REPORT
ON
TELEVISION PROJECT IN PAKISTAN

20th OCTOBER, 1964

JAPANESE TELEVISION MISSION
UNDER THE COLOMBO PLAN

OVERSEAS TECHNICAL COOPERATION AGENCY
TOKYO

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I N D E X

P R E F A C E

We were directed by the Government of Japan to serve with the Government of Pakistan as Colombo Plan Experts. Advice had been requested on a plan to introduce television in Pakistan.

In this capacity, we arrived in Pakistan on June 19, 1964 and associated ourselves with the Ministry of Information and Broadcasting. Since then, we have had a long discussion with the television staff of the Ministry. On the other hand, we conducted field surveys concerning technical setup in the city areas and vicinities of Karachi, Lahore, Pawalpindi, Peshawar, Dacea, and Chittagong, as well as along these areas enroute from Lahore to Rawalpindi and Rawalpindi to Peshawar. Also we visited Radio Pakistan (Headquaters and regional stations), Department of Films and Publications, Director of Public Relations and Film Development Corporation (East Pakistan), the Pilot TV Operation Firm, leading film producers and process facilities, major advertising agencies, and Art Councils. We had the chances to talk with the key personnel of these organizations and observed their facilities in operation.

After two months of these discussions and survey jobs, this Report has been prepared (although certain Experts are undertaking further mission). We are personally proud of the association with the Government of Pakistan and feel highly honoured in submitting this Report. We are extremely grateful to the organizations concerned for cooperation and particulary indebted to Radio Pakistan for assistance. We would also extend sincer thanks to the people both in and out the Government for good wishes directed towards the Mission.

The following Experts have dispatched by the Government of Japan under the Colombo Plan and contributed to this Report:

Mr. Yoshihiko NOGUCHI Chief of the Mission (Two-month mission)	Ministry of Posts and Telecommunications, Government of Japan
Mr. Shigeki TSUCHIYA (Two-month mission)	Japan Broadcasting Corporation (NHK)
Mr. Masao NAKAJIMA	Japan Broadcasting Corporation (NHK)
Mr. Takeo ISHIKAWA (Participated on July 25, 1964)	Japan Broadcasting Corporation (NHK)
Mr. Toyotaro SHIMIZU Cooperator for The Colombo Plan Experts	Nippon Electric Co., Ltd.

Part 1 Digest

Introduction

The Government of Pakistan have decided to introduce a general purpose Television Service in the country. The service will operate through a Corporation to be established shortly. Three main programme-producing stations have been proposed, one each at Karachi, Lahore and Dacca, and three satellite stations at Rawalpindi, Peshawar and Chittagong. It was also proposed to link Chittagong with Dacca, and Rawalpindi and Peshawar with Lahore. The service envisages 30 hours programme per week, with a maximum of ten minutes of advertising time per hour.

The above lines of the Government's intention have been thoroughly examined by the Experts and worked out as set out in Scheme A. It has appeared, however, that the scheme is too costly to run, although the viewing public will be well served by this scheme. It is likely that the Government will offer financial aid. However, the Government allowance will reach such amount as to surpass the operational revenue of the TV Corporation if it covers all the deficit involved in the operation. This financial scheme, if put into practice, may deprive the Corporation of enterprise and go against the spirit in which it has been proposed.

It is proposed, therefore, that scheme B be adopted. This scheme includes the establishment of three programme-producing stations, one each at Karachi, Lahore, and Dacca with a programme service of 23 hours on-air per week. In scheme B, the service areas are confined to relatively high populated areas, and the programme costs are cut down to meet the revenue expected.

It is suggested that scheme B should be placed in operation during the years to come and further programmes should be reviewed when this operation has proved to be successful.

TV Standards

Transmission standards and frequencies to be used for TV must be made public in advance so that the people may prepare for reception. It is said that the Government has adopted System B of CCIR Report 308 (Geneva, 1963) as a national standard. This decision itself is found satisfactory. However, on account of the nature of electric power in the country, CCIR Recommendation 212 (Geneva, 1963) Item 1 "television systems should be capable of operating independently of the frequency of the power supply" should be incorporated into the Standard.

Regarding frequencies, Bands I and III are widely in use for TV. However, as a few channels are required in Pakistan, only Band III is sufficient, and also preferred, than Band I for TV. There is, in Band I, some possibility that interferences will come from outside countries through Sporadic E layer reflection. Besides, in Band I receivers need antenna of big size.

Facilities

Scheme A includes the establishment of six TV stations. The stations in Karachi, Lahore and Dacca are full-fledged stations, each operating on a 5 kW transmitter with a 6 section super-turnstile antenna of 300 feet high to cover a distance of as far as 32 miles. Each station is provided with two studios, film and slide projection, video recording setup, kinescope recording, cameras, sound recording, film processing, OB van and auxiliary power supply and air

conditioning. Both transmitter and studios will be installed in the same place in those cases permiting.

In Rawalpindi, Peshawar and Chittagong, satellite stations will be set up. Though these stations do not take much part in programming, they will be furnished with minimum facilities of programming, preparing for the requirements of local programme production. Rawalpindi will have film processing facilities on a small scale.

Scheme B includes three stations one each at Lahore, Dacca and Karachi. The facilities of the Pilot TV operation at Lahore and Dacca will be enlarged to make the stations under scheme B. The Karachi station operates on a 800 W transmitter with an antenna 300 feet high to cover a distance of as far as 24 miles. Each station at Lahore and Dacca operates on 300 W with an antenna 150 feet high to cover a distance of as far as 11 miles. The programme-producing setup includes two studios, film and slide projection, kinescope recording, cameras, sound recording, film processing, OB van and air conditioning.

The equipment for scheme A will cost Rs. 26,670,000 and the equipments for scheme B will cost Rs. 8,800,000. These expenditures will be incurred in foreign exchange because the equipment will not be available within the country.

Scheme A is provided with programme relay networks. Between Lahore and Rawalpindi microwave relays are proposed. The cost is estimated at approximately Rs. 53 lakhs. Between Rawalpindi and Peshawar and between Dacca and Chittagong, translator links are proposed. Three translators will be required between the former two and four translators will be required between the latter two. One translator will cost approximately Rs. 3.2 lakhs. Microwave is superior to translators in transmission

characteristics. Scheme B does not include programme relays.

Programme

Programmes must be organized in line with efficient standards to maintain high ethic at standard. This idea is international. Programmes must also be organized in consultation with Consultive Committees so that may reflect public opinion, because the TV Corporation is expected to represent the Covernment with a minor share of private participation. Furthermore, Programme organization must be reviewed by means of surveys into the viewing rates to get better access to the public.

The programme scheme is a general service. Scheme A is of 30 hours on-air per week including Religions 2%, News and Information 25%, Education and Culture 21%, Children and Women 12%, Entertainment 20%, Sports 3%, and Commercials 17%. These programmes are presented through Studio 27% (Live 22% and VTR 5%), Films 44% (Home 16% and Foreign 28%), OB van 3%, programmes from other stations (VTR and Films) 9%, and CM 17%. The programmes of scheme A will cost Rs. 11,600,000 per year, out of which Rs. 4,400,000 (£330,000) will be in foreign exchange.

Scheme B is of 23 hours on-air per week including Religions 2%, News and Information 21%, Education and Culture 13%, Children and Women 14%, Entertainment 29%, Sports 4%, and Commercials 17%. The programmes are through studio 27%, Films 38% (Home 15%, Foreign 23%), OB van 4%, other stations 14% and CM 17%. There is no significant difference in percentage between the two schemes. The programmes will cost Rs. 3,187,000 per year, out of which Rs 1,067,000 (£80,000) will be in foreign exchange.
Unit cost has been lowered to cut down recurring expenditure.

The Corporation will be so organized that it can afford the newscasts by itself, because there are no such news agencies that deal with daily

newsreels in the country. A sufficient news staff, therefore, should be stationed at the main cities, and a well-organized news system furnished with film processing facilities should also be provided in the main programme-producing stations.

A number of documentary and feature films have been released in the cinema markets in the country, some of which may be found suitable and available for TV. Most of these films are in the distributors' hands. Canned films specially arranged for TV may also be available from abroad. In addition, the industries are looking forward to TV film production in the country. It seems needless and unfeasible for the Corporation, therefore, to have capabilities for the production of documentaries and features on a regular basis. Instead, such capabilities for live production in various categories will be required.

It seems advisable that the Corporation should not undertake too much in the production of commercial programmes, except live ones. CM by film, slide or opaque will be available from advertising firms. It is, however, anticipated that film processing facilities will become scarce when TV commercials come in, unless proper measures are taken.

Organization

Legislation must be effected to establish the TV Corporation having the authority and responsibility to operate TV throughout the country. Besides, the Corporation shall be licenced to establish and operate radio stations including TV broadcasting stations necessary for its business. (International Radio Regulation No. 725 provides that no transmitting station may be established or operated by a private person or by any enterprise without a license issued by the government of the country to which the station in question is subject.)

Scheme A sets up the organization composed of a Board of Directors and 6 stations. Daily operations of the Corporation will not be placed under a single control because no programme relay is proposed to link the programme-producing stations. Accordingly, the Corporation will be so organized that the station managers of the programm-producing stations share in the management of the Corporation.

Staff

TV operation is a specialized job. The personnel would not be available without proper arrangements for training. Each programme-producing station will need at least three engineers and three programming experts trained abroad. The training will be given for three to six months at foreign TV broadcasters or with manufacturers. Trainees must be chosen among persons of experience in radio broadcasting or similar taskes.

The general staff must be brought up within the country. A Training Institute will be needed. The Institute aims, in the main, at training TV technical operators and programme presentation personnel. Instructors will be recruited abroad.

In this regard, NHK and Japanese manufacturers are willing to extend all possible assistance if they are requested to do so.

Finance

To cope with the growing costs of TV operation, every type of revenue source must be considered. Generally speaking, there are three types of revenue source in TV broadcasting: government financing, viewers' and advertising fees.

Advertising expenditures are around Rs. 6 crores per year in all the media in the country at this moment. It is expected that Rs. one crore,

about 15% of the above advertising expenditures, will be directed towards TV, supposing that TV households have grown up to 10,000. TV receivers' fee will be reasonable at Rs. 50 per year, 5 times the radio receivers' fee. Rs. 50 Lakhs will be expected from 100,000 TV receivers.

The scheme A technical setup will cost Rs. 26,670,000 (£2,000,000) in foreign exchange, and buildings will cost Rs. 21,280,000 in local currency. As the TV service is expected to operate through a newly established Corporation, it is essential to raise a fund both in local currency and in foreign exchange to cover this initial investment. Annual recurring expenditures in scheme A is estimated at Rs. 30,992,000 out of which Rs. 13,550,000 (£1,016,000) will be in foreign exchange. These expenditures include programme cost, engineering expenses, employees' allowances, general expenses, margins for advertising agencies, and depreciation of buildings and facilities.

Scheme A, thus, extremely lacks balance. Unless the Government should provide the TV Corporation with financial aids, the Corporation would not operate.

In Scheme B, advertising revenue is expected to reach Rs. 60 lakhs and receiver fees reach Rs. 30 lakhs within 3 years, assuming 60,000 TV households. The facilities and equipments will cost Rs. 8,800,000 (£660,000) in foreign exchange and buildings will cost Rs. 5,320,000. Annual recurring expenditure is estimated at Rs. 8,666,000 out of which Rs. 3,205,000 (£240,400) will be in foreign exchange. This financial scheme balances.

The receivers' fee itself does not offer an obstacle to an increase in receivers. The question is how to collect receivers' fees efficiently.

The foreign exchange components of the expenditures estimated above do not include customs and sales taxes. It is expected that no tax will be levied so as to lighten the financial burden of the Corporation.

PART 2 GENERAL CONSIDERATIONS

Section 1. Technical Aspect of Television

§ 1. TV Standards and Frequencies

There is in TV broadcasting a lock-and-key relation between transmission and reception: TV receivers must be designed in comformity with the technical characteristics of TV transmission. There are many types of TV systems now in use in various countries of the world. To facilitate the interchanges of programmes and to co-ordinate the design of receivers, endeavours have been made by the CCIR (International Radio Consultive Committee) to work out an international standard of TV systems. However, no possibility is foreseen that a single standard can be made available. The Pakistan Government have reportedly adopted a European system as a national standard. This may be identified with System B in CCIR Report 308 (Geneva, 1963), The following is a description of this System, which must be made public so that it can prepare for the reception of TV. In connection with this subject, due to the nature of the power supply in the country, CCIR Recommendation 212 (Geneva, 1963), Item 1 "television systems should be capable of operating independently of the frequency of the power supply" must be incorporated into the standard.

The frequencies in use for TV are not the same in countries throughout the world. The following are the frequencies available for TV in Region III (Asia) allocated by the provisions of International Radio Regulations:

Frequency ranges (megacycles)	Band designation
44-50 and 54-68	Band I (VHF)
87-108	Band II (VHF)
170-216	Band III (VHF)
470-585 and 610-960	Band IV and V (UHF)

In band I, service ranges available may be tne largest, however, antenna systems both transmission and reception are too big, interferences might come from outside countries through sporadic E layer reflection, and radio noises are high in city areas. Band I, although it is in use for TV in many countries, is not favourable for TV for these disadvantages. Band II is in use for TV in Japan, but in use for FM in most countries operating FM. The frequency range is small, if TV comes in this band, only 3 channels are available, but these are enough to accommodate FM operations. Band III is in use for TV in all countries operating TV. As the TV of System B occupies a frequency band of 7 megacycles, 6 channels are available in the space of this band. The Government is said to have decided to use Band I and Band III for TV purposes. For the reasons stated above, tne proposed TV operation should utilize the frequencies within Band III; some lower portions of Band III might be convenient. Two channels are sufficient to accommodate the channel assignments to the proposed stations one each in the leading six cities. Three channels would also be enough in case tne projects are extended to set up a TV station in each of the other communities. Bands IV and V may provide the frequencies for TV in future, advanced countries have introduced these bands because of the saturation of VHF bands.

Television Transmission Standards

1. The number of scanning lines per frame shall be 625, interlaced two to one in successive fields.
2. The horizontal scanning frequency shall be 15,625 cycles per second $\pm 0.1\%$.
3. The vertical scanning frequency is 2/625 times the horizontal scanning frequency; this corresponds nominally to 50 cycles per second.
4. The aspect ratio of the transmitted television picture shall be 4 units horizontally to 3 units vertically.
5. During active scanning intervals, the scene shall be scanned from left to right horizontally and from top to bottom vertically, at uniform velocities.
6. The width of the television picture signals shall be five megacycles per second.
7. The width of the television broadcast channel shall be seven megacycles per second.
8. The visual carrier frequency shall be nominally 1.25 mc above the lower boundary of the channel.
9. The aural center frequency shall be 5.5 mc higher than the visual carrier frequency.
10. The visual transmission amplitude characteristic shall be in accordance with the chart designated as Fig. 1.
11. A carrier shall be modulated within a single television channel for both picture and synchronizing signals. The two signals comprise different modulation ranges in amplitude, in accordance with the charts designated as Fig. 1 and Fig. 2 a, b, c and d.

12. A decrease in initial light intensity shall cause an increase in radiated power (negative modulation).

13. The blanking level shall be transmitted at 72.5 to 77.5 percent of the peak carrier level.

14. The reference black level shall be separated from the blanking level by the setup interval, which shall be 3 to 6.5% of the peak carrier level.

15. The reference white level shall be 10 to 12.5% of the peak carrier level.

16. Frequency modulation shall be used with a frequency swing of 50 kc (F3) for aural signals. Preemphasis shall be employed in accordance with the impedance frequency characteristics of a series inductance resistance network having a time constant of 50 microseconds.

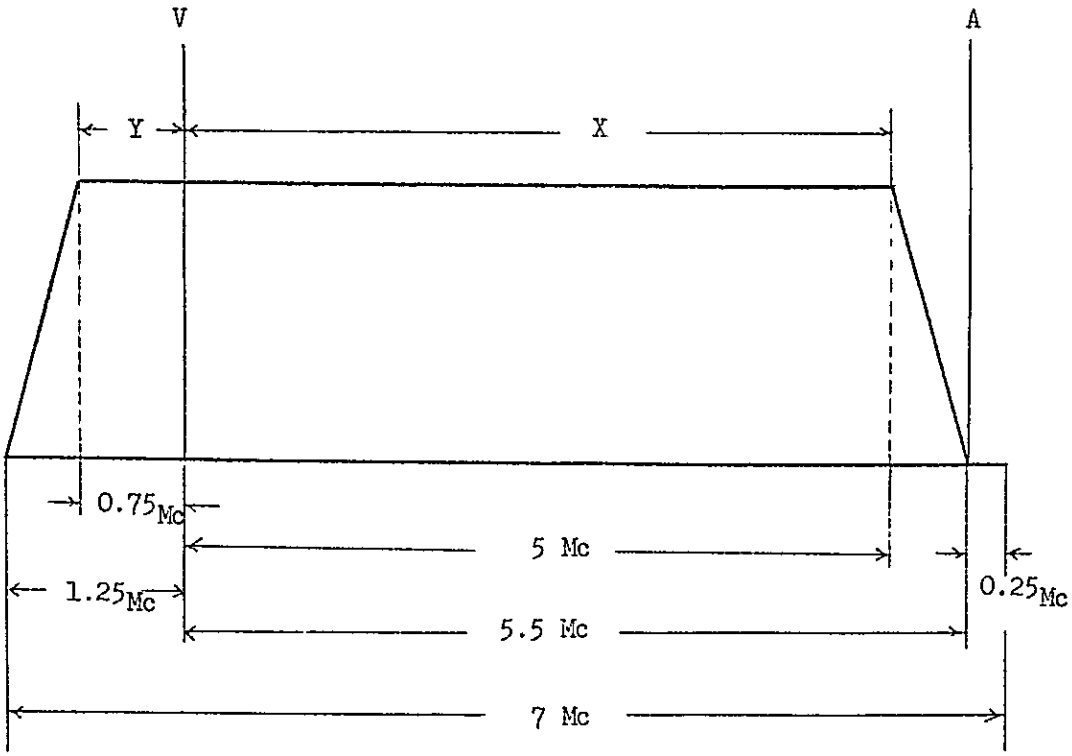
17. The effective radiated power of the aural transmitter shall be one fifth of that of the visual transmitter.

18. The signals radiated shall have horizontal polarization.

Notes (1) As for para. 18 above, vertical polarization may also be permitted in case it appears to be necessary for the effective use of frequencies.

(2) In respect to the receiver design, nonsynchronization with electric source frequency is recommended.

Fig. 1 Ideal frequency-characteristics for visual transmission



V: Visual carrier frequency

A: Aural carrier frequency

X: Nominal Width of main sideband

Y: Nominal Width of vestigial sideband

Fig. 2 Details of vertical-synchronizing waveforms

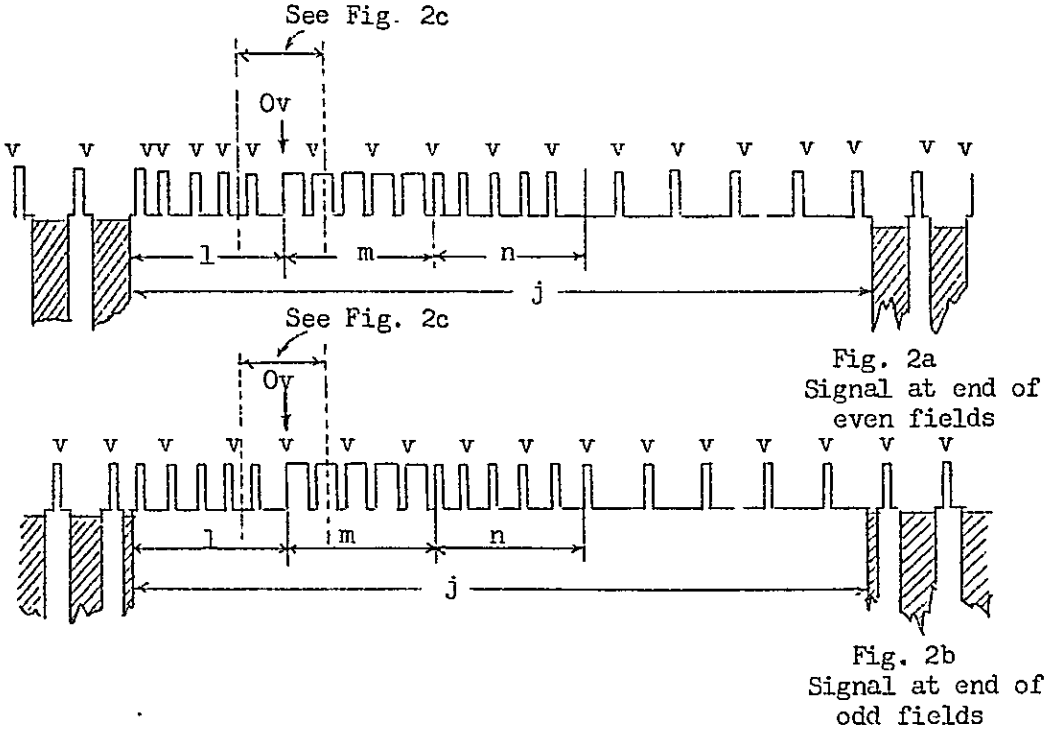


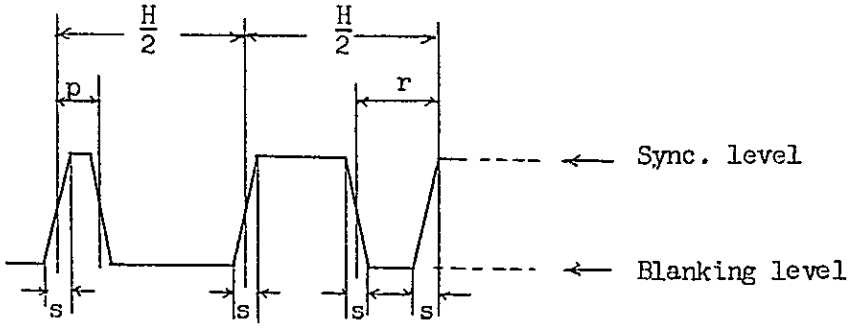
Fig. 2a
Signal at end of even fields

Fig. 2b
Signal at end of odd fields

Note 1: vvv indicates an unbroken sequence of edges of line-synchronizing pulses throughout the field blanking period.

