A	A	〃
3 Cabinet rack assembly	1S	A	A	〃
G ENG Equipment				
1 Portable color camera (MNC – 82B)	1S	A	A	〃
2 Portable VCR (BVU – 110P)	1S	A	A	〃
3 Portable lighting equipment (LB – 5)	1S	A	A	〃
H Film editing machine and 16mm movie camera				
1 16mm sound fitting table	1S	B	A	〃
2 16mm silent editing table	1S	B	A	〃
3 Editing room equipment	1S	B	A	〃
4 16mm movie camera (16MS)	1S	B	A	〃
5 16mm film projector (SC – 10)	1S	B	A	〃
I Film processing equipment				
1 16mm color film developing machine (EXPER II – 30)	1S	C	A	〃

Note S : SET A : excellent B : good C : fair

Item		Quan-tity	Utili-zation	Adminis-tration	Supplied date
2	Analysis equipment	1S	C	A	1984. 6.21
3	Water boiler	1	C	A	〃
4	Chemicals	1S	C	A	〃
5	Others	1S	C	A	〃
J	Other equipment and materials				
1	Video tape	1S	A	A	〃
2	16mm magnetic tape	10	B	B	〃
3	Audio tape	10	A	A	〃
4	Accessories (Extender, patching cord, etc.)	1S	A	A	〃
5	Walkie talkie (ICB-870T)	1S	A	A	〃
6	Tape eraser	1S	A	A	〃
II	Radio studio equipment				
A	Production studio equipment				
1	Mixing console (16SXM-42B)	1S	A	A	〃
2	Tape recorder (EN-3301RGE)	2	A	A	〃
3	Disc player (DN-308F-E)	2S	A	A	〃
4	Microphone (Dynamic and condenser)	8	A	A	〃
5	Microphone stand	6	A	A	〃
6	Monitor speaker (2S-305)	4	A	A	〃
7	Reverberation unit (REVAC6A)	1	A	A	〃
8	On-air sign	2	A	A	〃
9	Operator's chair (K-110A)	1	A	A	〃
10	Headphone (DR-531A)	1	A	A	〃
11	Audio rack (for cassette tape recorder)	1	A	A	〃
12	Microphone extension cable	3	A	A	〃
B	Programme control studio equipment				
1	Mixing console (125XM-42B)	1S	A	A	〃

Note S: SET A: excellent B: good C: fair

	Item	Quan-tity	Utili-zation	Adminis-tration	Supplied date
2	Tape recorder/reproducer (DN-3301RGE)	2S	A	A	1984. 6.21
3	Cartridge tape recorder (ER-810)	1S	A	A	〃
4	Disc player (DN-308F-E)	2S	A	A	〃
5	Monitor speaker (2S-305)	2S	A	A	〃
6	Dynamic microphone (F-770)	1	A	A	〃
7	Microphone desk stand (MS-10)	1	A	A	〃
8	Operator's chair (K-110A)	1	A	A	〃
9	On-air sign	2	A	A	〃
10	Headphone (DR-531A)	1	A	A	〃
11	Announcer operation box (OK6305A)	1	A	A	〃
12	Announcer table (OK6304)	1	A	A	〃
13	Announcer chair	1	A	A	〃
14	Audio rack (for cartridge tape recorder)	1	A	A	〃
15	Microphone extension cable	1	A	A	〃
C	Tape editing machine				
1	Editing tape recorder (DN-83PK)	4S	A	A	〃
2	Tape recorder accessories	1S	A	A	〃
3	Working table	4	A	A	〃
4	Operator's chair	4	A	A	〃
D	Radio master control equipment				
1	Audio distribution amplifier	6	A	A	〃
2	Audio switching equipment (OK6679A)	1	A	A	〃
3	Audio limiting amplifier (ALA5202)	1	A	A	〃
4	Cabinet rack assembly (D07143A)	1	A	A	〃
5	Master console	1	A	A	〃
6	Monitor speaker (2S-305)	2	A	A	〃
7	Operator's chair (K-110A)	1	A	A	〃

Note S: SET A: excellent B: good C: fair

Item		Quan-tity	Utili-zation	Adminis-tration	Supplied date
E	Radio OB van equipment				
1	Wireless programme relay equipment	1S	A	A	1984. 6.21
2	Programme remote pick-up equipment	1S	A	A	〃
III	Transmitter				
A	1kW AM transmitter (RM-41GS)				
1	1kW all solid-state AM radio transmitter	1S	A	A	〃
2	2kW dummy load	1	A	A	〃
3	Programme input equipment (PIE)	1S	A	A	〃
B	100W VHF TV transmitter				
1	100W VHF TV transmitter (TBV-1220SH)	1S	A	A	〃
2	Output coaxial equipment	1S	A	A	〃
3	Programme input and monitoring equipment	1S	A	A	〃
4	Accessories	1S	A	A	〃
C	TV translator				
1	50W UHF TV translator (SVU25GID)	1S	A	A	〃
2	Dummy load (75W)	1	A	A	〃
3	Accessories	1S	A	A	〃
IV	Measuring equipment				
1	TV test signal generator (TG-5E)	2S	A	A	〃
2	Wideband oscillator (MG-442A)	1S	A	A	〃
3	Standard signal generator (MG523B)	1S	A	A	〃
4	TV IF signal generator (MSG26515)	1S	A	B	〃
5	VHF sweep generator (4470E)	1S	A	A	〃
6	Distortion meter/oscillator (796F)	1S	A	A	〃
7	Frequency counter (MF-63A)	1S	A	A	〃
8	Spectrum analyzer (MS62A)	1S	A	A	〃