Note 2: At end of even fields, the edge of the field-synchronizing pulse (Ov) falls midway between the edges of two line synchronizing pulses if l is an odd number of half-line periods as shown.

Note 3: At end of odd fields, the edge of the field-synchronizing pulse (Ov) coincides with the edge of a line-synchronizing pulse if l is an odd number of half-line periods as shown.



(The durations are measured to the half-amplitude points on the appropriate edges)

Fig. 2c Details of equalizing and synchronizing pulses

Item	Characteristic		
V	Field period ..... (ms)	20	
j	Field-blanking period (us)	(18 - 22)H + 12	
k	Build-up times (10-90%) of the edges of field-blanking pulses (us)	6	
l	Duration of first equalizing pulse sequence	2.5H	
m	Duration of synchronizing pulse sequence	2.5H	
n	Duration of second sequence of equalizing pulses	2.5H	
		%H	μS
p	Duration of equalizing pulse	3.4 - 3.75	2.2 -2.4
q	Duration of field synchronizing pulse		
r	Interval between field synchronizing pulses	7 - 7.7	4.5 - 4.9
s	Build-up times (10-90%) of the edges of synchronizing signals	0.31 - 0.62	0.2 - 0.4

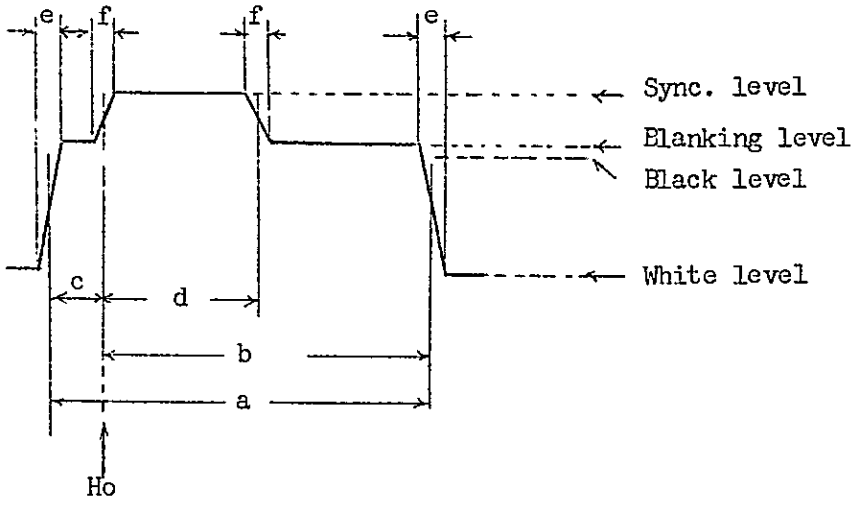


Fig. 2d Details of horizontal-synchronizing waveforms

Item	Characteristic	Durations (measured between half-amplitude points on the appropriate edges)	
		%H	µS
H	Line period	100	64
a	Line blanking interval	18.5 ± 19.2	11.8 - 12.3
b	Interval between time datum (0h) and back edge of line blanking signal		
c	Front porch	2 - 2.8	1.3 - 1.8
d	Synchronizing pulse	7 - 7.7	4.5 - 4.9
e	Build-up time (10-90%) of the edges of the line blanking signal	0.31 - 0.62	0.2 - 0.4
f	Build-up time (10-90%) of line synchronizing pulse	0.31 - 0.62	0.2 - 0.4

§2. Establishment of TV Stations and TV Networks

1. One TV station provides only service of limited area. Many hundred stations would be needed to cover the entire territory. TV projects must proceed step by step from nighly populated areas to lower populated areas.

Television stations may be classified into two types, according to their capability of producing programmes. One type has a capability of producing programmes by itself, and the other has no such capability.

The selection of these types should be made by taking the following factors into consideration.

(1) Does the television station under consideration include in its service area which type of a main city, political or economical?

(2) Is it possible for the television station to collect material, required for its programmes?

(3) Is it necessary for the television station to provide local programmes?

2. Programme production facilities

Television programmes may be classified generally into three types according to their modes of production.

One type is the live programme which is produced at a studio or an outside point (Theatre, studium, etc.) and aired as it is.

The second is the VTR or kinescope programme which is televised either on tape or film and telecast later at a specified hour.

The third is the film programme which, consisting of film reels taken within a studio or outside the station (News, feature film, etc.) is telecasted at a specified hour.

The following are the cautions to be observed when constructing the above-mentioned production facilities:

(1) TV studios

(A) Floor area and ceiling height

There are many television studios whose floor areas range from several thousands ft^2, as allocated to a drama and musical studio, to several tens ft^2, as allocated to a talk or news studio.

These studios have built-in large stage settings and lighting devices. Therefore, they should be constructed according to a specified height between the floor and ceiling, not to speak of the floor area.

In the case of NHK's studio which has a horizontal height of 6m, the length and width of the floor gives a ratio of 1.25:1.6 provided that the ceiling height is assumed to be 1.

(B) Acoustic treatment to studio wall

The wall of a studio shall be processed with acoustic treatment. This treatment may be simpler than that of a radio studio, but should be elabonate enough to make the studio sound-proof against external noises as well as to minimize the reverberation time.

(C) Floor face

The floor face should be finished so that it will provide a smooth surface for the television camera which must be moved about over the floor.

The face should also be finished so that it does not reflect beams of light, although it should provide an appropriate brightness of colors.

(D) Plug sockets

It is necessary for a television studio to install a great number of plug sockets on the floor face or cat walk as compared with a radio studio.

The plug sockets installed on the floor face should be sufficiently protected lest they should be damaged by the scenery brought in or out.

The plug socket for the TV camera shall generally be installed on the wall at a height of 15 to 40 cm above the floor face.

(E) Air conditioning equipment

A television studio must be provided with an airconditioning equipment to protect various units from high temperature, since its inside air rises to a rather high temperature because of heat radiated from the illumination device and other factors.

Further, use a heat absorbtion filter with the illumination device should be encouraged to suppress radiation of heat.

(F) Studio rooms

It is necessary to provide a large number of rooms for a studio. These rooms are used as the sub-control, announcers', performers' rehearsal, toilet and scenery and props rooms and, therefore, should be located rationally adjoining the studio.

(G) Others

The studio should be provided with an entrance large enough to allow easy moving of scenery in or out.

Also, provision for gas and water mains is required for the studio, since some type of programme may require such use.

(2) Tele-cine facilities (Tele-cine room)

The tele-cine facilities should be located at a place most capable of establishing close contact with both the master and sub control rooms, because the films are used in various programmes.

Ordinarily, it is installed adjoining to the master control room.

Sufficient care must be exercised to prevent fire and dust when operating the film.

(3) Main control facilities

The main control facilities shall provide means of switching the TV signal from the studio, tele-cine room and outside broadcasting van to the transmitter in accordance with the broadcast programme schedule pre-determined.

It shall also provide means of making effective use of the news studio and flying spot scanner, since it must insure smooth operation of programmes when any trouble occurs with television equipment, or in cast of an emergency.

(4) Outside broadcast van

With the transistorization of recent television equipment, the outside broadcast van equipment uses transistors as the studio facilities do. For this reason, the van features light-weight, small power consumption and compact size.

The transistors, however, are sensitive to heat. For this reason, care must be paid not to subject them to high temperature when they are used in Pakistan where high temperature prevails.

Especially in summer, they should be used within the van cooled sufficiently. Furthermore, the van should never be exposed to direct sun beams.

(5) Power unit

A power unit having sufficient capacity should be provided for the station facilities, since these studio facilities, as well as television equipment, consume much power.

Also, a frequency-stabilized AC supply should be provided for the tape recorder and projector to free the recorder and projector, respectively, from out of phase between the recording and reproducing phases and occurrance of shutter bar or flicker.

3. Building Area

It is necessary for a television station building to provide space allowing for rooms of performers, business-administration staffs and air conditioning equipment, not to speak of rooms for technical facilities.

The sizes of these rooms depend on the number of the station staff and the performers listed on performance schedules.

The following offer examples of sizes based on the data of NHK:

(1) Technical-engineering

a) Studio (per one room)

Studio (Effective section plus its 30%)

Sub control room Machine room	1,400 ft^2
Sub-stadio (Announcers' booth)	160 ft^2
Technical warehouse	380 ft^2
Musical instruments warehouse Scenery setting and props room.	5400 ft^2

b) Film

Tele-cine room	700 ft^2
Film recording room	360 ft^2
Film development room	560 ft^2
Film editing room	450 ft^2
Video recording room (or transmitting recorded video)	360 ft^2

c) Outside broadcasting

OB preparatory room	500 ft^2
Radio equipment room	500 ft^2

d) Master control

Master control room Equipment room	750 ft^2
Announcers' studio, accommodating one TV camera	380 ft^2

e) Transmitter (located at the same place with studio)

Transmitter room (for 5 KC transmitter)	1650 ft^2
Material room (serving also repair shop)	300 ft^2
Blower room	280 ft^2
Technical warehouse	200 ft^2

(2) Production

a) Office room

Broadcast unit room Technical unit room Night duty room	7,700 ft^2 (Increased or decreased depending on volume of programmes produced after considering this value with that given in (3), 2) together.

b) Performers

Performers'room	550 ft^2
Toilet	280 ft^2
Rehearsal room	550 ft^2

(3) Others

a) Administration

Offices (including council-room and station manager room)	Approx. 5,000 ft^2

b) Construction

Power distributing room Battery room Generator room Air conditioner room Staff's room	4,000 ~ 5,000 ft^2

o Others

Mess room Garage Visitor's corridor	7,000 ~ 8,000 ft^2

4. Technical Operation

The technical operation shall be conducted in accordance with the following staffs and functions:

Staffs	Functions	Remarks
TD (Technical director)	The highest excutive of technical unit who, working in cooperation with PD, works to achieve smooth programme production.	Called TDS when TD assumes SW too.
SW (Switcher)	Performs switching of picture. Normally TD serves also as SW. Assigned when programme is complex or has high-grade content. Must have a sense of representation.	
VE (Video engineer)	Has high-class technique on video and works to achieve smooth operation of units during programme production.	
LD (Light director)	Sets up illumination plan. Arranges and operates illumination device by directing LO. Person in charge of picture quality.	
LO (Light operator)	Arranges and operates illumination devicesunder direction of LD.	Employ external trader when making outside broadcasting.

Staffs	Functions	Remarks
C (Cameraman)	Operates TV camera. Must have a sense of composition of picture. Must have mobility, harmony, æsthetic sensibility and physical strength.	
CA (Camera assistant)	Assist cameraman in camera work. Carry cable trailing camera and also operate crane.	
AD (Audio director)	Person in charge of microphone arrangement, pick-up of sounds and mixing sounds. Usually, Mix serves as AD.	Assigned only in special cases.
Mix (Mixer)	Performs mixing and recording of programme sounds.	
BO (Boom operator)	Operates microphone boom to pick up sounds under direction of Mix. Assist Mix in recording.	

The above personnel the studio engineers. Beside these, transmitter operators, OB operators and film processor shall be assigned in accordance with the scale of the programme.

5. Engineering Management

The technical facilities, after their installation, shall be managed in accordance with the instructions listed below.

The facilities include the broadcast, electric, telephone, clock, air conditioning and water and drainage facilities.

a) To grasp always the current state of various facilities.

b) Undertake various types of technical research to improve the telecasting condition. Research of receiving, interferring and noise conditions.

c) Replenish parts of broadcasting equipment by making reference to the results of item a).

d) Try to improve the technical facilities by making trial manufacture and test of facilities in accordance with the tendency of broadcast technique.

e) Set up the measures for TV receivers.

Repair of failed receiver and its guidance, guidance for reception. To undertake counter-measures for prevention of radio noise interference.

6. Programme Relays

Television programme production calls for elaborate work. Difficulties in getting TV programmes might appear particulary in a local station. Programme relay networks assume an important role in TV broadcasting. In general, microwave is used for this relay purpose. In case of a short distance relay translator may also be used.

Cost of relay facilities depend on distance. It becomes huge in Pakistan due to the large territorial area. It might be the case in Pakistan that some limited numbers of TV Stations can operate without relay networks at the initial stage.

Section 2. Programmes

§1. Measures for Consolidating and Improving Programmes

Television, as might be expected from such an assumption that it has envisioned the final form of all mass communication media, exerts an influence of incalculable value to the general public and its programmes therefore play an extremely important part in the living standard of a nation.

A national, public or civil corporation operating television broadcasting stations has the following responsibility and duty of fulfilling these functions efficiently irrespective of its managing agency: A television broadcaster should provide, with thorough understanding of the importance of the role of programmes played in the television broadcasting, a fruitful, high-quality television service for the general public in accordance with the basic principle that a television enterprise is essentially at the mercy of the general public as the television audience.

(1) Establishment of Standard Regulations for Programming

Acting on the above-mentioned consideration, the television broadcaster should exert unremitting efforts to enhance broadcasting ethics as well as to improve the programmes through positive establishment of the Standard Regulations for Programming which set forth the basic principles for the drawing-up and production of the programmes. (Refer to annexed reference: Standards of NHK's Domestic Broadcast Programmes.)

In order to permit the programme drawn up to meet the requirements listed below, it is recommended to set up physically the organization given in item (2) to take appropriate measures:

(a) The programmes should be those which conform to the basic principle as a broadcasting media for the general public.

(b) The programmes should reflect public opinion appropriately to meet the demand of a nation.

(2) Set-up of Programme Advisory Committee

The programme advisory committee is a consultive body to be composed of several learned men selected from all representative circles in the country. It gives its opinion as the representative of the audience for correct formulation of the programmes as well as to improve their quality. It also accepts inquiries concerning the standard regulations for formulating the programmes and the basic planning for programmes. (Broadcasting hours, percentages of programmes classified in accordance with their categories, languages to be used, expenses for programmes.)

(3) Investigation of Inclination and Receiving Condition of Audience

When drawing up or procuding the programmes, it is necessary for the broadcaster to grasp fully the desires and tastes of the audience. To accomplish this, it is desirable to conduct surveys to investigate the tastes, inclinations and viewing rates of programmes by means of a scientific method.

It is further desirable to bear in mind that the programmes produced reflect the opinion of people generally by adopting the correspondences from the audience to the broadcaster, the opinions expressed by the audience serving as the monitors by request and the contributions to newspapers or holding discussion meetings intended to ask the opinions of the audience directly.

(4) Examination of Programmes

The examination of the programmes is an activity which checks whether the programmes scheduled are prepared in comformance with the standard regulations for drawing up the programmes or not.

It is performed directly on the broadcast script or film beforehand. It is also conducted on the programmes telecasted as a later examination.

It is desirable that these measures be taken as a self-controlling measure on the part of the broadcasting corporation in conformance with the basic idea that broadcasting programmes should be edited on an entirely free basis. (Refer to annexed diagram titled "How do programmes take shape?", which shows various measures taken by NHK to replete its programmes.)

2. Composition of Programmes

(1) Establishment of long-term programme composition plan

Prior to proceeding to the compilation of the television programmes, it is desirable for the broadcaster to establish a long-range programme compilation plan as a part of the comprehensive long-range plan for managing a television broadcasting enterprise set up in connection with the stations, installation, personnel and budget plans of the latter in accordance with the data obtained through collection and investigation of various materials and informations, and examination of many factors, such as the relation between the national living and the television broadcasting enterprise and the tendencies of the television broadcasting enterprises and techniques in foreign countries, and then try to lengthen the broadcasting hours as well as to replete and consolidate the programmes step by step at the initial and developing stages of the broadcaster following the said long-range program composition plan. (Refer to annexed diagrams titled "Progress of

NHK's broadcasting hours", "Programme schedule at the initial stage" and "Current programme schedule".)

(2) Establishment of yearly programme compilation plan

In establishing a concrete yearly programme compilation plan, the broadcaster should exert efforts to replete and reform the programmes by setting up important matters and major objects in line with the audience's basic and long-range requirements.

(3) Basic requirements to be taken into consideration in compiling programmes

The programmes prove their raison d'etre only after they have completed processes of planning, producing, broadcasting, and in attracting the audience.

If a programme has no audience when it is televised or is telecasted at a time when the audience desiring it can not receive it, then the production of that programme comes to nothing.

To secure a real effect for the programmes, therefore, it is a prerequisite to make sufficient examination about the categories, objects, on-air time, etc. of the broadcasting programmes prior to the planning, producing or telecasting them.

A. Categories of programmes

Generally, there are such categories of television programmes as news, educational, cultural, entertainment, sports, etc. Thus, it becomes necessary for a television broadcaster to determine how to make a combination of these categories with appropriate percentages maintained among the programmes by making use of the actual data on the tasts, desires, understandings, etc., of the people as an important clue as well as taking the main object of starting television broadcasting.

If the programmes are to be telecasted according to a general purpose, it is a matter of course that they should be compiled so as to be comprehensive and harmonious.

B. Objects

B-1 Objects of programmes based on classes of audiences

The taste of the television audience differs one from another depending on the years, sex, occupations, school careers of the audience. This, in turn, means that not all programmes can satisfy every class of audience at the same time.

Therefore, the programmes should include a combination of various programmes selected for specific classes to meet their demand in addition to the programmes selected in a broader sause for the general public.

B-2 Objectives of programmes based on areas of audience

There are two types of programmes concerning the objects of programmes based on the areas of the audience: One is the nationwide common programme selected for the audience throughout the country and the other is the local programme selected for an audience in a specific locality.

Therefore, the broadcaster should compile the programmes so as to include an appropriate combination of nationwide and local programmes to meet the requirements of the inhabitants in various localities by taking into consideration the local problems of all localties in the country, the facilities of local stations and the actual status of programme transmission link.

C. Belt programming

The hour when the audience is most ready to attend to television in a day depends on the demographic nature and residential district of the audience. This makes it necessary for the broadcaster to telecast the programmes at the hour bands suitable for the objectives of the programmes after conducting an investigation on the actual status of living hours of the people and the hours most suitable for viewing television and making use of the data thus obtained.

§3. Instructions in Planning and Producing Programmes

1. The basic requirements to be taken into consideration in planning and producing each programme are as follows:

A. News programme

The news programme plays an important role as an information medium in a modern society which is ever-shifting from time to time.

The broadcaster, therefore, should exert efforts to transmit the correct and precise movement or changes in society every hour by making the most of the rapid reporting nature provided by the televised news programme.

A-1 Setting-up of news data collecting system

To meet the above requirements, it is necessary for the broadcaster not only to set up a news data collecting system with mobility by assigning the personnel, cameramen, film editor, film developing staff, etc., to the local stations throughout the country and locating the correspondents in key places other than the locations of local stations but also to

make the content of programme replete by keeping close contact with newspaper offices, etc.

A-2 Overseas News

It is one of the important missions of a news programme to widen the international field of vision of the audience.

For this reason, it is recommended that the broadcaster locate the correspondents in key locations abroad at all times to collect the data on overseas news as well as to take measures for collecting information over a wide range as effected by expediting interexchange of news film reels with other countries.

A-3 News commentary

TV broadcasting should provide the audience with a news commentary programme which comments on the news plainly with particular reference to the points at issue, back-ground and influence of the events concerned from an impartial point of view, thereby enhancing a correct understanding on the part of the audience and their influence on society.

To accomplish this, the broadcaster should assign news commentators to each station and also invite qualified authorities in various fields, such as political, economic, cultural, etc., as a news commentator to make the content of programme replete.

A-4 Composing extra and special news programmes

In an emergency where a disaster due to damage from storm and flood threatens to occur, the broadcaster should include an extra and special programmes by making the most of the

mobility and rapid reporting nature provided by television to arouse the attention of the inhabitants concerved as well as to inform them of counter measures to be taken.

B. Educational and cultural programmes

The educational and cultural programmes are those which occupy the most important field of the broadcasting programmes and which aim to contribute to the promotion of social welfare and improvement of the culture.

In order to permit these programmes to demonstrate their real effect, they should be compiled systematically.

When planning or compiling these programmes, therefore, it is desirable to make careful examination repeatedly on their materials at meetings of the programme committee consisting of specialists in the fields concerned.

Prior to telecasting these programmes, the broadcaster should try to raise their educational effect by promoting group activities on the part of the audience sponsored by themselves as well as by publishing various texts concerned with the contents of the programmes. (Refer to annexed reference "How do school programmes take shape?").

Examples of programmes belonging to this field, the following are suggested:

- o School programme useful in enriching and improving the educational effect in the class room by the presentation of the content of educational subject which can not be understood sufficiently by the pupils from the text book or the lecture of the teacher only, made by making the most of the instructive characteristics provided by the televised programme.

Following are some basic requirement to be considered in planning school programms.

1. The contents of the programms should be easily accessible to school learning.
2. Shool programms should be compiled systematically and continuously.
3. As school broadcasts are intended to be listened to and viewed in the classrooms under the guidance of teachers, they should be formulated in such a manner so that the teachers' views are fully reflected in the programms.
4. School programms should be compiled in line with the physical and mental status of students in each grade.
5. The contents of the programms should be informed in advance for the convenience of listeners and viewers in order to achieve the desired educational effect.

In order to fulfill the above-mentioned conditions, it will be advisable to adopt the following measures;

Before preparing the original plan of the programs, some preliminary researches on the actual conditions of school education and teachers' views should be made.

As for the actual conditions of education, it should be necessary to examine the courses of study, the school curricula and the textbooks approved by the Ministry of Education.

Besides the teachers' views regarding programms, in order promote the utilization of school broadcasts, every effort should be made, for instance, in organizing study groups of teachers, or holding seminars on how to utilize the school broadcasts to effectively.

Moreover, attention should be paid to investigations of various kinds of visual materials necessary for television programms. Moreover, the annual broadcasting schedule including all the subjects in each grade, several types of courses of study, and the total number of the yearly programs must be made by synthesizing the abovementioned visual materials.

The annual original plan will be referred for the discussion by the Advisory Committee on school broadcasts consisting of scholars of audio visual education, officials of the Ministry of Education, representatives of the broadcasting research associations, and representatives of teachers, and the final plan is to be decided on the basis of such discussion.

A technical committee shall be organized for each serial program for the purpose of fixing the objectives, details, and contents of each program based on the annual original plan.

The technical committee shall be composed of teachers and officials of the Ministry of Education.

Efforts should be exerted to enhance the use of school broadcasts and contribute to the educational effects, by establishing in advance an annual plan concerning broadcasting and the publication of texts, based on the objectives and contents of the programs through an examination by the technical committee.

As for the programs themselves, in addition to the programs on each course of study in the primary, secondary, high school and university levels, programs for teachers should be organized to provide teachers with methods of guidance of instruction and living, and in the materials for improvement of educational content materials.

It should be advisable to give full consideration to the utilization of programs by placing as much emphasis as possible on rebroadcasting.

During vacation periods, it is also advisable to compile programs which provide special home projects to the students and which contribute to the guidance in their living.

- o Educational programme for working students who are shut out from educational opportunities.
- o Cultural programme which useful to promote social welfare.
- o Programmes concerning society, politics, economics, industry, civilization, etc., which provide the audience with means to aquire such knowledge and culture thus permitting them to keep pace with the progress of the times in modern society which is so complex and ever changing.
- o Programme useful to establish a healthy home life and health control.
- o Programme useful in raising the concern of the audience to the importance of science and promote scientific techniques.
- o Programme useful for proper management of factories and shops, etc.
- o Instructive programme for management of agriculature and improvement of agricultural techniques.
- o Adult or occupation education programme such as language and technical courses.
- o Programme dealing with actual situation of politics, history, civilization, customs and manners of foreign countries to widen the international view of the audience.

The programmes in the field under consideration are apt to become superficial and, therefore, will be isolated from the concern of their audience unless they are televised with systematic a plan and presentation that make their contents simpler and easier to understand as well as interesting.

In presenting these programmes, the producer should exert his efforts to have a good command of the materials such as the diagrams, demonstration items, films, etc., which may be visualized, as well as to select those performers who are talented enough to cause the audience to foster a feeling of familiarity with them.

C. Political programme

The broadcaster should compose the programmes of a symposium and round-table talk on politics and on-the-spot broadcasting programme of the National Assembly which reports and comments the current on trends of domestic and overseas politics in order to promote a correct understanding of the audience to democratic ideas and parliamentary politics, as well as to improve the political sense of the people.

D. Programmes aiming at specific objects

D-1 Programme for children

The broadcaster should compile sound and healthy programmes for children in order to enhance and enrich their sentiments and living habits, since children are the support and driving force toward future society.

The programmes for children should aim, first of all, to arouse interest, and, at the same time, be instructive to them.

A programme which is merely interesting to the children is not qualified as a superior programme. It is nothing but a blind response to the demand of children. Far from that, it may contain even a harmful factor to the proper elevation of children. Hence, it is necessary for the broadcaster to exert all possible efforts to embody sufficient "instructive material" into the televised programme to arouse their sense of ethics, responsibility and judgment, which are required to bring up the children as satisfactory members of society.

To meet the above-mentioned requirements, the broadcaster should try to work out a method of production and representation corresponding to the specific natures of children's psychology, their way of thinking and physiology and also to select and enlist suitable writers to provide scripts in line with the said requirements and performers who cause the children to feel familiar with them.

The following types of programmes for children are suggested:

- Programmes consisting of a visit to an airport, harbor, zoo, arboretum, various museums, etc.
- Science programmes consisting of simple commentaries on scientific phenomena.
- Instructive musical programmes, such as piano and violin lesson.
- Instructive programmes on the art of living among children and for manufacturing models or dolls, etc.
- Dramas useful to deepen the sentiments of children and enrich their life, such as dramatizations of fine juvenile novels of home and overseas.

- o Puppet shows.
- o Programmes consisting of games, quizzes, music and dance in which the children participate.
- o Educational films and feature films for children.

D-2 Programme for infants

The broadcaster shall also compile a programme useful to promote the growth of both the minds and bodies of infants.

It is possible to grasp the mental movement of an infant roughly from developments in psychology. However, it is quite dangerous to present such movement merely ideologically.

The broadcaster should grasp the characteristics of growing infants and produce a concrete plan which will serve faithfully the future growth of infants.

In representing this programme, the broadcaster should take sufficient care to employ specifically simple and plain development of the plot, to make effective use of repetition of the same plot and to select those performers who have affection for infants and are attractive as human beings.

The following types of programmes for infants are suggested:

- o Programmes which are useful to deepen the sentiment of infants and enrich their growth in life.
- o Instructive programmes consisting of songs, gymnastics and art for infants.
- o Programmes consisting of a visit to a zoo and recreation at ground, etc.
- o Puppet shows, etc.

D-3 Programme for women

A programme for women is generally classified into two types, the practical and cultural.

The domestic lives of women differ greatly from home to home depending on such conditions as the incomes of their husbands, situation of families, their living habits, their residental districts, etc.

In general principles a cultural programme for women is similar to that for general purpose but, when compiling such a programme, it is important for the personnel concerned to be particularly attentive to every detail after grasping the physical living of the objectives sufficiently.

A practical programme aims, of course, to be "useful in a practical life". To meet this requirement, the personnel concerned should exert their efforts to draw up an explanatory and informative programme in concrete form in order to rationalize the living technique and promote such rationalization.

Suggested examples of programmes for women are as follows.

- o Practical programmes useful to acquire new knowledge and techniques concerning house-work, care of children, family, hygiene, etc.
- o Instructive programmes in cooking, dressmaking, handicrafts, beauty art, calisthenics, etc.
- o Programmes which are useful to widen women's knowledge concerning society, politics, economics and culture.

E. Entertainment programme

Television, as a source of entertainment existing very closely to a people, plays an important part in enhancing the feeling of affection of audience to television broadcasting with a resultant build-up of happy homes by the audience.

As an entertainment programme, therefore, the broadcaster shall compile cheerful programmes which, consisting of dramas, quizzes, varieties shows, music and dances, enable a family to be amused all together, thereby meeting the demands of a wide ranging audience.

The broadcaster shall exert efforts, too, to compile those programmes which are useful not only to deepen a recognition on the part of the general public to the superior, traditional arts of his own country, such as folk music and dances through introduction of the arts made in order to preserve and foster the traditional civilization, but also to develop a new field of art.

On a literary entertainment programme the scenario and performers should exert a great influence to the effect of the programme during its planning and representation. The broadcaster, therefore, should set up various groups for the study of a scenario and performance to improve the quality of programme and also to make efforts to find and foster fresh men of talent. In connection with the above requirement, it is recommended that the broadcaster expedite such activities physically as the fostering of music, dance and performance groups in the country and assist in studying activities of excellent performers or performance groups.

The broadcaster should also try to interchange programmes on the domestic civilization with those of foreign countries to improve and promote his own cultural scope. To meet this requirement, it is a favourable method to invite superior musicians, musical performance groups and public entertainers' groups from abroad, or to introduce the masterpieces of overseas cine-films.

F. Sports programme

The broadcaster should exert efforts to compile instructive programmes for practice of sports and outside broadcasting programmes of various types of sports to have these programmes contribute to the promotion of amateur sports and the elevation of the physical standards of the nation, as well as meet the demand of sport fans.

G. Local programme

All localities of a country differ considerably as to weather and climate, the life, customs and the social and economical conditions of the people.

Also, it is usual that there are areas not blessed with the civilization and entertainment, especially in localities located far from the central part of the country.

The broadcaster, therefore, should telecast local programmes having close concern with such remote localities and areas to improve the local civilizations as well as to meet the demand of the inhabitants.

In detail the broadcaster should telecast local news programmes connected directly to these localities and areas and educational and cultural, agricultural and local entertainment programmes which reflect the local colors.

The broadcaster should also encourage the interchange of programmes between stations to promote the interchange of the civilizations of the central and local societies. (As to planning and production of all programmes, refer to annexed separate television handbook -- A Guide to Television Production -- NHK Central Training Institute, 1963.)

2. Preparation of programme schedule

When a programme schedule is to be prepared by arranging all individual segments of the programmes belonging to all categories mentioned above, the personnel concerned shall prepare the schedule in accordance with the following requirements:

(A) Studio production programmes (Live programmes)

Regarding a live programme produced at the studio, the personnel concerned should prepare the schedule so as to make it include a minimum of live programmes, 3 to 4 programmes per day, excluding the news and talk programmes.

To produce a live programme having a duration of 30 minutes, it is necessary to reserve a studio exclusively for this purpose during a time of approx. 500 mins, from the start to the end of the on-air operations so as to allow sufficient time for scenic sets, lights and microphones, various rehearsals, adjustment of cameras, telecasting and removing of the stage settings.

In general, the time to be reserved for a studio used to air a live programme is equivalent to 15 to 20 times of the on-air minutes of that programme (Refer to Table 1). In other words, the number of the live programmes to be produced in a studio is 1 to 2 per day for programmes of large and medium scale and about 3 for

the programmes of small scale. As a result, it is difficult to have a programme schedule contain a large number of live programmes when compiling the programmes provided that there are a limited number of studios available.

Table 1. Multiplier for the time to be reserved exclusively for a studio in operation (Actual data of a television station in Japan.)
(On-air minutes x Multiplier = Time to be reserved exclusively for a studio in operation.)

Programme categories	Multiplier
Information bulletin	20
News	5
Drama	36 - 19
Music	19
Variety	16
Dance	18
Quiz	12
Puppet Show	21
Talk	8
Documentary	11
Scientific experiment	13
Cooking	17
Educational, cultural	13

(B) Film programmes

The broadcaster shall telecast a considerable number of film programmes comprising domestic or foreign film reels in order to take into consideration the measures which prevent an increase of equipment investment resulting from installation of addition studio and to provide convenient means in composing the programme using a film network and also to replenish shortage of the materials of the studio programme for making the contents of programmes versatile and of high-quality.

(C) Insertion of VTR or film programmes between studio-produced live programmes

The broadcaster shall insert VTR or film programmes appropriately between the studio-produced live programmes to insure effective operation of the studio and transmitter facilities, as well as to establish rational assignment of the production personnel.

(D) Hour band composition of programmes

In week days, braodcaster should adhere to a programme schedule based on the hour band basis, in which programmes of the same category and having the same objectives are telecast at the same hour every day. This is effective to both the regular operations of composition and production of the programmes, as well as having the audience accustom themselves to the televised programmes.

(E) Programme hours

In preparing the programme schedule, the personnel concerned should refrain to the utmost from divising the regular programme hours into smaller intervals and allocate a time having a considerable duration for on programme.

The operation of a television equipment must take into consideration both video and sound signals and therefore, are extremely complex. Hence, it is very difficult from a technical point of view to shift many programmes successively during a short interval of time. It is desirable, therefore, to apportion enough times between the two succeeding programmes to insure smooth and proper operation of the equipment.

It should be noted here that broadcaster shall telecast the test pattern for 10 to 15 minutes prior to the start of the programme on the particular day in order to provide means of adjusting the television receivers to the audience.

3. Programme personnel

The following staffs shall be assigned to each station as personnel required to plan, produce and present the programmes:

Programme director	The personnel in charge for overall operations concerning with programmes.
Programmer-administrator	Compilation and issue of programmes. Planning and control of budget and personnel. Establishing inter-station liaison. Adjustment and control of use of studios and rehearsal rooms. Administration over studio fixtures. Activities concerning copyright and performers. Collection and adjustment of broadcast materials. Expedite use of broadcasting Entertainments.
Broadcast service staffs	

Producer (including assistant)	Planning, production and presentation of programmes (including progress and effect).
Announcers	
Television artists	Design. Manufacture, purchase and operation of stage equipment and settings. Costumes. Make-up. Titles. Drafting of diagram.
Script Writer	Preparation of scenarios, Translation of foreign movie scenaris.
News	
Editor (including assistant)	Selection, adjustment, editing of news and liaison with news media.
Assigned man	Collecting data on news.
Film editor	Editing film and sound
News cameraman (including assistant)	Filming and photographing news material.
Recording staff	
News service man	Selection of musical scores, Transmission of background music. Reception of overseas broadcasts.
Programme examination staffs	Examination of programmes. Investigation, such as public opinion research. Study of overseas broadcast activities.

When setting up the programme personnel plan, the broadcaster should exert efforts to check increase in the number of personnel required by conducting rational and effective assignment of the personnel in accordance with a policy of high efficiency.

At the initial stage of operation, it is recommended that the corporation assign personnel to any two services which are similar in nature, if possible.

PREFACE

NHK was founded on the basic policy of serving the nation as its public service broadcasting medium without intervention from any other sources, zealously safe-guarding its stand of being a non-partisan and independent organization, maintaining its code of upholding the freedom of speech and expression, and to exert its utmost toward the presentation of affluent and well-knit broadcasts, thus promoting the welfare of the public and exerting the best possible efforts toward the elevation of the nation's cultural standards.

On the basis of this realization, the Japan Broadcasting Corporation hereby defines the scope and the purpose of all domestic radio broadcasts under these set standards:

1 Broadcasts shall be conducted in such a manner as to contribute to the realization of the ideals of world peace as well as the welfare of mankind.

2 Basic human rights shall be respected and the spirit of democracy definitely instilled.

3 To be of service in improving the character building of the people through the promotion of cultural and moral levels and the fostering of rational attitudes.

4 The preservation of the outstanding national cultures of the past and the upbringing of the newer phases in culture and its diffusion to the general public shall be effected.

5 With the aim of sustaining the dignity of a public broadcast facility and in order to meet the requirements of the public at large as a basic principle, the following standards for the compilation of domestic broadcast programs are provided hereunder.

Article I. General Radio Program Standards

Section 1. Human Rights, Character, Honor

a. Human rights shall be safeguarded and personal character respected.

b. No broadcast shall be detrimental or injurious to the honor and dignity of an individual or organization, nor shall it bring discredit and loss of reputation in society.

c. No broadcast shall cause professional prejudice.

Section 2. Race, People, International Relations

a. No broadcast shall be such as to create racial or national prejudice.

b. No broadcast shall be made to obstruct international amity.

Section 3. Religion

Broadcasts pertaining to religion shall respect the freedom of worship and be treated with unprejudiced fairness.

Section 4. Politics, Economics

a. Broadcasts shall maintain impartiality in politics.

b. All political candidates appearing on radio in accordance with the Public Office Election Act to broadcast their campaign speech and their respective biographic sketches shall each be given an equal opportunity to voice their views on the air.

c. Broadcasts on various economic issues having a possible vital repercussion on the public shall be given special caution and discretion.

Section 5. Disputes, Litigations

a. Where there is a wide difference in the opinions of the public over an issue, as many angles of arguments should be clearly set forth and shall be given utmost unbiased treatment.

b. In any legal case which is currently on court trial, no broadcast shall be made that would interfere with proper legal adjustment.

Section 6. Community Life

a. Broadcasts are aimed at easing the national livelihood and espouse the spirit of mutual assistance.

b. No broadcast, either directly or indirectly, shall be detrimental to public safety and public interests.

c. Under no circumstances shall acts of violence be permitted to be approved.

Section 7. Home

Marriages shall be treated with solemn seriousness while home and family life be duly respected.

Section 8. Customs and Manners

a. Human life shall not be treated with contempt nor the act of suicide glorified.

b. Problems relating to sex shall be treated with seriousness and shall maintain dignity at all times.

c. The unwholesome relationship between the male and female shall not be treated with glamor, nor its expressions treated approvingly.

Section 9. Crime

a. In reference to crime, the law shall be upheld and the criminal shall not be given the impression of an attractive character nor shall the acts of crime be treated approvingly.

b. In portraying the methods and the actual processes of the acts of crime, such portrayal shall not be given to details any more than is necessary.

c. The acts of gambling and its related subjects shall not be treated approvingly nor shall it be portrayed to give it an impression of glamor.

d. The use of opiates other than for medical purposes shall not be referred to except as a detrimental factor.

Section 10. Expression

a. Expression should be understandable and the correct and proper use of words should be encouraged.

b. Broadcasting words shall be spoken basically on the standard dialect, but when using a provincial dialect, precaution and care should be exercised.

c. Avoid or minimize as much as possible the use of coarse languages and indecent words and actions.

d. Avoid expressions that tend to arouse fear, uneasiness or unpleasantness.

e. The detailed descriptions of physical torture and savage treatment or the suggestions of elaborating such acts shall not be broadcast.

f. Every consideration shall be made for the convenience of the listeners' time best suited for in compiling the contents of the broadcast and the expressions used.

g. In the use of news, flash news, official items, weather reports in dramatic programs as effects, every caution should be given to differentiate such items from the actual and the fiction.

Section 11. Advertisement

a. Commercial advertising or broadcasts designed to publicize the mention of names for the purpose of propaganda is not used in any form.

b. In mentioning the names of a specific individual or organization or its professional status, or the mention of trade marks or the name of marchandise, an impartial decision shall be made to determine whether these are required on the program.

Section 12. Prizes

a. Any program designed to attract the listeners merely for the object of the prizes and remunerations, or those that stimulate unnecessary speculative issues shall be avoided.

b. In all prize-awarding programs, every st[illegible] shall be taken to give the contestants [illegible] fair judgment and that the prizes be based in accordance with the merit of the [illegible]ll displayed.

c. In any solicitation for radio manuscripts, the full details of the basis of the competition and the prize shall be made known distinctly.