Note S: SET A: excellent B: good C: fair

	Item	Quan-tity	Utili-zation	Adminis-tration	Supplied date
9	Oscilloscope (SS5416A, SS711)	4S	A	A	1984. 6.21
10	Envelope oscilloscope (2320)	1S	A	A	〃
11	Vectorscope	1S	A	A	〃
12	AM side band analyzer (2610)	1S	A	A	〃
13	Nil				
14	Envelope delay measuring set (201/2)	1S	A	A	〃
15	DG/DP measuring equipment (948A)	1S	A	A	〃
16	Color video noise meter (925D/2)	1S	B	A	〃
17	Network analyzer (8754A)	1S	B	A	〃
18	Field strength meter (ML-518A)	1S	B	A	〃
19	White balance checker (8988)	1	B	B	〃
20	Illumination meter (T-1)	1	A	A	〃
21	Color meter	1	B	A	〃
22	Projection stand (NPL-3)	1S	A	A	〃
23	Wow flutter meter (MK-667D)	1S	B	A	〃
24	Modulation monitor (AM-90)	1S	A	A	〃
25	Nil				
26	TV receiver monitor (CVM-1370QE)	3	A	B	〃
27	Variable attenuator (AL255, M215C, AL502B)	7	B	A	〃
28	Nil				
29	Nil				
30	Low-pass filter circuit for video	1S	A	A	〃
31	High-pass filter circuit for video	1S	A	A	〃
32	CCIR weighting network for audio	1S	A	A	〃
33	Power meter (25/75W, 50/150W)	2	A	A	〃
34	LCR meter (AG-4301)	1	A	A	〃
35	Operating impedance bridge (MZ-810)	1	C	A	〃
36	Transistor test set (TCH-12)	1	A	A	〃
37	Circuit tester (3201)	10	A	A	〃
38	Electronic voltmeter (ML69A)	2S	B	A	〃

Note S: SET A: excellent B: good C: fair

	Item	Quan-tity	Utili-zation	Adminis-tration	Supplied date
39	DC voltmeter/ammeter (2051 – 03~06)	4	A	A	1984. 6.21
40	AC voltmeter/ammeter (2052, 2053)	4	A	A	〃
41	Clip-on AC power meter (2433)	1	A	A	〃
42	Insulation resistance tester (3213 – 24 1000 MΩ)	1S	B	A	〃
43	Earth tester (3235)	1S	B	A	〃
44	Milliohm meter (VP – 2941A)	1S	B	A	〃
45	Temperature meter	1S	C	A	〃
46	DC power supply (GP050 – 2)	2S	A	A	〃
47	Tool set (S – 10)	5S	A	A	〃
48	Test chart	2S	A	A	〃
49	Test film SMPTE	1S	C	A	〃
50	Test film	1S	C	A	〃
51	Test slide	1S	C	A	〃
52	Simple photograving and repairing kit for printed board	1S	A	A	〃
V	Power supply				
1	IVR panel 100kVA	1S	A	A	〃
2	Incoming and switching panel	1S	A	A	〃
3	Isolation transformer panel (175kVA)	1S	A	A	〃
4	Distribution board	1S	A	A	〃
VI	Engineering communication and clock system				
A	Engineering communication				
1	Operation box (10 channel with microphone and speaker)	10	A	A	〃
2	Connection panel for operation box	1S	A	A	〃
3	Power supply panel	1S	A	A	〃
B	Clock system				
1	Quartz master clock system (QC – 88 – B)	1S	A	A	〃
2	Slave clock (1 second, 3 – 1573)	11	A	A	〃

Note S : SET A : excellent B : good C : fair

Item	Quantity	Utilization	Administration	Supplied date
3 Slave clock (30 second, SC-301)	14	A	A	1984. 6.21
Ⅶ Observation and meeting room				
A Observation room equipment				
1 20" color picture monitor (TPMC-511A)	1	A	A	〃
2 12" picture monitor (TPM-3108)	12	A	A	〃
3 Monitor speaker (10 MP-1)	2S	A	A	〃
4 Monitor shelf	1	A	A	〃
B Meeting room equipment				
1 22" color TV receiver monitor (CVM-2250E)	1	B	B	〃
2 Monitor speaker (10 MP-1)	1	B	B	〃
3 Speaker stand	1	B	B	〃
4 TV monitor stand	1	B	B	〃
Ⅷ Air conditioner				
1 Air conditioner (PW-60)	3S	A	A	〃

Note S: SET A: excellent B: good C: fair

Condition of 1984 technical cooperation equipment

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
1 Office equipment				
(1) Photocopy machine (FT – 4060)	2	A	A	1984. 12. 3
(2) Typewriter (EX – 43N)	5	A	A	〃
(3) Calculator (SL – 1000, FX – 960)	8	A	B	〃
(4) Monthly schedule board (900 × 1800mm)	4	A	A	〃
(5) Personal computor (PC – 8801 MK)	3	A	A	〃
(6) Word processor software (for PC – 8801)	3	A	A	〃
(7) Plotter (MP – 1000 – 31)	2	B	A	〃
2 Vehicle				
(1) Patrol van (diesel)	2	A	A	〃
3 Measuring equipment				
(1) Field strength meter (M262E)	1	A	A	〃
(2) Vector impedance meter (4193A)	1	B	A	〃
(3) High voltage wide band probe (P6015)	2	B	A	〃
(4) Frequency convertor (MH650A)	1	B	A	〃
(5) Staircase unit (for TG – 5E/2)	2	A	A	〃
(6) Audio frequency characteristics measuring equipment (DPA – 221A)	3	A	A	〃
(7) Oscilloscope (CS – 1022)	10	A	A	〃
4 Programme production equipment				
(1) Beta movie camera (BMC – 100)	1	A	A	〃
(2) Beta VTR (SL – FE)	1	A	A	〃
(3) Color monitor (KX – 1211HG)	1	A	A	〃
(4) Video cassette tape (L-500UHG)	20	A	A	〃
(5) Battery charger (AC – MI00)	1	A	A	〃

Note S : SET A : excellent B : good C : fair

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
(6) Spare battery (NP – 11)	1	A	A	1984. 12. 3
(7) Speaker (SS – X1A)	1	A	A	〃
(8) Audio cable (RK – C74)	1	A	A	〃
(9) Spare parts, cords and tools	1	A	A	〃

Note S : SET A : excellent B : good C : fair

Condition of 1985 technical cooperation equipment

Item	Quantity	Utilization	Administration	Arrival date
1 Programme production equipment				
(1) VHS-VTR (FR-7600MS)	1	A	A	1985. 7. 3
(2) Betamax VTR (SL-T50ME)	2	A	A	1985. 8. 8
(3) U matic VTR (BVU-800 NTSC)	1	A	B	〃
(4) U matic VTR (BVU-800P PAL)	1	A	A	〃
(5) Color video monitor (PVM2010QM)	5	A	A	〃
(6) Audio monitor (2055)	3	A	A	〃
2 Office equipment				
(1) White board (900×1800mm)	5	A	A	1985. 7. 3
(2) Overhead projector (HP2450)	5	A	A	〃
(3) 35mm slide projector	1	A	A	〃
(4) Calculator (fx-961)	26	A	A	〃
3 Photography equipment				
(1) 35mm camera (Asahi Pentax)	2	A	A	〃
(2) Polaroid camera (M-0850)	2	A	A	〃
(3) Binoculars (7×50, 7×35)	2	B	A	〃
(4) Cassette tape recorder (TRK-6701W)	5	A	A	〃
(5) Munsell's cube	2	B	B	〃
(6) Refrigerator (R305CH)	2	A	A	〃
4 Video shooting equipment				
(1) Color camera (BVW-3AP)	1	A	A	1985. 5. 8
(2) Zoom lens (BVW-3AP)	1	A	A	〃
(3) Battery (NP-1)	4	A	A	〃
(4) Battery charger (BC-1WA)	2	A	A	〃
(5) Tripod and pan head	1	A	A	〃
(6) Video cassette tape (HG-20)	100	A	A	〃

Note S: SET A: excellent B: good C: fair

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
5 Training equipment				
(1) Training kits (ITF-01, ~05)	15	B	A	1985. 11. 8
(2) Circuit tester (JP-8D)	15	A	B	1985. 7. 3
(3) Dip meter (DMC-230S)	3	B	A	〃
(4) Antenna analyzer (AZ-1)	3	B	A	〃
6 TV OB van equipment				
(1) Color TV camera (MNC-100)	2	A	A	1986. 4. 5
(2) Video equipment	1	A	A	〃
(3) Audio equipment	1	A	A	〃
(4) Monitoring equipment	1	A	A	〃
(5) VTR (3/4" U matic)	1	A	A	〃
(6) Transmitter	1	A	A	〃
(7) Microwave transmitter and receiver (TVL-113G)	1	A	A	〃
(8) Van	1	A	A	〃
(9) Expendables and repairing tools	1	A	A	〃
7 Classroom equipment				
(1) White board	5	A	A	1986. 4. 20
(2) Overhead projector	5	A	A	〃
(3) 35mm slide projector	1	A	A	〃
(4) VHS-VTR (NTSC, PAL, SECAM)	3	A	A	〃
(5) BETA-VTR (NTSC, PAL, SECAM)	2	A	A	〃
(6) U matic VTR (BVU-800P)	1	A	A	〃
(7) 1/2" VHS cassette tape (for 120')	50	A	A	〃
(8) 1/2" Beta cassette tape (for 120')	50	A	A	〃
(9) U matic cassette tape (for 60')	40	A	A	〃
(10) Color monitor (TC-AL2100)	7	A	A	〃

Note S: SET A: excellent B: good C: fair

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
8 Programme production equipment				
(1) Portable audio tape recorder (TC-D5)	5	A	A	1986. 4. 20
(2) Audio tape editing machine (TCD-5)	5	A	A	〃
(3) Aduio 6mm open tape	50	A	A	〃
(4) Betacam VTR reproducer (BVW-20)	1	A	A	〃
9 Transmitter equipment				
(1) FM stereophonic transmitter (FBN-11, 1kW)	1	A	A	〃
(2) MF AM transmitter (RM-41JS, 1kW)	1	A	A	〃
(3) MF antenna diplexer (DX-41A)	1	B	A	〃
(4) UHF antenna multiplexer (50CU-12)	1	B	A	〃
(5) SSB transmitter (NSD-515)	2	C	A	〃
(6) SSB receiver (NRD-515)	2	A	A	〃
(7) Linear amplifier (TL-922)	4	C	A	〃
10 Training equipment				
(1) Microwave training set	3	B	A	〃
(2) Waveform monitor (1481-C)	3	B	A	〃
(3) Function generator (FG-270)	15	B	A	〃
(4) Simple type field strength meter (KTV-603II)	3	B	A	〃
(5) Sweep generator unit (for TG-5E)	2	A	A	〃
(6) Oscilloscope (CS-1022)	5	B	A	〃
(7) Software for word processor (for PC-8801)	3	B	A	〃
11 Audio OB equipment and radio car				
(1) FM transmitter for broadcasting relay (5W)	1	A	A	1986. 4. 23
(2) FM receiver for broadcasting relay (159MHz)	1	A	A	〃
(3) Radio car (EE-1970)	1	A	A	〃

Note S: SET A: excellent B: good C: fair

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
12 Vehicle				
(1) Microbus (BB204 - MDR)	1	A	A	1986. 2. 17

Note S : SET A : excellent B : good C : fair

Condition of 1986 technical cooperation equipment

Item	Quantity	Utilization	Administration	Arrival date
1 TV OB van equipment				
(1) Color TV camera (MNC-100)	2	A	A	1986. 10. 14
(2) Video equipment	1	A	A	〃
(3) Audio equipment	1	A	A	〃
(4) Monitoring equipment	1	A	A	〃
(5) VTR (3/4" U matic)	1	A	A	〃
(6) Transmitter equipment	1	A	A	〃
(7) Microwave transmitter and receiver (TVL-113G)	1	A	A	〃
(8) Van	1	A	A	〃
(9) Expendables and repairing tools	1	A	A	〃
2 Programme production equipment				
(1) Editing machine	1	A	A	1986. 11. 4
(2) U matic VTR (for editing)	2	A	A	〃
(3) TBC (for U matic)	2	A	A	〃
(4) Betacam editing machine (PAL, W/TBC)	1	A	A	〃
(5) 9 pin interface (for BVE-800)	3	A	A	〃
(6) Video/audio switcher (for BVE-800)	1	A	A	〃
(7) Video monitor (13", 4 system)	3	A	A	〃
(8) Editing table	1	A	A	〃
(9) Monitor desk	1	A	A	〃
(10) Side rack	3	A	A	〃
(11) Audio mixer (12-CHANNEL)	1	B	A	〃
(12) Audio monitor (2-SPEAKER)	1	A	A	〃
(13) Condensor microphone	1	A	A	〃
(14) Spare parts	1	A	B	〃
3 Measuring equipment				