Section 13. Corrections

In the event a broadcast is found to be counter to the facts, an immediate retraction or an amendment shall be made as quickly as possible.

Article II. Specific Radio Program Standards

Section 1. Cultural Program

a. The objective is to elevate the cultural aspect in general and to bring about an uplift in the cultural level.

b. The requirements of not only the

majority should be met, but every effort to satisfy the demands of the various class levels should be made.

c. Efforts shall be made to promote social and community interest and to further the knowledge on the cultural phases of general livelihood.

d. In making public an academic study and in all broadcasts pertaining to expert matters, the integrity and importance of such a subject shall be duly respected and shall be based on logical and professional standards.

Section 2. Educational Programs

a. The specified listener audience shall be made clear and the contents of the program shall be appropriate and beneficial.

b. In order to obtain the best educational results, it shall be well organized and continuous.

c. Equal opportunity in education shall be publicized through the radio.

Section 3. School Broadcast Programs

a. Every effort shall be expended toward the basic plan of compiling a school educational program that can be done only through the radio.

b. Grade school children's study attitude shall be given consideration along with the development of their mind and body.

c. Seek means of improving the teaching methods for the teachers.

Section 4. Children's Programs

a. Considerations shall be given for the reaction on the minds of the children. Strive to infuse wholesome spirit and cultivate abundant sentiments.

b. Avoid programs that would be imitated by the children to their detriment or those that would be easily misinterpreted by them.

c. Avoid expressions that would cause abnormal fear in the children.

d. Superstitions that may bring harm to the children shall not be referred to.

Section 5. News Programs

a. Uphold the freedom of speech and report the facts.

b. In the news, the facts shall be treated objectively and shall not be twisted, concealed nor used for purposes of agitation.

c. In inserting a certain opinion inside a news item, the facts and the opinions shall be distinctly set apart.

d. In the event of disaster and other major emergencies, the news shall be disclosed at once and the lives of the people in the disaster area be given every protection and thus contribute to the prevention of further casualties and property damage.

e. All news commentaries and general comments shall be distinctly separated from the news itself.

Section 6. Sports Programs

a. The infusion of a spirit of clean sports and the advancement of physical culture shall be promoted.

b. In handling amateur sporting events the spirit and the objective shall be duly respected. Special precaution and care shall be exercised in handling events involving the younger people.

Section 7. Entertainment Programs

a. Strive for the better class of entertainments and thus nurture the noble sentiments of life.

b. Efforts to preserve the classic entertainment and the nurture of various types of programs shall continue unabated.

c. Pioneer a new artistic field that would be available only through the medium of radio.

d. In the presentation of an artistic subject, respect and common sence shall prevail at all times.

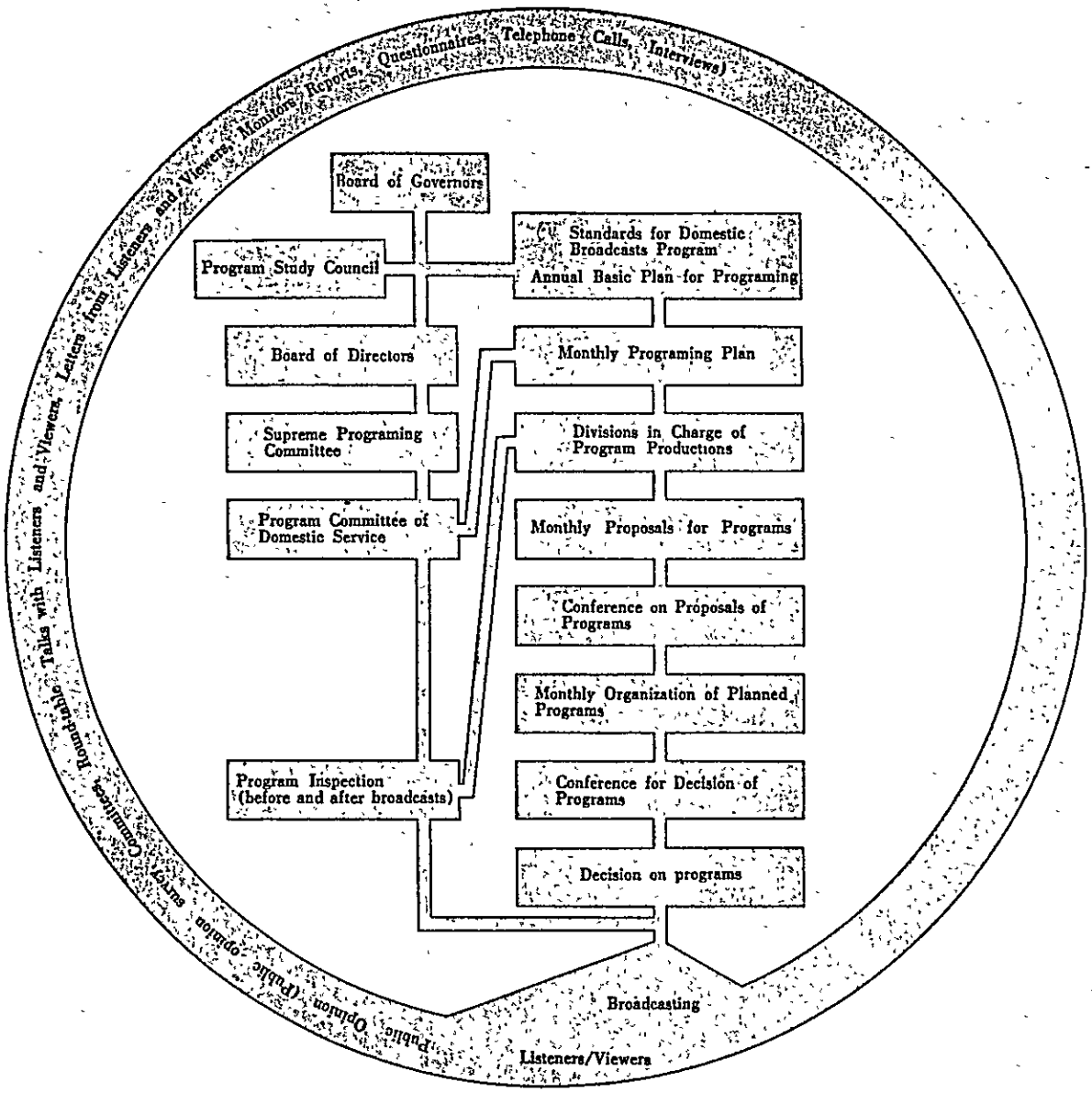
Section 8. Recreation Programs

a. Brighten the homes and strive for a wholesome, full and happy life.

b. If references must be made to physical deformities, particular care shall be exercised.

c. When using provincial dialects and colloquialism consideration shall be given for the feelings of the people of that area and avoid antipathy and unpleasant reactions.

2. How Do Programs Take Shape?



3. Expansion of Telecast Hours, in Japan

General TV

Date of revision	Programme hours per week	Programme hours per day
'53. 2. 1	27 ° 45'	3 ° 58'
4. 5	28. 00	4. 00
11. 1	28. 40	4. 06
'54. 6. 13	30. 35	4. 22
10. 25	35. 30	5. 04
'55. 4. 10	37. 30	5. 21
'56. 6. 4	39. 20	5. 37
11. 4	42. 50	6. 07
'57. 1. 14	44. 55	6. 25
5. 1	47. 15	6. 45
10. 7	54. 15	7. 45
'58. 4. 7	62. 02	8. 52
7. 1	62. 32	8. 56
10. 1	63. 09	9. 01
'59. 1. 5	65. 00	9. 17
4. 6	67. 25	9. 38
10. 5	73. 35	10. 31
'60. 4. 4	75. 36	10. 48
7. 4	75. 26	10. 47
9. 5	80. 06	11. 27
'61. 4. 3	93. 29	13. 21
10. 2	93. 33	13. 22
'62 4. 2	102. 19	14. 37
10. 1	114. 44	16. 23
'63 1. 4	114. 49 (11. 11)	16. 24
4. 1	125. 27 (33)	17. 55

(note) ( ) indicates special

4 NHK TV TIME TABLE IN DEBUT

(From 1st February 1953 to 4th April 1953) (Average 4 hours performance per day)

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
0.00	Film Picture	"	"	"	"	"	"
15	Theatrical Pefformance.	Music	Popular Song	Theatrical Performance.	Music	Popular Song	Interview Quiz.
45	News, Weather Forcasting.	"	"	"	"	"	
50	Test Pattern.	"	"	"	"	"	
1.00	1 School Hour.	"	"	"	"	"	Special Event (on the spot)
15	Ladies Hour.	"	"	"	"	"	
30						Special Event (on the spot)	
6.30	Children Hour.	"	"	"	"	"	"
55	Test Pattern.	"	"	"	"	"	"
7.00	Movie Film.	"	"	"	"	"	"
15	News, Weather Forcasting.	"	"	"	"	"	"
25	Test Pattern.	"	"	"	"	"	"
30	°Conte or Song	Discussion	Western Dance	Family Hour	TV Quiz	Quiz	°Popular Song
8.00	Western Dance	Musical Show	TV Drama	°Popular Song	Puppet Show	Variety	°TV Show
30	News Commentary	"	"	"	"	"	"
45	Science Chair	"	"	"	"	"	Interview
9.00							

Note: ° mark. – MV Broadcast simultaneously.

5-1 TELEVISION PROGRAM SCHEDULE

GENERAL NETWORK

(As of April 6, 1964)

	MON.	TUE.	WED.	THURS.	FRI.	SAT.	SUN.	
AM	News, Weather Forecast							AM
	13 Program Rundown							
	15 Gymnastics							
6	20 Farmers' Hour — Guidance of farmers' living, description of natural features of a village, question and answer on agricultural policy, personal experiences, visits to farm villages, interviews with the men in the limelight, record of village							6
	40 Morning Interlude — Talk by men of wide knowledge, local seasonal reports						40 NHK Activities of This Week	
	55 Pocket Science							
	News, Overseas News, Weather Forecast							
	20 Topic of the Day — Local and overseas topics, talk by men in the news, listeners' opinion						20 Morning Conversation 35 Information from NHK	
7	42 Weather Forecast							7
	45 Local Program Hour						45 Nature Album	
	News, Weather Forecast, Overseas News						News, Weather Forecast	
	15 Serial Novel — Dramatized novel						10 Olympic Hour	
8	30 Songs for Children — Song and gymnastics for children						30 Sunday Ramble — To introduce historical Japanese regions	8
	40 Home Science — Scientific knowledge and scientific way of thinking							
	Know-how of Living — Suggestions for better housekeeping and women's beauty					Life of Secondary School Students	Children's Theater	
9	30 Today's Menu						40 Adventurous Trip	9
	50 Calisthenics							
	55 Home Song							

	News						Let's Sing Together	
	03 Program Rundown							
	05 Infants' Hour "With Mother"							
10	Puppet Show and "Popular Conveyances"	"My Animal Friends" & "Popular Conveyances"	Children's Play & "Popular Conveyances"	Easy Handicraft & "Popular Conveyances"	"Let's Get Together" Children at play, gymnastics & "Popular Conveyances"			10
	30 Encyclopedia for Women							
	Japanese Sewing	Dressmaking	Washing	Encyclopedia for Women	Child-care and Education for Three Year Olds	Legal Advice	Drama "Our Town"	
	Olympic Hour (Re)	Social Report Documentary (Re)	Cross-country Report (Re)	Report by NHK Overseas Correspondents	Travelogue by NHK Special Overseas Coverage Team (Re)	Wisdom for Living (Re)	Discussions on the Debate in the Diet (R-T)	Political Forum (R-T)
11	30 Letter from NHK's Overseas Correspondents (Re)	Japan Here and There (Re)	Olympic Hour (Re)	Nature Album (Re) 45 Pocket Science (Re)	Record of Village (Re)	Foreign Countries		11
	50 Home Song							
	55 Program Rundown							
	56 Weather Forecast							
PM	News							PM
	15 Comic House — Comic story & comedy duo	• Popular Song Show	TV Entertainment Theater	Japanese Folksongs	• Light Music	Comic Show — Comic story, comedy duo, pantomime, etc.	15 Amateur Talent Contest (R-T)	Singing Contest by Amateur Jurors High-teens' amateur contest
0	40 Serial Novel (Re)							0
	Overseas News							
	15 Local Program Hour					15 Costume Play (Re)	Japan Here and There	
1	20 Women's Hour						20 • Let's Sing with Mr. Mitch Miller U.S. Film	1
	On-the-spot Visit / Interview	Children's World	Inquiry into Society	The Path Upwards	Women's Class			

	MON.	TUE.	WED.	THURS.	FRI.	SAT.	SUN.	
2	News							2
	05 News Commentary					05		
	15 Today's Menu (Re)							
	35 Flower Arrangement	All About the Tea Cult	Japanese Painting and Calligraphy Made Easy	Gardening as a Hobby	Introduction to Classical Japanese Music			
3	Infants' Hour "With Mother" (Re)					Theater Relay Feature Film Variety Sports Relay Others		3
	20 Song for Children (Re)							
	30 Know-how of Living (Re)	Know-how of Living (Re)	Know-how of Living (Re)	Know-how of Living (Re)	Know-how of Living (Re)		30	
4	NHK Theater Hall (Re)	Special Cultural Program (Re)	● Grand Music Show	Special Cultural Program (Re)	NHK TV Feature Film (Re)			4
	50 NHK Activities of This Week (Re)		50 Japanese Traditional Play and Dance (Re)					
5	● Golden Throne (Re)	● Musical Merry-go-round (Re)		Let's Sing Together (Re)	Evening Concert (Re)	Peter & Gladys U.S. Film	Zoo Diary	5
	30 News	News	News	News	News	News	News	
	37 Program Rundown	Program Rundown	Program Rundown	Program Rundown	Program Rundown	Program Rundown	Program Rundown	
	Relay of Sumo Wrestling	Relay of Sumo Wrestling	Relay of Sumo Wrestling	Relay of Sumo Wrestling	Relay of Sumo Wrestling	Relay of Sumo Wrestling	Relay of Sumo Wrestling	
	35 News						30	
	40 Children's News							
	45 ● Puppet Show for Children					● Dr. Encyclopedia	● World-famous Song	
6	Cartoon Quiz	Drama "Jiro's Story"	Children's TV Station	Science Fiction Drama "Boys in the Milky Way"	Drama "A Judoist and a Boy"	● Musical Merry-go-round	10 The World Circus Movie	6
	25 Song for Children							
	30 Program Rundown							
	35 Serial Home Drama						49 Program Rundown	
	54 Weather Forecast							

Relay of Baseball

7	News, Sports News, Overseas News							7
	30 Cross-country Report	Report by NHK Overseas Correspondents	Wisdom for Living	Travelogue by NHK Special Overseas Coverage Team	Olympic Hour	● Your Melodies	● 25 Grand Music Show	
8	● Quiz "My Secret"	● Gesture Game	● Quiz "It's Me"	● Golden Throne Life story of an entertainer, performance	● Mr. Sharp and Mr. Flat Music quiz game	● New Folksongs Old pieces arranged in modern style	15 Comical Drama "Youth's Seasons"	8
	30 Serial Drama "Midnight Sun" Franco-Japan Joint production	● Variety "Funny Trio"	Serial Drama "The Fountain Never Dries"	Comic Drama	Serial Drama "The Humorous Life of a Country Doctor"	NHK TV Feature Film		
9	News, Weather Forecast						News, Weather Forecast	9
	25 News Commentary						15 News Commentary	
	40 Serial Drama	Serial Drama "News-reporters"	NHK Concert Hall	Biographical Drama	NHK Theater Hall	30 News, Weather Forecast	30 Costume Play	
						55 News Commentary		
10						10 Musical Play "Let's Meet in a Dream"	15 Social Report Documentary	10
	30 Documentary "March of Time"	Politics & Policies	Documentary "March of Time"	Economic News of the Week	Documentary "March of Time"			
	50 News, Sports News, Weather Forecast, Overseas News					50 Letter from NHK's Overseas Correspondents	45 News, Weather Forecast, Sports News, Overseas News	
	10 A March for Tomorrow Documentary for promotion of social welfare	Evening Concert	Economic Report	Spearhead of Science	Japanese Traditional Play and Dance	10 News, Weather Forecast, Sports News, Overseas News	05	
11	40 Late Evening Music					30 Saturday Conversation	"The Nurses" U.S. Film	11
	50 Weather Forecast							
	53 Program Rundown						54 Weather Forecast	
	55						57	

Note: (Re) .....Rebroadcast
Mark ●.....Program in color
(R-T).....Common program for Radio and TV (Broadcast hours are different)

5-2 TELEVISION PROGRAM SCHEDULE

EDUCATIONAL NETWORK

(As of April 6, 1964)

	MON.	TUE.	WED.	THURS.	FRI.	SAT.	SUN.	
AM 7	:00 Agriculture School						Program Rundown :05 Religious Hour	AM 7
	:30 German Lesson	French Lesson	German Lesson	French Lesson	German Lesson	French Lesson		
8							Sunday College	8
9	P. 2G Science	P. 1G Science	P. 1,2 G Fairy Tales	P. 1,2G Music	P. 2G Social Studies	P. 1G Social Studies	Sports Class	9
	:20 S. Social Studies Community	S. 1G Science	S. 2G Science	S. 3G Science	S. Social Studies (1G) Geography	S. Social Studies (2G) History		
	:40 K. Social Studies	K. Morality	K. Tell Me Stories	K. Puppet	K. Music	K. Science		
10	P. 3,4G Morality	P. 4G Social Studies	P. 3G Science	P. 4G Science	P. 3G Social Studies	P. 3,4G Music	High School Correspondence Courses: Geography B, Homemaking, Mathematics II A	10
	:20 S. 2G English	S. 3G English	S. 1G Science	S. 2G Science	S. 3G Science	S. 1G English	:30 Physical Geography, Music, Biology	
	:40 K. Morality	K. Tell Me Stories	K. Puppet	K. Music	K. Science	K. Social Studies		
11	P. 1G Science	P. 2G Science	P. 1,2G Music	P. 2G Social Studies	P. 1,2G Morality	P. 1,2G Fairy Tales	High School Correspondence Courses: Modern Japanese I, Mathematics I, Physical Education, English A I, Health Education :30, English A II, Classical Literature B I, Special Curriculum	11
	:20 S. 1G English	S. 2G English	S. 3G English	S. 1G Science	S. 2G Science	S. 3G Science		
	:40 P. 5G Social Studies	P. 6G Social Studies	P. 5G Scienec	P. 5,6G Music	P. 6G Science	P. 5,6G Morality		
PM 0	Special TV Class For mentally retarded children	History of Music (Re)	TV Laboratory (Re)	Let's Speak Correct Japanese (Re)	Science for Everyone (Re)	History of Science (Re)	Drawing Class How to draw a picture	PM 0
	:30 Lunch Time Present				Lunch Time Music	TV Deaf School	:30 Lesson on Hobby "Go" & "Shōgi"	
1	S. Arts	S. Social Studies (1G) Geography	S. Social Studies (3G) Community	S. Social Studies History	S. Engineering, Homemaking	Women's Class		1
	:20 P. 4G Social Studies	P. 3G Social Studies	P. 4G Science	P. 3G Science	R. 3, 4 G Music	:30 P.T.A. Hour		
	:40 H. Geography	H. Physics, Chemistry	H. Biology, Physical Geography	H. English Conversation	H. Social Life			
2	S. Vocational Guidance	S. Arts	S. 1G English	S. 2G English	S. 3G English			2
	:20 P. 6G Science	P. 5, 6G Music	P. 6G Social Studies	P. 5G Social Studies	P. 5G Science			
	:40 K. Music	K. Science	K. Morality	K. Tell Me Stories	K. Puppet			
3	S. Engineering, Homemaking	S. Social Studies (3G) Community	S. 2G Social Studies History	S. Social Studies (1G) Geography	S. Vocational Guidance			3
	:20 H. Homemaking	H. Arts	H. Physics, Chemistry	H. Biology, Physical Geography	H. English Conversation			
	:40 Teachers' Hour							
6	English Conversation					Youths' Hour	Let's Speak Correct Japanese	6
	Beginner Class	Middle Class	Beginner Class	Middle Class	Beginner Class			
	:30 German Lesson (Re)	French Lesson (Re)	German Lesson (Re)	French Lesson (Re)	German Lesson (Re)	French Lesson (Re)	TV Laboratory	
7	TV Auto School	Technical Course	Abacus Class	TV Auto School	Technical Course	Abacus Class	We Teen-agers	7
	:30 Piano Lesson	Violin Lesson	Piano Lesson	Violin Lesson	Women's Class	Science for Everyone	History of Music	
8	Special Cultural Programs	To cultivate common sense on politics, economics, sociology, culture, science, etc. with commentaries				Ballet and Japanese Dances	TV Recital	8
9	High School Correspondence Course: Mathematics I	English A I	Modern Japanese I	Mathematics I	English A I	Mathematics I	Traditional Entertainment :50	9
	:30 Mathematics II A	Classical Literature B I: Classical Japanese, classical Japanese literature	Mathematics II A	English A II	Mathematics II A	English A II		
10	History of Science	20th Century Science	Science and Safety: Safety measures for homes and factories	Industry of Japan	Traditions of Japan	Court Drama "The Defenders" U S Film :50 Modern Management	Art Theater	10
	:30 English Conversation (Re)							
	Beginner Class	Middle Class	Beginner Class	Middle Class	Beginner Class			
11	S.A.E.S.H.S.S. Mathematics	H.S.C.C. Mathematics I Elementary	S.A.E.S.H S.S. English	H.S.C.C. Mathematics I Elementary	S.A.E.S.H.S.S Mathematics	Modern Management :20 New Management for Medium and Small Enterprises	Art Theater	11
	:50							