Note S: SET A: excellent B: good C: fair

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
(1) Stereophonic FM broadcasting measuring equipment (GE502)	1	A	A	1986. 11. 4
(2) Audio characteristics measuring equipment (DPA-221A)	1	A	A	1986. 9. 25
(3) Oscilloscope (VP-5102B)	2	A	A	〃
(4) Simple type audio oscillator	1	A	A	〃
(5) Variable attenuator	2	B	A	1986. 11. 4
4 TV antenna parts				
(1) Antenna parts	6	B	A	1986. 9. 25
(2) Feeder parts	1	B	A	〃
(3) Dehydrator	1	B	A	〃
5 TV system convertor (LT/21)	1	A	A	1986. 11. 4

Note S: SET A: excellent B: good C: fair

Condition of 1987 technical cooperation equipment

Item	Quantity	Utilization	Administration	Arrival date
1 Classroom equipment				
(1) Engine generator (EM-1400X)	2	A	A	1988. 1. 14
(2) Photocopy machine (FT-4065)	2	A	A	〃
(3) Close-up equipment (2387-540)	1	B	A	〃
(4) Audio tape high speed dubbing machine (CCP200)	1	B	A	〃
(5) Spotting scope (3010-540, TSN-1)	2	B	A	〃
(6) Flexible stand (2247-110)	5	A	A	〃
2 Electric power training equipment				
(1) Transformer experiment equipment (C-5720)	1	B	A	〃
(2) Load for experiment (LC, LL, LR)	3	B	A	〃
(3) Induction voltage regulator (KVR-302)	1	B	A	〃
(4) Transformer (TA-5 kVA)	1	A	A	〃
(5) Sequence trainer (RS-11A)	1	A	A	〃
(6) Clamp power and power factor meter (3163)	2	A	A	〃
(7) clamp leakage current meter (3263)	2	A	A	〃
(8) Battery megger (3110-01, ~-05)	5	A	A	〃
(9) Phase detector (3122)	5	A	A	〃
3 Electronics training equipment				
(1) AC bridge (LCR-6)	1	A	A	〃
(2) Variable attenuator (RA920, UVA761A)	4	A	A	〃
(3) Dial type resistor (RD-54LA)	2	A	A	〃
(4) Slide resistor (3310-550, SR-3)	2	A	A	〃
(5) DC/AC ammeters and volt meters	16	A	A	〃
(6) DC power supply (LPS-160-3)	12	A	A	〃
(7) Slidac (S-260-5)	5	A	A	〃
(8) Frequency counter (EUC-6)	1	A	A	〃
(9) TG-5E unit (3U48)	1	A	A	〃

Note S: SET A: excellent B: good C: fair

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
(10) Q meter (MQ-1601)	1	B	A	1988. 1. 14
(11) Vaccum tube tester (VG-4G-N)	1	C	A	1988. 4. 13
(12) Envelope oscilloscope (2320)	1	A	A	1988. 1. 14
(13) SWR type power meter (SP-350)	1	B	A	〃
(14) UHF receiver (GRECOM 50DS)	1	C	A	〃
(15) Radio frequency ammeter (2016-01, 02 and 03)	3	B	A	〃
4 Studio equipment				
(1) Camera crane (TK-28)	1	A	A	1988. 4. 13
(2) CD player set	1S	A	A	1988. 1. 14
(3) Grand piano	2S	A	A	〃

Note S: SET A: excellent B: good C: fair

Condition of 1988 technical cooperation equipment

Item	Quantity	Utilization	Administration	Arrival date
1 Studio equipment				
(1) Color corrector (CCS-4400)	1	A	A	1989. 3. 31
2 Location practice equipment				
(1) 9" picture monitor	2	A	A	〃
(2) Simple type audio mixer	2	A	A	〃
(3) Betacam camera (BVW-505P)	1	A	A	〃
3 News gathering training equipment				
(1) Super beta movie (GCS-1)	1	A	A	〃
4 Electronics training equipment				
(1) Logic analyzer (VP-3661A)	1	C	A	〃
5 Maintenance parts				
(1) Spare board for 1" VTR	1s	C	A	〃
(2) Spare board for betacam	1s	C	A	〃

Note S: SET A: excellent B: good C: fair

Condition of 1989 technical cooperation equipment

Item	Quantity	Utilization	Administration	Arrival date
1 Outdoor production practice equipment				
(1) VTR built-in 3 CCD camera (BVW-507P)	3	A	A	1990. 2. 20
(2) Motor driven zoom lens for BVP (J13X9BI-BA9)	3	A	A	〃
(3) Tripod with dolly (VSF-3000SD)	3	A	A	〃
(4) Small tripod for VSF-3000DJ (FT-30S)	3	A	A	〃
(5) Battery case for BP-90 (DC-210)	5	A	A	〃
(6) Operation manual (HZY36400)	1S	A	A	〃
(7) Video light set (Y-047)	2	A	A	〃
(8) Battery for lighting (DP-2460)	4	A	A	〃
(9) Battery charger (KD-220)	2	A	A	〃
2 Video editing practice equipment				
(1) Betacam player (BVW-65P)	2	A	A	〃
(2) Betacam recorder (BVW-70P)	2	A	A	〃
(3) Automatic editor	2	A	A	〃
(4) Color video monitor (PVM-1440QM)	4	A	A	〃
(5) System console (S7-820 and RMM-100)	2S	A	A	〃
(6) 1" video tape (V-16-64A)	20	A	A	〃
(7) Video tape for betacam (BCT-20G)	100	A	A	〃
3 Audio equipment for location				
(1) Mixing amplifier (SS-403)	2	A	A	〃
(2) Super directivity microphone (MKH-416TU)	2	A	A	〃
(3) Wind screen cover (MZW-400 and MHC-400)	2	A	A	〃
(4) Hand grip (HGS-416W and MZW-415)	2	A	A	〃
(5) Non-directivity microphone (ECM-55)	4	A	A	〃
(6) Headphone receiver (HA-D600)	2	A	A	〃
(7) Microphone cord	4S	A	A	〃
(8) Case for equipment	2	A	A	〃

Note S: SET A: excellent B: good C: fair

Item	Quantity	Utilization	Administration	Arrival date
(9) Battery for microphone and amplifier (AKB-11)	2	A	A	1990. 2. 20
4 Electronics training equipment				
(1) Spectrum analyzer (TR-4133B)	1	C	A	〃
5 Maintenance parts				
(1) Plumbicon for studio camera	3	*	A	〃
6 Equipment for making training materials				
(1) Photocopy machine set				
a. Photocopy machine (FT-4490)	2	A	A	〃
b. Setting table	2	A	A	〃
c. Developer	2	A	A	〃
d. A3 drum	2	A	A	〃
e. Paper feeder (DF-34)	2	A	A	〃
f. Sorter (CS-2070)	2	A	A	〃

Note S: SET A: excellent B: good C: fair

* · · · these plumbicons are not used unless main equipment is in trouble.

Condition of 1984 expert's equipment

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
VTR	1S	A	A	1984. 7. 23
Monitor TV	1S	A	A	〃
Cassette tape recorder	1S	A	A	〃
Personal computer	1S	A	A	〃
Video tape	150	A	A	〃
Cassette tape	50	A	A	〃
VTR camera (GR-C1)	1S	A	A	〃
Battery pack (NB-P6)	2	A	A	〃
AC power adapter (AA-P1)	1	A	A	〃
Battery charger (BB-P1)	1	A	A	〃
Shoulder frame (SF-P1)	1	A	A	〃
Carrying case (CB-P1)	1	A	A	〃
Cassette adapter (C-R2)	1	A	A	〃
VHS cassette tape	6	A	A	〃
VTR (VT-35)	1S	A	A	〃
Video tape (VHS)	40	A	A	〃
Data file	17S	A	A	〃
Manuals	93	A	A	〃
Books	25	A	A	〃
Video tape	10	A	A	〃
Cassette tape	10	A	A	〃
Data file	1S	A	A	〃
Data file	27	A	A	〃
Books	17	A	A	〃
Cassette tape	15	A	A	〃
Stationary	1S	A	A	〃
Books	26	A	A	1984. 11. 15
Cable, connector and stationary	1S	A	A	〃
Video tape recorder	1S	A	A	1985. 3. 29

Note S: SET A: excellent B: good C: fair

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
VHS Video tape (E-60)	20	A	A	1985. 3. 29
Books	24	A	A	〃
VTR (HR-7600MS)	1S	A	A	〃
VTR (SLT-50ME)	1S	A	A	〃
Video monitor (AV-20GB)	1S	A	A	〃
Munsell's cube	1S	A	A	〃
Books	16	A	A	1985. 2. 11
Video projector (BR-C100)	1S	A	A	1985. 1. 19
Battery bag (NB-P6)	2	A	A	〃
AC power adapter (AA-P1)	1	A	A	〃
Battery charger (BB-P1)	1	A	A	〃
Shoulder frame (SF-P1)	1	A	A	〃
Carrying case (CB-P1)	1	A	A	〃
Cassette adapter (C-P2)	1	A	A	〃
Video cassette tape (EC-30SHG)	6	A	A	〃

Note S: SET A: excellent B: good C: fair

Condition of 1985 expert's equipment

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
Books	4	A	A	1985. 8. 24
Books, manuals and documents	3	A	A	1985. 10. 19
Books	1S	A	A	1986. 3. 2
Books	1S	A	A	1986. 1. 19
Manuals in Japanese language	1S	A	A	1986. 3. 16

Note S: SET A: excellent B: good C: fair

Condition of 1986 expert's equipment

Item	Quantity	Utilization	Administration	Arrival date
Disc records of sound effects, books and stationary	1S	A	A	1986. 5. 14
Books, magazines and medicine	1S	A	A	1986. 5. 21
Word processor (PWP – 50 NEC9)	1S	A	A	1986. 6. 21
Floppy disc unit (PC80S31K)	1S	A	A	〃
Books, pamphlets and video tapes	1S	A	A	〃
Books, disc record of sound effects and cassette tape	1S	A	A	1986. 7. 27
U matic and betamax video tape	1S	A	A	1986. 10. 1
Compact stand (CX – 2)	1S	A	A	1986. 10. 9
Location light (LC – 2)	1S	A	A	〃
Shield beam (BPMF – 5 – 32)	1S	A	A	〃
Location lamp (PG – 22) and halogen lamp (BPUS – 6 – 50)	1S	A	A	〃
AC adapter (AC – 500E), photocopy paper, books and manuals	1S	A	A	1986. 11. 22
Fan for Modemo, soldering iron alignment tape and books	1S	A	A	1986. 12. 07
TV stand (TR100 – 1)	1S	A	A	1986. 12. 26

Note S : SET A : excellent B : good C : fair

Condition of 1987 expert's equipment

Item	Quantity	Utilization	Administration	Arrival date
Typewriter	1S	A	A	1987. 09. 08
Books, notebooks, files and video tapes	1S	A	A	1986. 5. 21
Dubbing machine	1S	A	A	1987. 9. 9
Alignment tape (CR5 – 1APS)	1	A	A	〃
Disc record of sound effects	5S	A	A	1987. 10. 8
Microscope (1K – 1570N)	1S	A	A	1987. 12. 27
Zoom lens (J6X11 – 1, 4MACRO)	1S	A	A	1987. 12. 27
Copy stand	1S	A	A	〃
Microscope (SMZ – H)	1S	A	A	〃
Alignment tape (CR5 – 1APS)	1	A	A	1988. 3. 6
Word processor (CW – 550)	1	A	A	〃
Printer (KTP – 55, CW – CG04)	1	A	A	〃

Note S : SET A : excellent B : good C : fair

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
Cut sheet feeder (CF-03)	1	A	A	1988. 3. 6
Floppy disc set (4PCS, FS-55)	1S	A	A	〃
Transformer	1	A	A	〃
Floppy disc, ink ribbon and printing paper	1S	A	A	〃