Notes: K. .....for Kindergarten & nursery school
P. .....for Primary school
S. .....for Secondary school

H.S.C.C. .....High School Correspondence Course
S.A.E.S.H.S.S. ....Scholastic Ability Emphasized in Series for High School Students
(Re) .....Rebroadcast

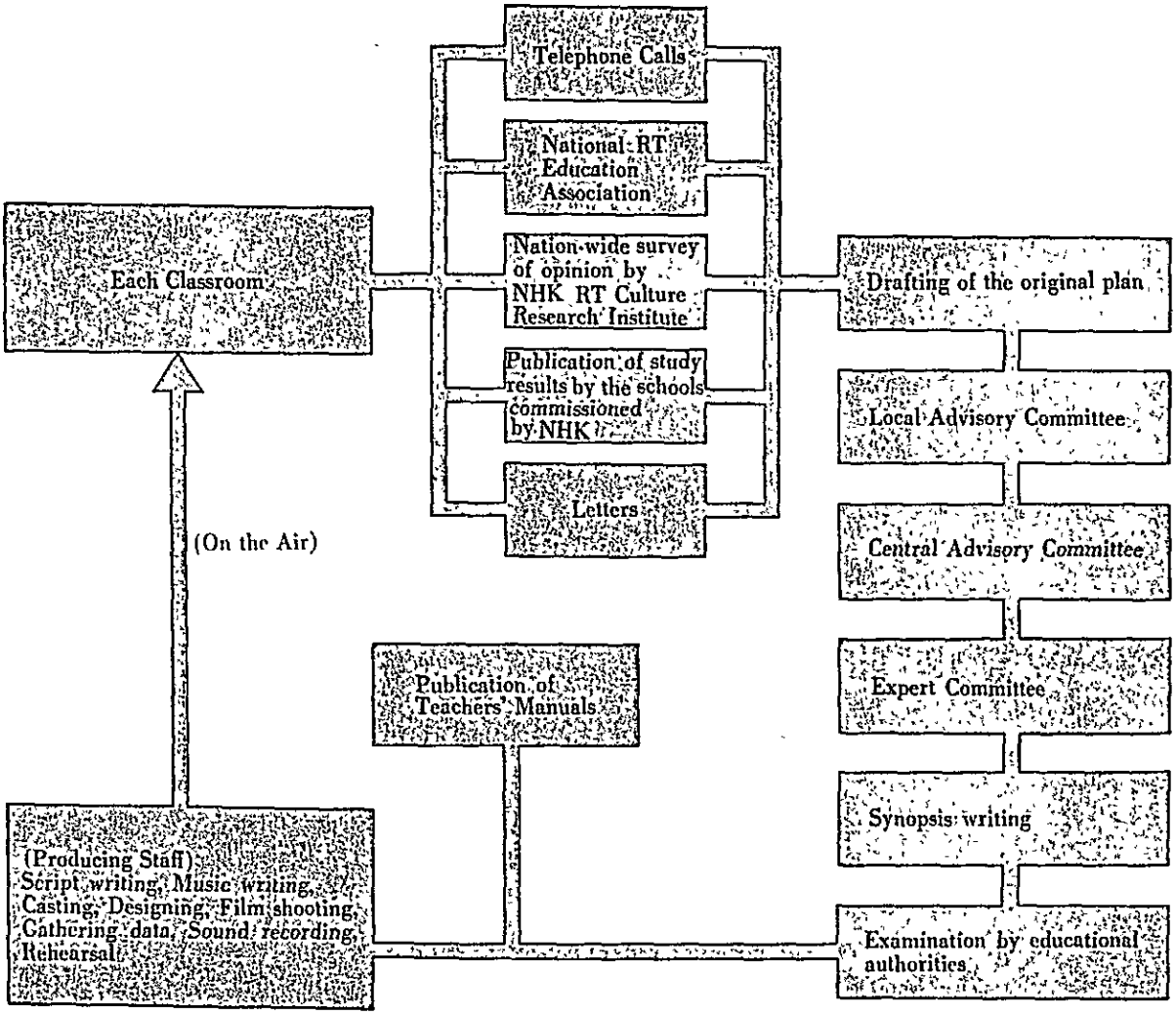
5-3 Weekly Regular Broadcasting Hours and Percentages Classified By Category of Programme (1964).

(General television)

		Hours		Percentage
Regular Programme		Hour	Minutes	%
	News	35.	48	28.5
	Educational	13.	00	10.4
	Cultural	44.	29	35.5
	Entertainment	32.	10	26.6
	Total	125.27		100.0
Special Programme		33		
Sum Total		126.00		

6. **How do school programs take shape?**

We have paid special attention to the production of school radio and TV programs in order to secure *maximum efficiency in the utilization* of these programs in each classroom. The procedures developed in order to reflect the voices of teachers in classrooms as much as possible are as follows:



Section 3. Management

§1. Establishment of Long Term Management Planning

To form and operate a television enterprise requires larger facilities, much more equipment, personnel and budget than for a radio enterprise. The television enterprise also needs highly advanced knowledge and technical know-how in producing and selecting programmes. It is impossible to attain a sound development of a television enterprise unless it is accompanied by such indispensable conditions as financial resources, efficient personnel, well equipped facilities and widely spread popularity of TV sets among the people. Based on the survey and future prospect of the above conditions, various plans will be made up as shown below.

a) Construction and Facilities Plan

This plan includes a construction of television station, establishment of television network, arrangement of musical performance hall, arrangements and improvement of telecasting facilities, etc.

b) Program Arranging Plan

This aims at increasing the telecasting hours and enriching and bettering the programs.

c) Personnel Plan

This concerns employment and training of necessary personnel.

d) Financial Plan

The plan embodies procurement of financial resources, construction and operating expenses.

It is necessary to establish a long-term management planning on the basis of all the plans put together in order to operate the enterprise properly and stabilize the management looking far in the future.

§2. Organizations

In order to decide the management policy and conduct the operation, a broadcasting corporation is required to establish the following structures and organizations systematically and rationally for efficient operation of the enterprise.

1) Organization for Decision Making of Management

A decision making body will be formed. The head of a broadcasting corporation acts as the chief and the members will be the representatives of the program, engineering, administration, finance and operation departments, respectively. These decide important items concerning the management policy and operation of the enterprise.

2) Operational Organizations

To perform specific operations in accordance with the decided basic policy of the management, the following operational organizations will be established. The order system and responsibilities must be clarified in directing this organization.

(A) Personnel and Labor Department

To conduct personnel affairs such as emploument, wages, promotion and arrangement, and endeavors to promote efficiency in operation by expediting appropriate labor controls and making most use of the talents of each employe. In addition to the above, the health and welfare of the employee, training for newly employed personnel and re-orientation of the staff are among other important assignments that this department conducts.

(B) Finance Department

In line with the management policy, this department makes accounts plans required for performing the policy. It also

establishes from the funds side various plans such as the establishment of the annual budget, its allocations, revenues and expenditures accounts settlement, and inventory for fixed assets and purchase of materials, and puts the plans into action.

(C) Business Department

This department negotiates with advertisement agencies or advertises for sales of programs, spot commercials (CM), etc., and also conducts a survey of commercial (CM) films.

(D) Promotion Department

This department promotes the enterprise image by means of advertisement and takes part in social and cultural activities to fulfill the social responsibilities assigned to the enterprise as a mass communication media.

(E) General Affairs Department

This department takes care of various duties to maintain the smooth operation of the enterprise, such as office routine, operation and maintenance of television stations, purchase, operation, maintenance and repair of vehicles, assets and facilities.

(F) Telecasting Program and Engineering Departments

The nature and assignments of these two departments have been explained in the respective chapters.

Concerning the performance and results attained by each department, fair and appropriate performance of financial activities and effective and efficient operations must be conducted under precise supervision (refer to Organization Chart of NHK Central Broadcasting Station and Organization Chart of Commercial-Base Broadcasting Station.)

§ 3. Employment and Training of Personnel Prior to Commencement of Telecasting

It is almost impossible for a newly established telecasting corporation to employ the required personnel already well experienced in either TV engineering or program production. It is desirable to obtain the personnel who were or are engaged in TV operation in foreign countries, or those from other communication medias related to TV, such as radio, movie, newspaper and electrical industries. The employed personnel will be trained on the basis of the following schedule.

(1) Employment and training of TV engineers

The applicants shall be engineers of radio stations and electronics industries and graduates of Engineering universities. The superior personnel, who will serve as the future leaders, are to be sent to broadcasting organization in foreign countries, or assigned to transmitting equipment manufacturing companies, receiving equipment manufacturing companies, etc. for a period of from three months to six months and there they are required to study on-the-spot engineering, as shown below.

Subjects of Studies	Personnel (per station)
o Transmitting System	1
o Main and Sub-Tuning Studio, Film Transmission, etc.	1
o Receiving System	1

For other personnel, a training center with various training facilities will be opened for the training of personnel in the future.

At this training center the reorientation will be conducted for periods of 3 to 6 months, including lectures and practice (refer to information 3 -- Training Facilities).

(2) Employment and training of personnel for program production

The applicants will be received from planners and producers of radio programs, people experienced in production lighting of theaters and movie production offices, cameramen and artists, experienced persons of newspaper companies, photographers, etc. As in the case of engineers above, the superior personnel who are considered to be the future leaders are to be dispatched to foreign broadcasting stations to learn compilation, planning, and production of programs and acquire practical knowledge and engineering.

Subjects of Studies	Personnel (per station)
o Culture	1
o Entertainment	1
o Art	1

Other personnel members will have pursue the reorientation or the training center, including lectures and practice, similar to the case of engineers above.

If the training center is not established, experimental telecasting will be conducted to train both engineers and program producers.

When the training is conducted either at the training center or by experimental telecasting, it is necessary to invite from a foreign country specialists who are equipped with TV engineering and program compilation.

§4. Systematic Training

It is necessary to conduct a training course for the new personnel engaged in program production, engineering field and management and administration on a basis of the employment year. It is also important to afford reorientation for the existing personnel systematically so that each employee can work to his highest efficiency and abilities. By so doing, it is desirable to rationalize the enterprise management from the viewpoint of man-power sources (refer to the information 4 "Contents of Studies Conducted at NHK Central Training Center).

§5. Finance

The following types will be considered as finance for the broadcasting enterprise.

1. Government Funds
2. Objective Taxes (receiver import tax, registration tax, etc.)
3. Receivers' fees
4. Incidental Enterprise Income (publications and sales)
5. Donations
6. Voluntary Support or Grants from Specific Organizations
7. Income from Advertisement, etc.

In reality, the operating funds are a combination of the above. It is the government that selects the items to be combined, depending on the amount of incomes (refer to the attached information 5 for receiving fares in each country and procurement of operating funds). The following will describe the items which must be considered when the attainment method of operating funds is decided.

1) Receivers' Fee

As shown in the information 5, this will be decided on compensation for services, license commissions or countermeasures to increase the number of TV viewers.

If receivers' fees are regarded as obligation of the TV viewers to the telecasting enterprise, the necessary expenses are calculated for production costs, and the total costs will be borne by the viewers. If the depreciation expenses of the high cost construction expenditures are included in the receivers' fees, in addition to the operating expenses, then the total amount to be paid by the viewers will reach a large figure. Especially at the early stages of the TV enterprise the cost per TV set will be expensive due to a limited number of receiving sets. In this case, therefore, the payment of the receiver fee cannot be done this way.

If the TV enterprise resorts to receivers' fee only for its financial basis to operate the enterprise, a red figure is anticipated because of low receiving charge profit at the early stages of business when the number of TV sets is still limited to a minimum. As a remedy, it will be necessary to have the government increases its financial support or seek other means of obtaining financial resources.

A. Amount of receiver fee

The amount of the receiving fee will be, as has been previously explained, limited to a point that does not interfere with the spread of TV sets in view of the people's earnings. The operating expenses of the TV enterprise taken into consideration, it is, no

doubt, expected to gain approval from various circles concerned, even if the TV receiving fee amounts to five times higher than that for radio.

B. Collecting organization and method of receivers' fee

Collecting organization: Collected by either Post Offices or the broadcasting organization itself in most cases.

Collecting method: Payment at post office, broadcasting station or door-to-door collection.

If the collecting is made by the broadcasting organization itself, a large sum of money will have to be expended to recruit the collecting personnel. It is recommended, therefore, that the Ministry of Postal Services should take care of the collection and the payment at a post office be encouraged (It may be possible to add some extra sum to the receivers' charge, in order to apply it to the expenses to be incurred for the collection. In this case, however, the added total shall not be large).

C. Spread of TV sets

It is up to each individual to decide what the annual rate of TV sets spread is in his country. However, as can be understood from information 6, the popularization rate of TV sets is not anticipated to increase in a short period. It is, therefore, quite necessary that either the government or a broadcasting organization should endeavor to promote the spread of TV sets among the people by every possible means.

1. Provide a TV set of good quality at low cost (the import tax on the TV set is not considered an appropriate policy in this sense).

2. Effect a proper policy, such as installment sales plan, etc., so that low wage earners may afford to purchase a set.
3. Provide good quality programs which will attract the interest of the people in general.
4. Endeavor to have good publicity for programs and the TV enterprise which will attract the public.
5. Provide measures to stop noise or interference, and repair defective TV sets, thus achieving an orderly environment for reception.
6. Think of providing group reception facilities for remote areas.

2) Income from Telecasting of Advertisement

When the income from the telecasting of advertisement is added to the operating finances, a long-term plan including the method and the hours of telecasting of advertisement must be established, taking into account the total expenditure to be used for advertisement in the country, the amount of advertisement expenditure to be increased with the starting of new telecasting, and the rate of advertisement to be placed into television media.

The telecasting of advertisement is largely divided into spot advertisement and advertisement inserted in a specific program sold by the TV corporation concerned. In case that the TV enterprise does not gain enough profit from spot advertisement only, it must think of selling a program in which the above-mentioned advertisement will be carried out. In the latter case, however, the tendency is that the sponsor may be apt to interfere in the contents of the program in order to obtain the maximum advertising

effect and thereby gaining the maximum number of TV viewers. As a result, it is possible that programs are may deteriorate in order to satisfy the sheer interests of the viewers. Therefore, as mentioned previously, a televising corporation must endeavor to maintain the high quality of programs, according to CM regulations in the aforementioned program standard. Refer to the information 7 for fares for TV CM in this country.

§6. Revenue and Expenditure and Finance Planning

As has been explained in item 1 of this chapter, a large amount of funds is required for the formation and operation of a TV enterprise. It is not enough to prepare mere by the funds to meet the establishing cost. Extra funds must be prepared to cover the red accounts for several years till profits surpass losses. The government must extend assistance to the TV organization which cannot rely on additional operating funds to cover its losses. Here, it becomes necessary to establish a long-term funds plan, taking into consideration the construction scale of the TV station, its operating method and financial background.

1) Checking of necessary funds for station construction

Concerning land, building, transmission and reception system, and performance facilities, including every necessary facilities and equipment, the scale of the TV station must be checked in relation to the funds plan.

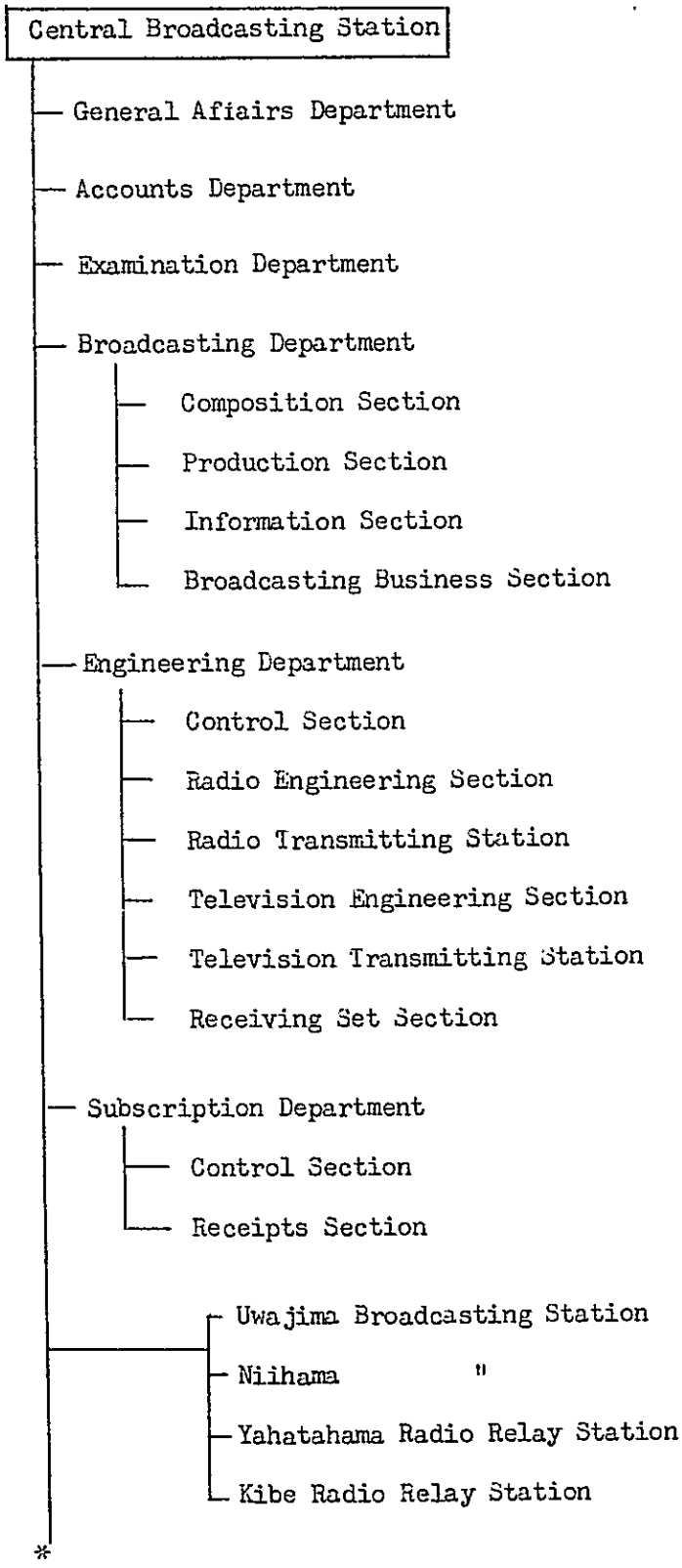
2) Checking of necessary funds for operation

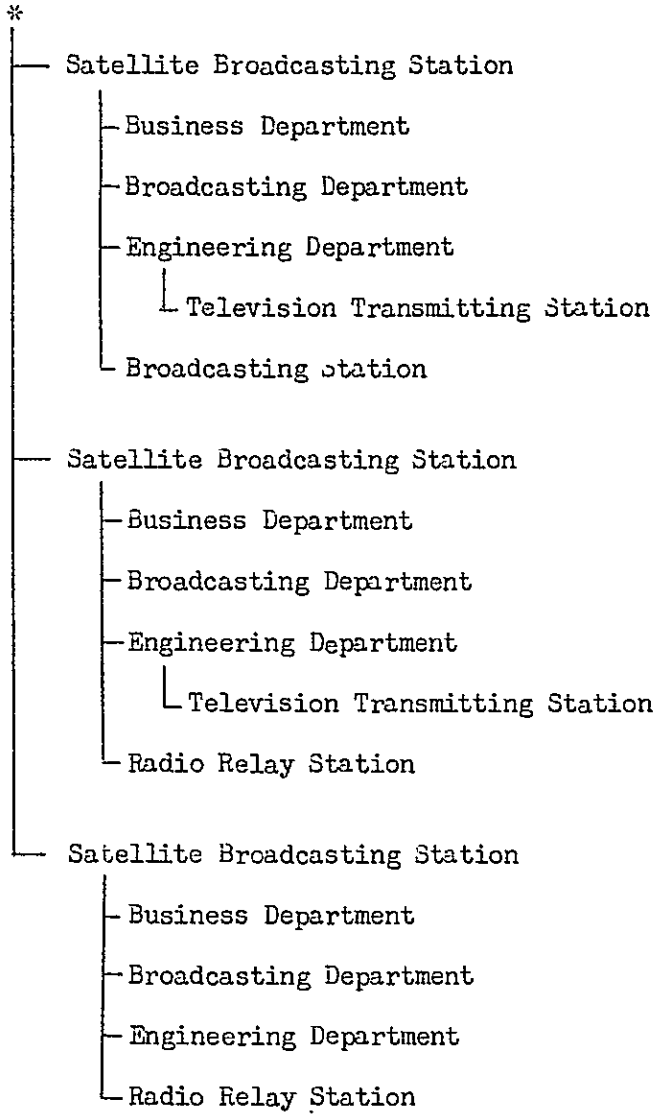
In relation to the funds plan, such expenditures as program costs, engineering costs, personnel costs, administration costs, business

costs, depreciation costs for building and facilities, and interest on borrowed money are calculated to see if the annual total of all amounts to less than that of incomes, or if it is the allowable loss amount that can later be compensated (refer to the information 8 -- reference information on CM incomes).