Note S: SET A: excellent B: good C: fair

Condition of 1988 expert's equipment

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
Text books and cassette tapes	1S	A	A	1988. 4. 23
Magazine stand	1S	A	A	1988. 7. 12
Letter case	4S	A	A	〃
PT file	1S	A	A	〃
Canoword system set	1S	A	A	1988. 8. 5
Personal computer (CV – 21)	1S	A	A	1988. 12. 18
Software of computer (AIRIS)	1	A	A	〃
Transformer (300AE)	1	A	A	〃
8mm video soft	10	A	A	〃
Stop watch	5	A	A	〃
CD software	38	A	A	〃
Books	6	A	A	〃
Floppy disc, ink ribbon, printing paper and cassette tape	1S	A	A	〃
Video camera (CCD – V88)	1S	A	A	〃
Video camera accessory kit (KIT – 75)	1S	A	A	〃
Carrying case (LCH – V88)	1	A	A	〃
Video tape (IVP – 60)	5	A	A	〃
Portable reflection board	2	A	A	〃
Filter (270 and 273)	2	A	A	〃
Battery pack	10	A	A	〃
Video cassette recorder (NV – G500EM)	1S	A	A	〃
Cassette tape recorder with radio receiver (CFD-DW83)	1S	A	A	〃
Books	10	A	A	〃
Video tape (P6 – 60MPX50) and filter sheet	1S	A	A	〃
Audio tape recorder (DN – 3602RG)	1S	A	A	〃
Audio tape recorder (MX – 5050 – BQII)	1S	A	A	〃
Audio open reel tape (ULH – 7 – 550BL)	30	A	A	〃
Color monitor (TPMC – 230AP)	1S	A	A	〃
Portable battery charger (KD – 220)	2S	A	A	〃
Video tape (BCT – 60L)	50	A	A	〃

Note S : SET A : excellent B : good C : fair

Item	Quan-tity	Utili-zation	Adminis-tration	Arrival date
Battery pack (DP-1240)	20	A	A	1988. 12. 18
Charge regulator (S-260-5)	5	A	A	〃
VTR head cleaner	4	A	A	〃
Printer (PC-PR101G)	1S	A	A	1989. 1. 31
Compact disc	13	A	A	1989. 1. 17
Computer desk (LD21D)	1S	A	A	〃
Label paper	5	A	A	〃
Floppy disc and ink ribbon	1S	A	A	〃

Note S: SET A: excellent B: good C: fair

Condition of 1989 expert's equipment

Item	Quantity	Utilization	Administration	Arrival date
Word processor (PWP – 50HLT)	1S	A	A	1989. 6. 26
Scanner for word processor (PWP – 1N2)	1	A	A	
Memory card (PWP – RG2 and PWP – RC3)	2	A	A	〃
Carrying case (PWP – 50H – SC)	1	A	A	〃
Transformer (200AE)	1	A	A	
Ink ribbon, printing paper and floppy disc	1S	A	A	
Personal computer (PC9801UVII)	1S	A	A	〃
Color display (KD – 853N)	1S	A	A	〃
Software (LOTUS and MS – DOS)	2	A	A	〃
Printer	1S	A	A	〃
Printer ribbon (PCRP201 – 01)	50	A	A	〃
Vector monitor	1S	A	A	1989. 7. 23
Printer ribbon (PC – PR201G – 01)	50	A	A	1989. 9. 25
Color monitor (PVM – 6030ME)	4S	A	A	1989. 8. 31
8mm video camera (CCD – V89)	3	A	A	1989. 11. 23
8mm video camera accessory kit (CCD – V89)	3	A	A	〃
8mm video camera RF adapter (89KA)	3	A	A	
8mm video camera carrying case (LCH – V89)	3	A	A	〃
VHS video deck (NV – G500EM)	1	A	A	〃
Handy scanner (PWP – 1N2)	1	A	A	〃
12 point word card (PWP – RG2)	1	A	A	〃
Gothic card (PWP – RC3)	1	A	A	〃
Carrying case (50H – SC2)	1	A	A	〃
Transformer (220V 2A)	1	A	A	〃
Alignment tape	1	A	A	〃
Ink ribbon, printing paper and floppy disc	1S	A	A	〃
Personal word processor (PWP – 50R)	1	A	A	1989. 12. 26
Vibration analyzer (VA – 10)	1S	A	A	〃
Printer for vibration analyzer (CP – 10)	1S	A	A	〃
Transformer (TD – 3)	1	A	A	〃

Note S : SET A : excellent B : good C : fair

Regarding Table 2-3-19, a number of items of equipment have had their current conditions evaluated as "C" in the 'Utilization' column. Such items and the respective reasons of their having been evaluated as "C" (fair) are as follows:

Grant Aid Assistance

1-I Film Processing Equipment

1. 16mm color film developing machine
2. Analysis equipment
3. Water boiler
4. Chemicals
5. Others

[Reason]

In recent years, the development of ENG equipment has been most remarkable, both in quality and quantity. In the industrialized countries, image pickup by film, which is the method hitherto used in image pickup for animation, has been replaced almost entirely with image pickup by ENG. In Indonesia, owing to the delay in the introduction of ENG equipment, image pickup by film is still used at some of the stations. However, in Indonesia, too, image pickup by film is certain to decline in the future and, consequently, the need for training personnel in film-shooting will also tend to decrease.

Ⅳ-35 Operating Impedance Bridge (MZ-810)

[Reason]

This measuring instrument is a device for the measuring of a medium-wave antenna constant. However, since a medium wave antenna had not been installed at the MMTC, the frequency of use of this instrument was low, as it was used only on such occasions as for simulated measurements.

Ⅳ-45 Temperature meter

Ⅳ-49 Test film SMPTE

Ⅳ-50 Test film

Ⅳ-51 Test slide

[Reason]

The same reasons as those mentioned for 1-Ⅰ.

1985 Technical Cooperation

9(5) SSB transmitter (NSD-515)

9(7) Linear amplifier (TL-922)

[Reason]

The SSB transmitter and the linear amplifier, which is used for the SSB transmitter, are not the main items of equipment required in conducting broadcasting; they are both devices used in secondary work, such as communications. Hence, the frequency of training in the handling of these equipment is low.

1987 Technical Cooperation

3(11) Vacuum tube tester (VG-4G-N)

[Reason]

Almost all of the broadcasting equipment today use semiconductors; the vacuum tubes, which have been used hitherto, are almost completely out of use at present. Consequently, the frequency of use of the vacuum tube tester has also decreased.

3(14) UHF receiver

[Reason]

UHF receivers are a quite special type of broadcasting equipment; they are not a type of equipment that is used in large numbers. Consequently, the frequency of training in the handling of this equipment is also low.

1988 Technical Cooperation

4(1) Logic analyzer

[Reason]

the logic analyzer is an item of equipment that has been allocated mainly for the purpose of repairing digital equipment. Since, for the present, breakdowns of digital equipment are infrequent, the frequency of use of this equipment is also low. However, it is expected to be fully utilized in the future, because the curriculum to be taught in the future includes logical operation circuits.

5(1) Spare board for 1" VTR

5(2) Spare board for Betacam

[Reason]

Both of the two being spare boards, the frequency of their use is low.

2-4 Process Leading to the Request and the Contents of the Request

2-4-1 Process Leading to the Request

As has been mentioned in the Introduction, MMTC was originally established as an institution to offer basic training and education. However, in view of the urgent need in Indonesia to foster candidates for senior staff positions, the MMTC was designated in 1985 as a school authorized to confer degrees by a presidential order, so that the graduates of MMTC may be eligible for the national promotion and appointment system. As a result, the need arose for MMTC to introduce a substantial change in the academic contents of its curriculum befitting its status as a school authorized to confer degrees. In response to this need, the contents of the technical cooperation offered by Japan to Indonesia under grant aid have also been changed and implemented accordingly.

At present, at MMTC, the DI courses (5 fields - "D" means "Diploma") and a part (3 out of 8 fields) of the DII courses are being conducted.

However, following the changes made in the curriculum as mentioned above, there occurred a shortage of the required facilities and equipment and, moreover, it has now become difficult for MMTC to implement the remainder (5 fields) of the DII courses and any of the projected DIII courses (11 fields). Thus, it is now practically impossible to adequately train the middle-class engineers who are most needed by Indonesia today. It was against such a background that the Government of Indonesia requested of Japan the provision of grant aid cooperation to enable the supply of the necessary and adequate facilities and equipment required in running the above-mentioned training courses at MMTC.

In response to this request from the Indonesian government, Japan ascertained such questions as the background of the request, its contents and the system of implementation of the Project and examined the appropriateness of the Project. And in order to determine the policy for the basic design study, Japan sent to Indonesia a preliminary study team from April 10 to 22, 1989. This study team conducted the necessary survey and returned to Japan after signing the Minutes of Discussion confirmed between the Vice Minister of Information and the study team. Then, in

July 1989, the team submitted a report on the preliminary study to the Japan International Cooperation Agency (JICA).

As a result of the preliminary study, the following findings were made.

In the past, there were problems in the running of the MMTC because of the inadequate budget. However, the conditions were subsequently improved and the operational setup of the MMTC was streamlined. The facilities and equipment provided by Japan have been utilized effectively but are quantitatively insufficient, with the result that complete execution of DII and DIII is impossible. Of the eight DII courses, three have already been opened. As for the remaining five courses, the training of the instructors has been completed and the budget allocation has been realized, and so these five courses are scheduled to open as soon as the necessary equipment are provided. As for the DIII, a detailed curriculum is now being prepared. The scale of the expansion plan is generally appropriate. Those who have finished their training in the DI courses have already returned to their respective workplaces and are actively engaged in their work. The Government of Indonesia has been pushing ahead its plans for expansion and improvement of the broadcasting services. For that purpose, the Ministry of Information considers it essential to foster human resources for middle-class staff and hence the Ministry places high expectations on the execution of this project.

2-4-2 Contents of the Request

(1) Targets of the Diploma Courses

1) Targets of the DII Courses

Each of the DII Courses has the following targets:

Names of the Courses	Targets
Broadcasting Programme Planning	Acquisition of specialized ability for programme compilation work, including the drawing up of programme compilation plans, the execution of broadcasting work based on these plans, planning and editing of programmes, and the establishing of a programme-production system.
Programme Package Production	Acquisition of knowledge and skills concerning the direction and production methods of editing and processing primary materials in the course of the production of programmes.
Script/Story Writing	Having the participants undergo training in the methods of planning and composition of programmes, which are required for programme production, and acquire various techniques and specialized knowledge, both of which are essential in the writing of broadcasting stories and scripts.
Broadcasting Performances	Acquisition of performance techniques including reporting, narrating, skillful delivery, body movements and gesturing.
Broadcast Journalism	Acquisition of specialized knowledge and culture required as a broadcast journalist as well as the ability required as the staff in charge of news and current-affairs programmes, such as manuscript writing, reporting, editing and commentating.

Studio Production Techniques	Acquisition of specialized technical knowledge concerning such broadcast-engineering techniques as video, audio, image pickup, lighting and transmission techniques relating to radio and TV programme production technologies and programme continuity techniques.
Transmission Techniques	Acquisition of specialized technical knowledge concerning such technical matters as electronic technologies, wireless techniques, transmission equipment and measuring instruments in relation to radio and TV broadcast transmission techniques.
Technical Repairs	Acquisition of specialized technical knowledge concerning such technical matters as video, audio, image pickup, video/audio recording equipment and measuring techniques in relation to repairing techniques for broadcasting equipment.