1.

1.1 Organization Chart




*
Satellite Broadcasting Station
Business Department
Broadcasting Department
Engineering Department
Television Transmitting Station
Broadcasting Station
Satellite Broadcasting Station
Business Department
Broadcasting Department
Engineering Department
Television Transmitting Station
Radio Relay Station
Satellite Broadcasting Station
Business Department
Broadcasting Department
Engineering Department
Radio Relay Station

1.2 Contents of Business (Details of Function)

Chief of Station, Deputy Chief of Station

Post of Station Chief and Deputy Station Chief of main and Central Broadcasting Stations

Chief of Department, Section Chief, Station Chief

Post of Chief other than the above-mentioned posts.

Broadcasting

Control of Field Work

Composition, Announcement of Programme, Liaison, Use and Adjustment of Studio and Rehersal Room, Steering, Photograph, Examination

Programme Production

Production, Direction, Steering, Editing of Insertion Film, Comment

Movie Camera

Insertion Film, Shooting of Drama

Art

Design

Announcement

Announcement (Including English Announcement ?)

News Gathering

Desk

Selection of News, Liaison, Adjustment

Newsman

General News Gathering, Editing of Radio and Television News, Editing of News for International Broadcasting

Correspondent

News Gathering at the Correspondent Office

TV News Camera

Shooting of News

Film Editing

Film Editing

News Field Work

News Gathering Liaison, Receiving and Shipping of Manuscripts, Recording, Selection of Canned Music, Lighting, Reception of Broadcast from Overseas

Part-Time Correspondent

Correspondent (Part-Time)

Engineering

Engineering Control

Control, Application, Maintenance and Determination of Ratings and Standards of Broadcasting Installations and Equipments, Technical Training

Installations

Construction of Broadcasting Installations, Improvement

Study of Technology

Study of Technology

Radio Field Work

Operation, Steering, Programme (Studio Adjustment, Recording, Relay) Electricity, Telephone, Transmission

Photograph

Development

Receiving Set

Reception counceling, Instruction, Prevention of Reception Interference, TV Joint Reception

Architecture

New Construction of Stations, etc. and Maintenance

Office Work

General Office Work

General Affairs, Accounting, Secretary, Liaison, Public Relations, Training, National and Block Superintendence, Exhibition, Guidance of Visitors, Information clerk, Vehicle arrangement

Broadcasting Office Work

Copyright, Broadcasting Charge, Public Entertainers, Studio control, Broadcasting Data, Use of Broadcast, Sponsoring the Meeting, Survey of Public Opinion

Subscription Office Work

Exploitation of Receivers, Contract Number Calculation, Reception fee Office Work, Office Work for the Field Work

Make-up

Make-up, hair-do, Dressing-up

Machine Operation

Operation and maintenance of air-conditioning facilities

Car Driving

Vehicle Driving, Repair

Field Service

Auditing of the Field Work

Investigation and Arrangement

Money collection

Reception Fee collection

Special Engineering

Wood-work, Printing, Book-Binding and so on.

Printing

Printing

Studio work

Stage setting, Stage properties, Assistance to the camera and lighting in and out of the studio

Typewriting

Typewriting in Japanese

Telephone Exchange

Telephone exchange

Guard

Patrol of the building

Sundry Services

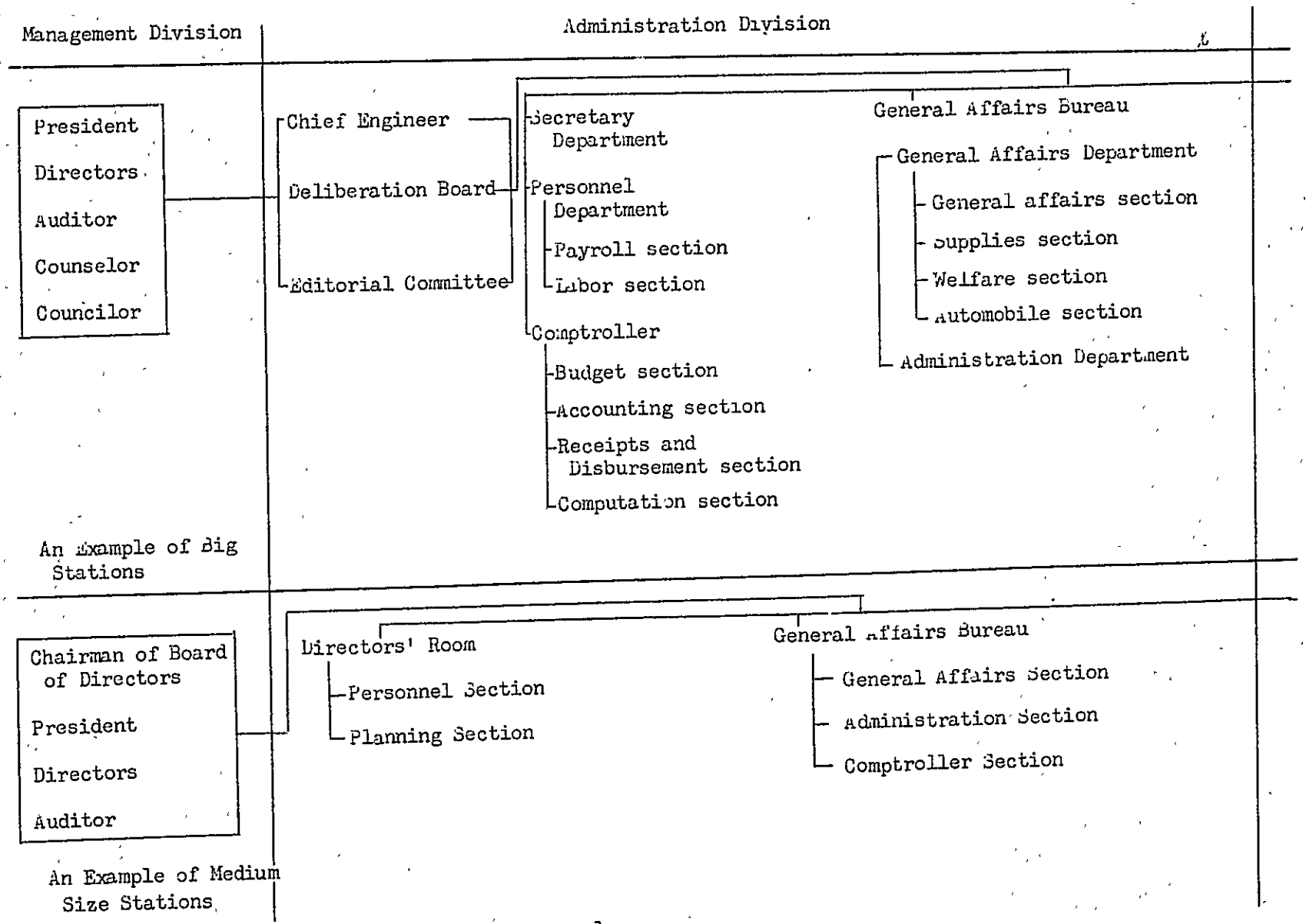
Sundry services

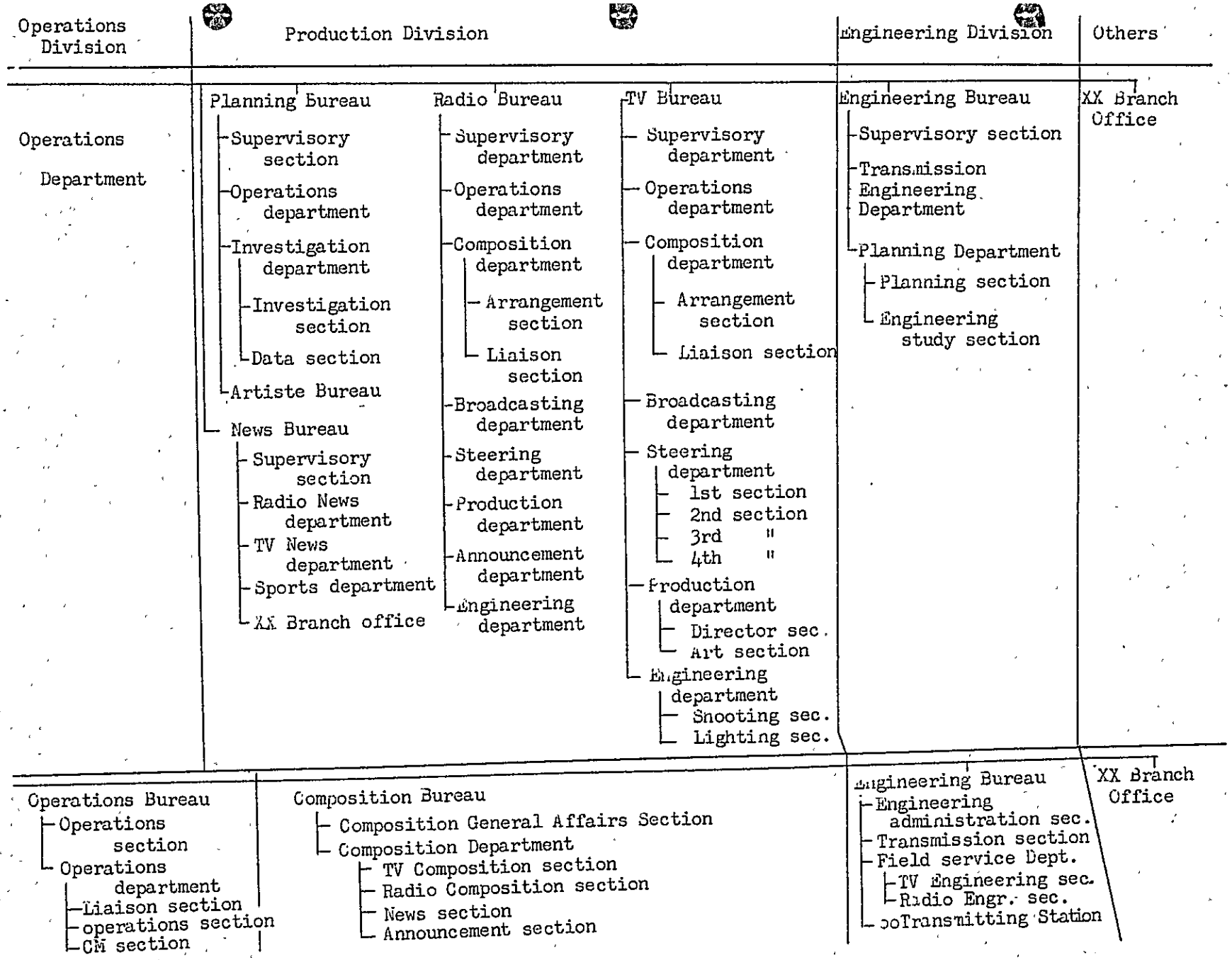
Message, Transport, Cleaning, Dormitory affairs

Office boy

Office boy sundry works

2. Organization Chart of Broadcasting Station (An Example of Commercial Station)




Operations Division
Production Division
Engineering Division
Others
Operations Department
Planning Bureau
Supervisory section
Operations department
Investigation department
Investigation section
Data section
Artiste Bureau
News Bureau
Supervisory section
Radio News department
TV News department
Sports department
XX Branch office
Radio Bureau
Supervisory department
Operations department
Composition department
Arrangement section
Liaison section
Broadcasting department
Steering department
Production department
Announcement department
Engineering department
TV Bureau
Supervisory department
Operations department
Composition department
Arrangement section
Liaison section
Broadcasting department
Steering department
1st section
2nd section
3rd "
4th "
Production department
Director sec.
Art section
Engineering department
Shooting sec.
Lighting sec.
Engineering Bureau
Supervisory section
Transmission Engineering Department
Planning Department
Planning section
Engineering study section
XX Branch Office
Operations Bureau
Operations section
Operations department
Liaison section
operations section
CM section
Composition Bureau
Composition General Affairs Section
Composition Department
TV Composition section
Radio Composition section
News section
Announcement section
Engineering Bureau
Engineering administration sec.
Transmission section
Field service Dept.
TV Engineering sec.
Radio Engr. sec.
Transmitting Station
XX Branch Office

3. Training Facilities

1. Studio 700 ft^2 floor 23 ft high, with light

2. Equipments

1st step

Video:	quantity
Vidicon Camera	1
Distribution amp	1
Synch. Signal Generator	1
Video Amp	1
Video Sweep Generator	1
Oscilloscope (Medium Bandwith)	1
LCR Meter	1
Multivibrator	2
Oscilloscope (Wide)	2
" (Medium)	2
Stabilizing amp	1
Oscilloscope (Wide)	1
Audio Oscillator	1
TV Receiver (Special)	5
Sweep Marker	3
Oscilloscope (Medium)	3
V.V. (Voltohmist)	1
VHF field intensity meter	1
Two signal generator	1
VHF Sweep Generator	1
Film Projector 16 m/m	1
Works	1
Materials	1

Aural:

Microphone	1
Audio amp (with a mixer)	1
Tape Recorder	1
Record Player	1

Common:

Voltage Regulator	1
TR Curve Tracer	1
H Parameter Measuring Equipment	1

2nd Step

Camera	1
IO VTR Chain (Non-B.C. type)	1

3. Text Books

Attachments (Television Hand Book -- Guide to Television Production NHK Central Training Institute, 1963 and Television Engineering A)

4. Traning at the NHK Central Training Institute

1. Training of the recruited

The purpose of this training was to learn a mission as the NHK Personnel, inspire a will of the youth, cultivate the ability to meet an unexperienced work at each port and forter active freshmen.

2. Qualification Training

At the time of promotion, they were trained to learn the importance of their own duties from a new standpoint of view of NHK, arranging the experience and knowledges so far acquired in order that they could perform a higher function. In this course, their insight was enhanced and the informations on the related business were made known.

3. Functional Training

The purpose of this systematic and intentional training was to raise an ability necessary for the performance of their own jobs and help cultivate positively a talent answering to a new post.

(1) Broadcast training

The A class personnel who had not much experience were trained as to their own jobs. Each station also temporarily trained those who needed an in-service training. Those who had several works were trained intensively according to their conditions. At each training rationalization of business was stressed and the knowledges of EDPS were introduced.

(2) Engineering Training

The fundamental Engineering of TV and radio was learned in anticipation of the extension of broadcasting engineering and

business, in addition to the technical training concerning adjustment at studio, film projection, video tape recording fitted to the needs of routine technical works.

Further, the techniques of TV transmission, FM transmission, UHF TV transmission, control and handling of an independent electric power unit were learned aiming at a prompt correspondence to the modernization of installations and improvements of maintenance and application techniques. Moreover, the techniques of color television reception and transmission were learned in connection with the extension of color television business. Then to meet the modernization of business, meeting was held on tne technical administration including the personnel of Management class. Besides, necessary number of staffs were trained to improve quality and adapt promptly to a development of technology and business. Technical correspondence education, and technical conference contributed greatly to this.

Office Work Training

This training aimed at an introduction of EDPS to the Sections of general affirs, accounting and subscription covering every phase of management all over the country. For this purpose, general affairs training course (A) was opened.

4. Other Trainings

Those who were newly promoted to the personnel learned the substance of enterprise and the functional responsibilities. Preliminary training was executed to those who were informally decided to be recruited in 1964.

5. Trust training

Answering to a sudden increase in demand for training from overseas, three course of regular collective training were opened enriching the contents of curriculum. In addition to the above, individual training course was also opened. Participants were 58 persons from 15 countries mainly of South Eastern Asia. Domestic 154 engineers who were engaged in commercial broadcast and others also attended the training. Contributing to strengthen the international friendship in cooperation with the Government, producers and engineers of domestic commercial broadcast were trained.

4-1 Training of Personnel

Name of Training	Purposes
(Recruited Personnel Training)	
Recruited Personnel Training (College Graduate)	Orientation to the Business of NHK.
General Training	Recognition of the enterprise, understanding of the Business of NHK, consciousness of Job responsibility, Fostering of working manner.
On the Spot Training	Acquisition of fundamental knowledge and manner by on-the-spot training.
Technical Training	Acquisition of Technical knowledge and technology.
Recruited Personnel Training (High School Graduate)	
General Training	Same as the college graduate
Technical in-service Training	
(Broadcast Training)	
Broadcast Administration Affairs	Effectivation of fundamental knowledges and a fostering of the fundamental knowledges for introduction of EDPS.
Announcement	Concrete study of interview, on-the-spot broadcasting, and programme production, etc.
Production of Radio Programme	Learning of the fundamental knowledges to the unexperienced personnel.

Name of Training	Purposes
Production of TV programme	Same as the above.
Over-all TV Programme Production	Learning of the fundamental knowledges for those who are in charge of TV broadcast.
International News Gathering	Learning of fundamental knowledges.
Production of international Radio Programme	"
News Gathering	Learning of the fundamental knowledges of News gathering and improvement of news gathering force
News gathering by Camera	Reaffirmation of the fundamental knowledges of news gathering and improvement of news gatnering force
Production by Photograph	Improvement of photographing technique of the backoone cameramen at central stations
News gathering (Correspondence)	Effectivation of tne fundamental knowledges of the correspondent.
Film Editing and Comment (Special Station Training)	To enrich the fundamental knowledges of television editing and in-service training to make use of the localities of the station
(Qualification Training)	
Qualification Training course A course B	Reaffirmation of responsibilities and self-culture

Name of Training	Purposes
(Clerical Work Training)	
Superintendent Training	Learning of the knowledges and attitudes necessary for a superintendent and supervising techniques
Guard Training	Learning of technical knowledges and talent necessary for maintenance
Vehicle Arrangement Training	Learning of the structure of Vehicles and the technical knowledges of arrangement
Money Collection Training	Learning of the knowledges talent and bearing necessary for money collection
General Affairs (A) Training	Learning of clerical talent and bearing for general affairs business
Sanitary Administration Training	Learning of the fundamental knowledges of Sanitary administration
Nurse Training	Learning of the fundamental knowledges necessary for nursery
Training for Reception	Learning of talent and attitude of reception
English-Speaking (Reception) Training	Learning of basic English Speaking ability necessary for reception
Training for guidance of the visitors	Learning of talent and attitude necessary for guidance of visitors
(Engineering Training)	
Voice adjusting (National) technique	Improvement of voice adjusting technique of television and radio

Name of Training	Purposes
Voice Adjusting (local) technique	Improvement of voice adjusting technique of studio and relayed programme
FM Transmission Technique	Improvement of Maintenance and operations technique of FM Broadcasting equipments
Technical Administration (TV in General)	Improvement of television technique and technical administration business
Basic Technique of Television	Improvement of television technique
Television adjusting (national) technique	Improvement of production technique of television programme
Television Adjusting (local) Technique	Improvement of maintenance and operations technique of VTR
VTR (National) Technique	Improvement of maintenance and operations technique of VTR
VTR (Local) Technique	Same as the above.
Film Processing (Local) Technique	Improvement of Film Processing Technique
Film Projection (National) Technique	Improvement of Film Projection Technique
Film Projection (Local) Technique	Same as the above.
TV Transmission Technique	Improvement of maintenance and operations technique of TV broadcasting equipments
UHF TV Transmission Technique	Improvement of UHF TV Transmission technique
TV Reception (National) Technique	Improvement of TV receiving set business
Reception (Local) Technique	Improvement of receiving set business

Name of Training	Purposes
Color TV Reception (National) Technique	Improvement of receiving set for color TV
Color TV Reception (Local) Technique	Same as the above.
Color TV Transmission Technique	Improvement of Color TV transmission technique
Control Technique	Improvement of control technique owing to modernization of equipments
Technical Administration (D class)	Improvement of technical administration business
Independent Electric Power Plant	Improvement of maintenance and operations technique of an independent electric power plant
Fundamental Broadcasting Technique	Fostering of the basic knowledges fitted to the broadcasting technician
Film Processing (National) Technique	Improvement of Film Processing technique
Correspondent Education of Engineering -1st Class	Supply of radio engineers
" -2nd Class	
Block Technical Conference	Improvement of technical level and enhancement of will of study and development.
National Technical Conference	
Other Training	
Training of those who were promoted to the personnel	Recognition of enterprize and consciousness of the functional responsibilities
Class A college graduate	
" high school graduate	

Name of Training	Purposes
Class A ex-effect staff Those promoted to Class L	
Preliminary Training of personnel to be recruited in 1964	Orientation to give the preliminary knowledges of NHK and Introduction to a collective training

4-2 Trust Training

Contents	Remarks
(1) Overseas Participants	
(a) Collective Training	
Learning of production technique of Educational Television programme	Ten countries from South East Asia participated in the training. This was planed by the Middle and Near East Asian Plan, the Colombo Plan, UNESCO Scholarship and the North East Asian Plan, and the overseas Engineering co-operation society and the International Student Association acted as an intermediary. A participant (from VAR) marked with o attended both courses.
Learning of general production technique of television programme	Eight countries from South East Asia attended at the training. Most of the participant were despatched by the North Eastern Asia Plan, AID Colombo Plan and the Government. But some came to this country at their own expenses. The overseas Engineering co-operation Society acted as an intermediary in the main. A participant (from China) denoted by △ attended the individual course for agriculture program production.

Contents	Remarks
Learning of Basic knowledges and technique of television	Five countries from South East Asia participated in this training. The North Eastern Asia Plan and the Colombo Plan sent them to this country. The overseas Engineering cooperation society acted as an intermediary. Two participants (one from Malaysia, the other from Thailand) attended at the individual training of TV Engineering.
(b) Individual Training	
Production of Educational Radio Programme	Vietnam participated by the aid of AID
Production of Television Programme	China participated by the aid of AID
Production of Television Programme	Indonesia participated by the receiving plan of Engineers of Indonesian Reparation
TV Engineering in general	Same as the above.
Broadcasting Business	From China, by ITV
Television Engineering	From Formosa, by intermediation of Asiavision
Production of TV programme and Engineering	From Korea, by the government
Television Engineering	From Malaysia, by Colombo plan
"	From Thailand, by Colombo plan
Production of Agriculture Programme	From China, by AID

Contents	Remarks
(2) Domestic Participants	
FM Transmission Technique -	The Asahi, the Mainichi and the Yomiuri Participated.
Television Basic Technique	The training was trusted by the commercial broadcast Federation. 34 Commercial broadcasting companies participated.
Basic Technique of Television Relay	Trusted by the Metropolitan police Headquarters and the Japan Police Agency.
Production of TV Programme and Engineering	Trusted by the Japan Science and Engineering Developing Fund.
〃	〃

5. Table of Reception Charge System of Main Countries

	Great Britain	France
Broadcasting organ (Character)	BBC (R, TV) (Public Broadcast) ITA (TV) (Commercial Broadcast)	RTF (Public Broadcast)
Annual Reception Charge	R 1 pound (1008 yen) R TV 4 pounds (4032 yen) Application for Charge hike to 6 pounds of R TV is pending	R - 25 New Franc (1823 yen) R-TV: 85 New Franc (6198 yen) Special fees is charged on the open-to-public broadcast
Character of Charge	License Commission	National Tax
Calculation Base of Reception Charge	It is politically determined as the operating funds of BBC and expenses of broadcasting Business of post office	Levy on the right to use the broadcasting reception sets
Organ and Procedures of Reception Charge Decision	Postmaster General decides with an approval of the Secretary of the Treasury	Decision by Law
Organ and Method of Reception Charge Collection	1. Post Office Department 2. Payment at Post Office 3. Annual payment	1. Broadcasting Organ 2. Payment at post office 3. Annual payment
Penalty	1. Penalty 2. Confiscation of receiving set 3. Corporal Punishment	1. Reception without notice First offense - four times of Reception Charge Second offence - Ten times of Reception Charge 2. Confiscation of receiving set
Revenue other than the Reception Charge	1. Grant-in-aid for International Broadcast (16.4%) 2. Revenue from publications	Selling of publications, Film, Record and so on.
Number of Receiving Set Upper Radio Lower TV (Unit: Ten thousand)	15880 1279	1430 940
TV popularization Rate (Against population)	26.3 %	9.1 %

Italy	West Germany
RAI Special corporation having public character	R - Public Broadcast in 9 Blocks such as NDR TV - DF, ZDF (public)
R 2450 Lira (1421 yen) R TV 12000 Lira (6960 yen) In addition to the above License Tax of government R 850 Lira TV 2000 Lira, Extra Charge for use at the public	R 24 Mark (2160 yen) R-TV 84 Mark (7560 yen)
Equivalent for the service	License Commission
Politically determined as the expenditures necessary for operating RAI, national popularization of broadcast and extension in future	Service cost principle
Decision by the Price coordination committee of each ministry	Decision by Law
1. Ministry of Finance 2. Payment at post office 3. Annual payment band 3 month payment possible but extra fare is charged	1. Post office department 2. Door-to-door collection by mailman or payment at post office 3. Annual Payment
1. Denial of contract penalty up to 5000 Lira 2. Denial of payment compulsory execution	1. Cancellation of License 2. Denial of Payment Legal action
1. Revenue from Commercial Broadcast (27.85%) 2. Miscellaneous 2.87%	Revenue from a spot broadcast
938 429	1692 900
8.5	14.8

Holland	Belgium
5 Nonprofit private organization such as AVRO	Belgium - French Broadcasting Association (RTB) Belgium - Flanan " (BRT) (public)
R 12 guildar (1193 yen) TV 36 guildar (3580 yen)	R 204 Belgium Franc (1470 yen) TV 960 " (6910 yen)
License Commission	National Tax
Political decision basing in the service cost principle	Service cost principle
Decision by Law	Decision by Law
1. Post Office Department 2. Payment at post office 3. Monthly payment TV Annual or semiannual payment	1. Government 2. Payment at Post office 3. R - Annual payment TV - Annual or semiannual payment
1. Arrearage - legal action 2. Reception without notice Sealing of receiving set	Legal panalties are applied
1. Revenue from publication 2. Donations from listners	1. Donation and Legacy 2. Issue of bond
307 157	290 120
13.1 %	13.0 %

Austria	Switzerland
Austria Broadcasting Association (OR) public	Swiss Broadcasting Association (Federation of 9 private nonprofit companies)
R 93 shilling (1357 yen) TV 600 shilling (8310 yen)	R - 26 Swiss franc (2185 yen) TV 84 " (7060 yen) Special fare for use at public
Equivalent for the service	License Commission
Polital decision as the expenditures of operating OR	Service cost principle with a policy of expediting the spread of TV
Decision by Law	Decision by Law
1. Post Office 2. Bimonthly door-to-door collection in principle. Annual payment by check or exchange possible	1. Post administration bureau 2. Payment at post office 3. R - Annual payment TV, RTV Monthly payment
1. Without license - Penalty 2. Arrearage Confiscation of License	1. Confiscation of Receiving Set 2. Legal penalties
1. Revenue from ad broadcast 2. State subsidy	1. Financing from the Government 2. Grant-in-aid from the Press Association (Ad broadcast in TV is anticipated in future)
210 46	157 37
6.6 %	6.7 %

Denmark	Norway
Denmark Broadcasting Association (public)	Norway Broadcasting Association (public)
R 35 Krone (1820 yen) R TV 140 Krone (7300 yen)	R 40 Krone (2016 yen) R TV 165 Krone (8330 yen)
License Commission	License Commission
Operating cost of Broadcasting Organ	Operating cost of Broadcasting Organ
Education minister decides with an approval of standing committee for Budget basing on the submission by the organ	National diet decides after submitted by the organ
1. Broadcasting organ 2. Payment at post office or at the station 3. Annual payment	1. Broadcasting organ 2. Payment at post office 3. Annual payment
1. Penalty from 40 to 400 Krone 2. Confiscation of receiving set 3. Criminal penalty	1. Confictation of receiving set 2. Extra charge 3. Arrearage additional collection, compulsory execution
None	Revenue from the commodity tax for the receiving set and parts
167 93	126 29
19.0 %	7.9 %

Sweden	Czechoslovakia
Sweden Broadcasting Association (Special corporation with a public character)	Czechoslovakian National Radio Broadcast Czechoslovakian National TV Broadcast
R 30 Krone (2088 yen) TV 100 Krone (6959 yen)	R 60 Krone (3000 yen) TV 180 Krone (9000 yen)
License Commission	License Commission
Service cost principle	Politically decided considering the spread measures
Government	Government
1. Electrical Communication Administration Bureau 2. At the above bureau or at post office 3. R Annual payment TV once-in-three months payment	1. Central post office 2. Payment at post office 3. R - once-in-three months payment to monthly payment
1. Penalty up to 300 Krone 2. Retrocative back collection	1. Denial of payment - Penalty 2. Confiscation of Receiving set
1. Grant-in-aid by government 2. Revenue from publications	Government Subsidy
294 182	366 136
24.0 %	9.1 %

Poland	Japan
Poland Broadcasting Committee (National)	NHK (Public) Commercial Broadcast
R 180 ? (1620 yen) TV 480 ? (43200 yen)	R 600 yen R TV 3960 yen
License Commission	Equivalent for the service
Politically determined considering the spread measures	Operating expenditures of NHK
Postmaster General determines	National Diet
1. Post Office Department 2. Payment at post office 3. Monthly payment	1. NHK 2. Bimonthly, Door-to-door collection in principle. Paying at bank or 6 or 1 month advance payment possible.
Penalty of 1000 ?	None
Government subsidy	Grant-in-aid for the international Broadcast
562 130	1950 1598
4.0 %	16.6 %

6. Number of TV Receiving Set used at each country

Name of country	Total Number of Receiving Set	Date of Investigation	Popularization Rate for Population
North American			
U. S. A.	56,300.000	1961.3	30.9
Canada	4,157,700	1962.10	22.5
Central and South America			
Argentine	770,000	1961.12	3.8
Uruguay	60,000	"	2.1
Ecuador	5,000	"	0.1
El Salvador	32,000	1960.10	1.2
Cuba	500,000	1961.3	7.6
Guatemala	35,000	"	1.0
Costa Rica	10,000	1961.12	0.8
Columbia	200,000	"	1.4
Chile	3,000	"	0.04
Dominica	18,578	1961.11	0.6
Nicaragua	5,000	"	0.3
Haiti	2,000	1961.12	0.06
Punama	29,000	"	2.7
Bermuda	9,400	1960.12	21.4
Puerto Rico	225,000	1960.1	9.6
Brazil	1,621,000	1961.12	2.4
Venezuela	263,000	"	3.5
Peru	82,000	"	0.8
Honduras	4,500	1961.11	0.2
Mexico	1,000,000	1961.12	2.9

Name of country	Total Number of Receiving Set	Date of Investigation	Popularization Rate for Population
Asia			
India	500	1961.12	0.0001
Indonesia	12,000	1963.1	0.02
Korea	20,000	1961.12	0.08
Thailand	100,000	"	0.4
China	20,000	"	0.003
Japan	13,219,052	1963.2	13.8
The Philippines	45,000	1961.12	0.2
Hong Kong	11,000	"	0.4
Middle and Near East			
United Arab Republic	120,000	1961.12	0.5
Iraq	75,000	1961.1	1.1
Iran	62,000	1961.12	0.3
Cypruo	4,500	1962.12	0.9
Saudi Arabia	11,000	1961.1	0.2
Turky	1,000	"	0.4
Lebanon	40,000	1961.12	2.5
Africa			
Algeria	63,093	1961.5	0.6
Ethiopia	1,000	1961.12	0.004
Federal Central Africa	23,000	"	0.3
Tunisia	2,000	"	0.05
Nigeria	10,000	"	0.03
Libia	7,000	"	0.6
Oceania			
Australia	1,377,569	1962.6	13.1
New Zealand	23,343	1962.3	0.9

Name of country	Total Number of Receiving Set	Date of Investigation	Popularization Rate for Population
Europe			
Great Britain	12,230,987	1962.12	23.2
Italy	3,457,262	"	6.8
Eire	127,447	"	4.5
Austria	404,976	1963.1	5.7
Holland	1,275,000	1962.12	11.0
Switzerland	283,006	1963.1	5.2
Sweden	1,630,598	1962.12	21.7
Spain	420,000	1961.12	1.4
USSR	9,000,000	1963.5	4.1
Czechoslovakia	1,355,607	1962.12	9.8
Denmark	851,482	"	18.6
West Germany	7,574,167	1963.3	14.0
Norway	204,108	1962.12	5.6
Hungary	325,000	"	3.3
East Germany	1,663,543	1962.7	9.6
Finland	336,129	1962.12	7.5
France	3,426,839	"	7.4
Bulgaria	31,061	1962.6	0.4
Belgium	1,017,503	1962.12	11.1
Poland	959,433	"	3.2
Portugal	89,642	"	1.0
Monaco	12,000	1961.12	52.2
Yugoslavia	125,845	1962.12	0.7
Luxenburg	13,011	"	4.1
Rumania	68,000	1961.12	0.4

7. Broadcasting Station in Big City

Time Fare (in Japanese Yen)

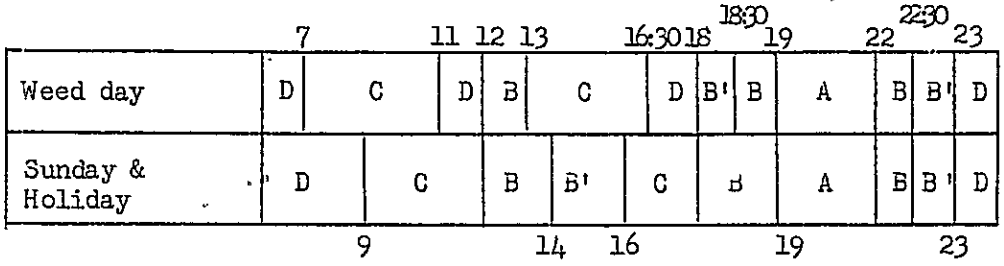
Time (minutes)	A	B	B'	C	D
60	1,000,000	750,000	500,000	400,000	300,000
55	930,000	697,500	465,000	372,000	279,000
50	850,000	637,500	425,000	310,000	255,000
45	800,000	600,000	400,000	320,000	240,000
40	750,000	562,500	375,000	300,000	225,000
35	680,000	510,000	340,000	272,000	204,000
30	600,000	450,000	300,000	240,000	180,000
25	550,000	412,500	275,000	220,000	165,000
20	480,000	360,000	240,000	192,000	144,000
15	400,000	300,000	200,000	160,000	120,000
10	375,000	281,250	187,500	150,000	112,500
5	350,000	262,500	175,000	140,000	105,000

- o Term of broadcasting application is three months in principle. It can be extented to six months.
- o Fare over 60 minutes is calculated by applying the rate of 60 minutes.
- o 45 sec Station Break is included in the above time.
- o Programme production and network relaying expenses are not in the above fare table.
- o Special fare is charged at each time as a joint sponsor program when more than two company names or brands are inserted in the sentence.

* Frequency Discount Rate Three months: 5%

Six months: 10%

Time Division (Common to time and spot)



Spot Fare

	A	B	B'	C	D
15 second	130,000	90,000	60,000	50,000	40,000
* CM Card	A	B	B'	C	D
5 second	70,000	50,000	35,000	28,000	22,000
* ID Card	A	B	B'	C	D
5 second	60,000	45,000	30,000	24,000	18,000
* Guide	B	B'	C	D	
15 second	60,000	40,000	35,000	25,000	
5 second	35,000	25,000	20,000	15,000	

Note on Spot Fare

- o Maximum contract term is 6 months.
- o Frequency discount is not applied to each fare.
- o When a station break hour is occupied by other programmes owing to a programme composition or transmission becomes impossible because of technical failures, the spot may be suspended or shifted to other hour.
- o Time division is same as the Time Fare.

- o Higher fare is applied to the boundary time of time division.
- o Material of spot is limited to SOF. (Talkie Film)
- o Three quarters of ID Card are for CM advertising and the lower quarter is used for station identification.
- o Character and layout of station identification section in ID Card is specified. Specified Forms are prepared at CM section of TV operations Bureau.

* Moving Mini Commercial (MMC)

	A	B	B'	C	D
5 second	25,000	20,000	15,000	12,000	10,000

Use SOF when voice is inserted

No Frequency Discount

Announcement Commercial Card

	A	B	B'	C	D
10 second	20,000	18,000	15,000	13,000	10,000

Announcement should be less than 45 syllable.

No Frequency Discount

10 second film (moving) is considered as ST. B. S.

Commercial Card (CC)

	B'	C	D
5 second	6,000	5,000	3,000

No Voice

No Frequency Discount

Moving ID (MID)

	A	B	B'	C	D
5 second	20,000	15,000	12,000	10,000	8,000

Please use SOF when voice is inserted.

No Frequency Discount

Announcement ID Card (AID)

	A	B	B'	C	D
5 second	12,000	9,600	8,400	7,200	6,500

Announcement should be within 3 seconds

BSN Card (BC)

	A	B	B'	C	D
5 second	10,000	8,000	7,000	6,000	5,000

No voice

No Frequency Discount

Television Guide

60 seconds	30,000
30 seconds	20,000

No Frequency Discount

8.