2) Targets of the DIII Courses

Each of the DIII Courses has the following targets:

Names of the Courses	Targets
Broadcasting Management	Acquisition of ability required by broadcasting managers, that is, the managerial ability needed in operating a broadcasting station and conducting broadcasts accurately and effectively; more specifically, the ability to handle various aspects of a broadcasting service including planning and compilation of programmes, budgeting, management of broadcasting facilities and equipment, organization, personnel assignments, programme evaluation and audience servicing.
News and Information Programme Production	Acquisition of skills needed in developing programmes based on news and information programme materials, and development of ability as a journalist with expertise to direct and manage a reporting team on the sites of news events.
Educational and Religious Programme Production	Acquisition of skills concerning the production of wide-ranging socio-educational programmes intended for general adults, women and children and educational programmes including sports.
Cultural and Entertainment Programme Production	Acquisition of skills concerning the production of cultural, artistic or entertainment programmes including music, traditions, classics and shows.
Technical and Artistic Production Design	Acquisition of ability as an art designer to handle such work as the production of studio settings and sceneries needed for programme production.
Scenario and Storyboard Writing	Acquisition of skills concerning shooting scripts and presentation scenarios for general programmes including entertainment, as well as dramaturgy and scenarios and scripts for stage performances and broadcasts.

Public Speech and Drama Casting	Acquisition of skills concerning direction, public speaking, drama casting and performances in relation to programme production.
Apparatus Engineering	Acquisition of expertise and knowledge concerning broadcasting-equipment planning, such as designing techniques for studio equipment, continuity-studio engineering, and general installations.
Open Studio and Mobile Production Engineering	Acquisition of knowledge and expertise concerning audience-participation programme production in radio and TV and production engineering for outside broadcasts, including techniques for video, audio, image pickup, lighting and outside broadcasting engineering.
Satellite and Terrestrial Transmission Engineering	Acquisition of knowledge and expertise concerning satellite and terrestrial transmission engineering, including microwave engineering, satellite engineering, meteorology, transmission techniques, antenna engineering, radiowave propagation theories and broadcast-reception techniques.
Maintenance	Acquisition of knowledge and expertise concerning techniques for maintenance of broadcasting equipment, including studio facilities, continuity-studio equipment, transmission equipment, measuring of general equipment and maintenance techniques.

(2) Plans for Diploma Courses beyond 1990/91

The plans for the Diploma Courses beyond 1990/91 have been explained by MMTC as described in Table 2-4-1.

(Table 2-4-1)

Table 2-4-1 Implementation Planning of D I , II , III

(Figures in the table: number of participants)

Study Programme \ Year	1990 /91	1991 /92	1992 /93	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99
D I									
Programme Compilation Planning	24	24	24	24	24	24	24	24	24
Programme Lines Production	24	24	24	24	24	24	24	24	24
News and Current Affairs Reporting	24	24	24	24	24	24	24	24	24
Studio and Master Control Technical Operation	24	24	24	24	24	24	24	24	24
Transmission Operation	24	24	24	24	24	24	24	24	24
D II									
Broadcasting Programme Planning	–	–	12	12	12	12	12	12	12
Programme Package Production	12	12	12	12	12	12	12	12	12
Script/Story Writing	12	–	–	12	12	12	12	12	12
Broadcasting Performance	–	–	–	–	–	–	12	12	12
Broadcast Journalism	–	12	12	12	12	12	12	12	12
Studio Production Technics	12	12	12	12	12	12	12	12	12
Transmission Technics	–	12	12	12	12	12	12	12	12
Technical Repair	–	–	–	–	–	12	12	12	12
D III									
Broadcasting Management	–	–	–	–	–	8	8	8	8
News and Information Programme Production	–	–	–	–	8	–	8	8	8
Educational and Religious Programme Production	–	–	–	8	–	8	–	8	8
Cultural and Entertainment Programme Production	–	–	8	–	8	–	8	–	8
Technical and Artistic Production Design	–	–	–	–	–	–	–	–	8
Scenario and Storyboard Writing	–	–	8	8	8	8	–	8	8
Public Speech and Drama Casting	–	–	–	–	–	–	8	8	8
Apparatus Engineering	–	–	8	8	8	8	–	–	8
Open Studio and Mobile Production Engineering	–	–	–	–	–	–	–	8	8
Satellite and Terrestrial Transmission Engineering	–	–	–	–	–	8	8	–	8
Maintenance	–	–	–	–	–	–	–	8	8
Total	8	9	13	14	15	17	18	20	24

(3) Outline of the Facilities and Equipment Requested

The facilities and training equipment requested by the MMTC are as outlined below in Table 2-4-2.

Table 2-4-2 Outline of Facilities and Equipment Requested

Facilities Requested	Equipment Requested
TV Studio	Three TV cameras, 1 set of video/audio/lighting equipment, DVE and monitor.
Radio Studio	24-channel stereophonic audio control equipment, a tape-recorder and a disc player.
Voice-dubbing Studio	A tape-locking system and a multi-track tape-recorder.
Performance-training Room	A TV camera, a cassette VCR and a monitor.
Physics-programme Preparation Room	Physics experiment equipment and measuring instruments.
Chemistry-programme Preparation Room	Chemistry experiment equipment and microscopes.
Designing Room	Drawing instruments and a photocomposer.
Scriptwriting Room	A VCR, a monitor and a 16mm projector
Electronics and Digital Training Room	Training equipment and measuring instruments.
Electric-power Engineering Training Room	A transformer, a power generator, a power distribution board and measuring instruments.
Radiowave Engineering Training Room	Training equipment and measuring instruments.
Audio Training Room	Training equipment and measuring instruments.
Video Training Room	Training equipment and measuring instruments.
Transmitter Training Room	A TV transmitter, a radio transmitter, an antenna and measuring instruments.

Two Classrooms	Overhead projectors, VCRs and monitors.
Three Joint Classrooms	Overhead projectors, VCRs, monitors and PA systems.
Audio-visual Classroom	A cassette VCR, a video projector, a monitor and a PA system.
Seminar Room	An overhead projector, a VCR and a monitor.
ENG-equipment Maintenance Room	Maintenance equipment and measuring instruments, and a battery-charger.
LL Classroom	LL installations.
Post-production Room	Post-production system
	The following are equipment only, without facilities: Two 1-inch VTRs; an editing controller; 5 sets of Betacam editing systems; 5 Betacam cameras with lighting equipment; a TV OB van equipped with a microwave relay device, a VTR, and a video/audio device; a radio OB van equipped with a wide bandwidth transmitter, an antenna and an audio device; a microwave relay transmitter/receiver; a shortwave antenna; a satellite broadcast reception antenna.