8-1 Growth of National Income and Outlay for Advertisement

Nation / Year	Japan			U.S.A			England		
	National Income Index	Outlay for Advertisement Index	Percentage against the previous year In	National Income Index	Outlay for Advertisement Index	Percentage against the previous year	National Income Index	Outlay for Advertisement Index	Percentage against previous year
1955	100.0	100.0	~	100.0	100.0	~	100.0	100.0	~
1956	113.0	122.3	122.3	106.2	123.3	123.3	108.4	103.3	100.0
1957	126.5	154.4	126.2	111.1	128.4	104.1	114.4	110.0	106.5
1958	127.9	172.7	113.3	111.3	128.4	99.9	119.8	120.0	109.1
1959	147.9	235.1	136.7	121.3	138.4	108.0	125.1	133.3	111.1
1960	176.1	282.8	119.5	125.5	148.6	107.3	133.5	150.0	112.5
1961	210.1	341.1	121.3	129.0	147.6	99.3	142.5	156.7	104.4
1962	236.0	391.5	115.4	137.4	154.2	104.5	147.9	180.0	102.1
1963	275.2	479.0	122.2	144.9	162.5	105.4			

8-2 Advertising Expenses According to Media and a Change of Percentage

(Japanese Yen 100 million)

Media / Year	News Paper		Magazine		Radio		Television		D. M		Outdoor		Export Ad.		Total	
	Outlay for Advertisement	Percentage against previous year	Outlay for Advertisement	Percentage against previous year	Outlay for Advertisement	Percentage against previous year	Outlay for Advertisement	Percentage against previous year	Outlay for Advertisement	Percentage against previous year	Outlay for Advertisement	Percentage against previous year	Outlay for Advertisement	Percentage against previous year	Outlay for Advertisement	Percentage against previous year
1947	11	~	1.6	~							2	~			14.6	~
1948	28	254.5	2	125.0							3	150.0			33	226.0
1949	80	285.7	5	250.0							20	666.7			105	318.2
1950	120	150.6	7	140.0							40.5	202.5			167.5	159.5
1951	180	150.0	10	142.9	3	~					50	123.5			243	145.1
1952	270	150.0	18	180.0	22	733.3					75	150.0			385	158.4
1953	320	118.5	25	138.9	45	204.5	1	~			100	133.3			491	127.5
1954	322	100.6	30	120.0	74	164.4	4	400.0			120	120.0			550	112.0
1955	337	104.7	35	116.7	98	132.4	9	225.0			130	108.3			609	110.7
1956	405	120.2	40	114.3	130	132.7	20	222.2			150	115.4			745	122.3
1957	510	125.9	50	125.0	150	115.4	60	300.0			170	113.3			940	126.2
1958	525	102.9	55	110.0	157	104.7	105	175.0			210	123.5	13	~	1,065	113.3
1959	618	117.7	80	145.5	162	103.2	238	226.7			334	159.0	24	184.6	1,456	136.7
1960	684	110.7	100	125.0	178	119.9	388	168.0			372	111.4	18	75.0	1,740	119.5
1961	824	120.5	125	125.0	178	100.0	539	138.9	90	~	321	~	33	183.3	2,110	121.3
1962	922	111.9	144	115.2	173	97.2	690	128.0	102	113.3	353	110.0	51	154.5	2,435	115.4
1963	1,120	121.5	169	117.4	171	98.8	899	130.3	117	114.7	441	124.9	65	127.5	2,982	122.5

8-3 Transition of Advertising Expenditure According to Industrial Classification

(Japanese Yen 100 million)

	Industrial Classification (Amount)							Industrial Classification (%)						
	'58	'59	'60	'61	'62	'63	'64	'58	'59	'60	'61	'62	'63	'64
Medicine	16.4	16.5	26.2	44.1	64.3	80.5	113.7	17.3	15.7	11.0	11.4	11.9	11.7	12.7
Costemtics	6.0	10.3	22.1	35.3	46.5	62.8	80.7	10.0	9.8	9.3	9.1	8.6	9.1	9.0
Publishing	1.0	1.0	3.2	5.5	7.2	9.3	11.7	1.7	1.0	1.3	1.4	1.3	1.3	1.3
Food	11.4	19.6	51.7	84.9	111.9	130.8	180.3	19.0	18.6	21.7	21.9	20.8	19.0	20.1
Band and Insurance	2.1	5.0	13.8	23.1	31.7	44.2	61.9	3.5	4.7	5.8	6.0	5.9	6.4	6.9
Machinery	18.8	32.4	74.1	110.6	148.2	172.8	190.2	31.3	30.8	31.2	28.5	27.6	25.0	21.1
Clothing	3.8	7.5	14.5	28.0	37.3	48.9	57.3	6.3	7.2	6.1	7.2	6.9	6.4	6.4
Sundries	0.5	3.2	14.7	30.4	49.4	64.8	86.6	0.8	3.1	6.2	7.8	9.2	9.4	9.6
Department Store	2.0	3.2	4.5	6.2	8.5	11.3	12.9	3.8	3.0	1.9	1.6	1.6	1.6	1.4
Amusement Industry	0.9	0.1	0.1	0.1	0.1	0.3	0.2	1.5	0.0	0.1	0.0	0.0	0.0	0.0
Transportation	1.5	2.4	3.1	2.8	3.6	7.4	8.7	2.5	2.3	1.3	0.7	0.7	1.1	1.0
Others	1.6	3.9	9.8	17.1	29.8	61.9	94.6	2.7	3.8	4.1	4.4	5.5	9.0	10.5
Total	60.0	105.1	237.8	388.1	538.6	690.0	898.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0

8-4 Change of Percentage of Advertising Expenditure Against the National Income

Nation / Year	Japan			U. S. A.			England		
	National Income (100 million yen	Advertising Expenditure	Percentage	National Income (100 million dollar)	Advertising Expenditure	Percentage	National Income (100 million dollar)	Advertising Expenditure	Percentage
1955	65,346	609	0.93	3,302	80.3	2.43	167	3.0	1.80
1956	73,863	745	1.01	3.508	99	2.82	181	3.1	1.71
1957	32,694	940	1.14	3.669	103.1	2.81	191	3.3	1.73
1958	83,591	1,052	1.26	3.674	103	2.80	200	3.6	1.80
1959	96,660	1,432	1.48	4.005	111.2	2.78	209	4.0	1.91
1960	115,045	1,722	1.50	4.145	119.3	2.88	223	4.5	2.01
1961	137.303	2,077	1.51	4.261	118.5	2.78	238	4.7	1.97
1962	154.208	2,384	1.54	4.537	123.8	2.73	247	4.8	1.94
1963	179.850	2,917	1.62	4.784	130.5	2.73			

Part 3 Scheme A

Section 1. Facilities

§1. Sites and service areas

Topographic conditions must be taken into consideration for the selection of transmitter sites. Out of the proposed 6 stations, 5 stations have been found easy to locate. In Karachi, Hill Park was found suitable. Space for the studio facilities will also be available here. In case of failure to acquire this place, a similar place will be available not far from Hill Park. In Lahore, the terrain is all flat. There is no need of terrain consideration. In Dacca, the terrain is also all flat. In Peshawar, the terrain is almost flat: only height available here will be Tehsil (1,140 feet), almost the centre of the city. This place can be a transmitting site. Assuming this place is not available for some reason and another place is chosen, Tensil is unlikely to form an obstacle to TV propergation in this area. In Islamabad, Shaker Perian (1952 feet), 5 miles north from Rawalpindi, is proposed. In Chittagong, there are several hill tops in the city. One of them can be the site for the transmitter. However, the selection must be very careful because the rest hill tops may constitute obstacles to the TV propagation. Further study is needed.

As the studio sites, there is no need of terrain consideration, rather need of transport benefit. All the proposed or expected transmitter sites are easy of access. Therefore both transmitter and studios would be located in the same place. In case a transmitter and studios are separated by some reason, a studio-to-transmitter link is needed.

This STL can be provided by either underground TV cable or micro-wave (6-7 GC range is recommendable). When the distance is short, the cable may be less costly though it depends on the ground condition too. Micro-wave may be safer in case of flood.

The service areas of the proposed 6 outlets are indicated the table below and illustrated in the maps. For Chittagong, more detailed illustration is needed because of the terrain condition. This must be done after the site is determined.

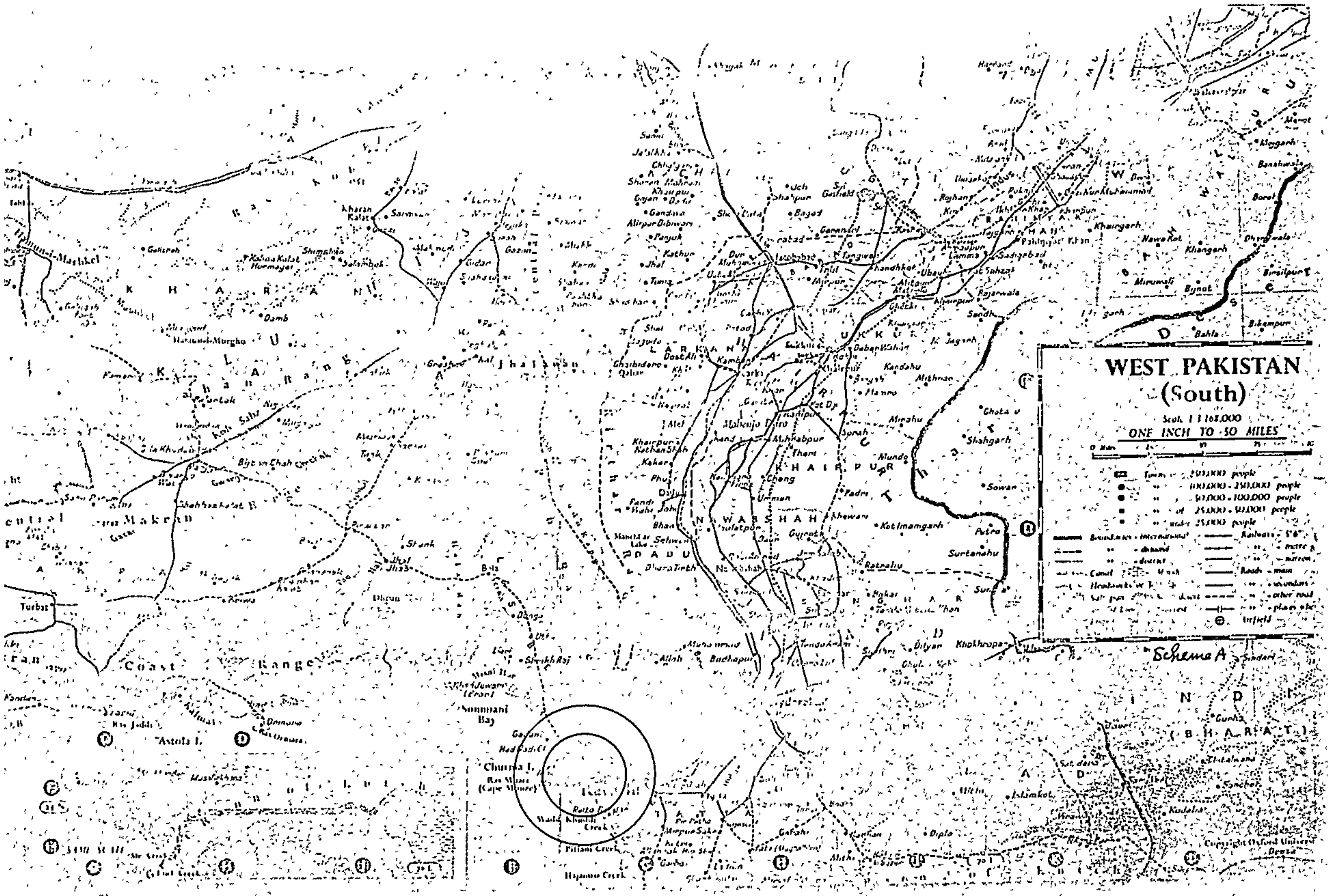
Service Areas

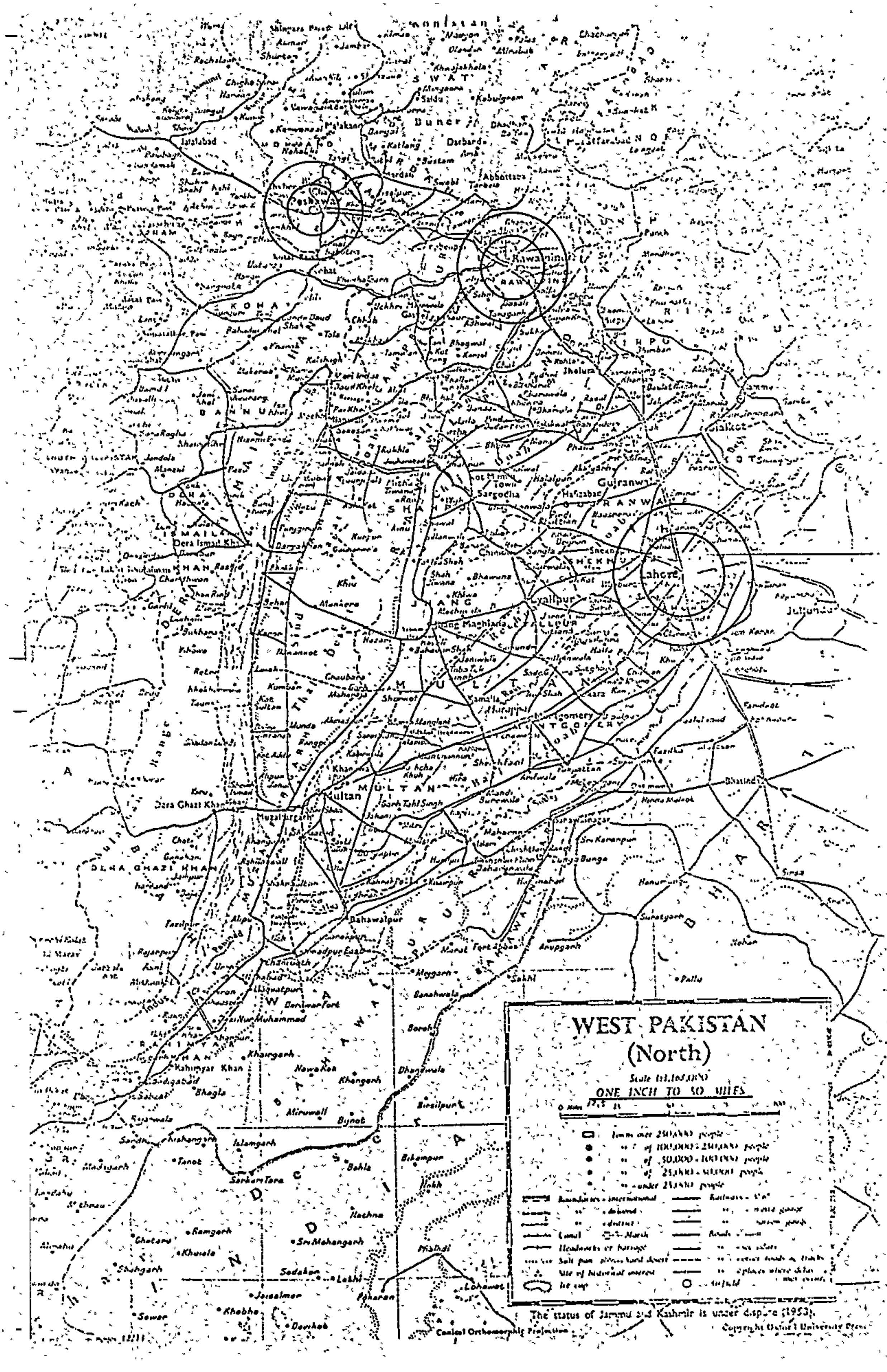
Station	ERP (KW)	Antenna height (feet)	Radius of Service Area (Miles) Grade A	Grade B
Karachi	32	300	19	32
Lahore	32	300	19	32
Dacca	32	300	19	32
Rawalpindi	6	300	14	25
Peshawar	1.8	300	11	21
Chittagong	1.8	300	11	21

The service areas are indicated by the field intensity contours of Grade A and Grade B for which the required field intensities are as follows:-

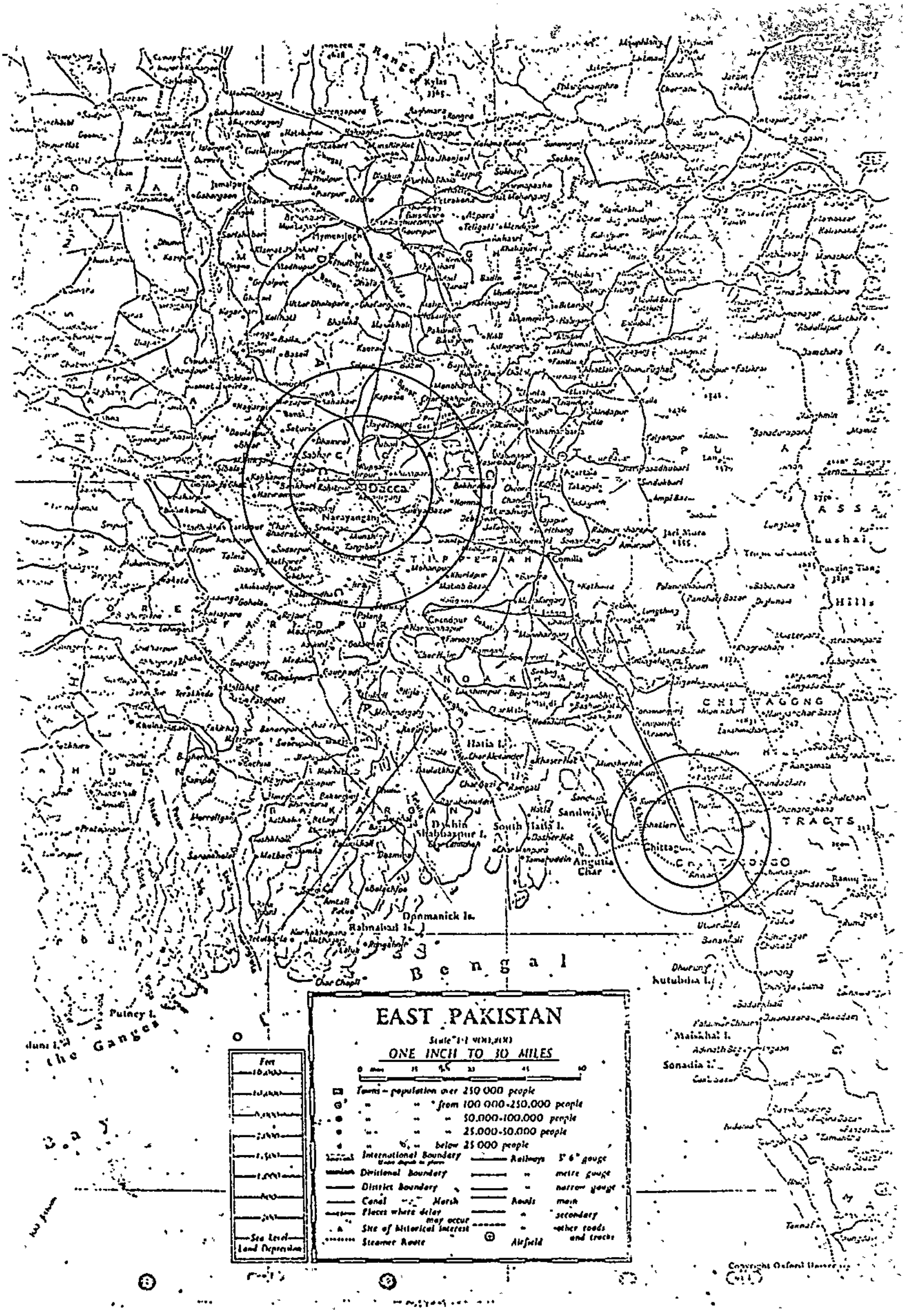
	GRADE-A		GRADE-B	
	db	mv/m	db	uv/m
Channel 3 & 4	68	2.5	47	222
Channel 5 & 6	71	3.5	56	625

Receiver antennas were assumed 15 feet high. Under actual conditions, however, the coverage may vary from these estimated service areas. If receiver antennas are 30 feet high, the radius of service area may be several miles more.


WEST PAKISTAN
(South)
ONE INCH TO 50 MILES
Scheme A
Copyright Oxford University
Makran
Coast Range
Sonmiani Bay
Astola I.
Churna I.
Turbat
Kharan Kalat
Nawabshah
Khairpur
Dadu
Larkana
Sukkur
Jacobabad
Indus



WEST PAKISTAN
(North)
ONE INCH TO 50 MILES
Peshawar
Rawalpindi
Lahore
Lyallpur
Gujranwala
Sialkot
Sargodha
Multan
Montgomery
Bahawalpur
Dera Ismail Khan
Dera Ghazi Khan
Muzaffargarh
Jhang Maghiana
Jullundur
Bhatinda
Abbottabad
Kohat
Buner
Jalalabad
The status of Jammu and Kashmir is under dispute (1953)
Conical Orthomorphic Projection


EAST PAKISTAN
ONE INCH TO 30 MILES
Towns – population over 250 000 people
" " from 100 000-250,000 people
" " " 50.000-100.000 people
" " " 25.000-50.000 people
" " below 25 000 people
International Boundary
Divisional Boundary
District Boundary
Canal
Marsh
Places where delay may occur
Site of historical interest
Steamer Route
Railways 5' 6" gauge
metre gauge
narrow gauge
Roads main
secondary
other roads and tracks
Airfield
Feet
Sea Level
Land Depression
Dacca
Narayanganj
Comilla
Chittagong
Mymensingh
Jamalpur
Sandwip I.
Hatia I.
South Hatia I.
Dakhin Shahbazpur I.
Rabnabad Is.
Dönmanick Is.
Kutubdia I.
Maiskhal I.
Sonadia I.
Bengal
the Ganges
Angutia Char
Char Chapli
Pulney I.
TIPPERAH
NOAKHALI
CHITTAGONG
TRACTS
ASSAM
Lushai
Hills
KHULNA
FARIDPUR
BAKARGANJ
MYMENSINGH

§2. TV Station Facilities

(1) Outline

1. Scheme A includes the establishment of six television stations one each at Karachi, Lahore, Dacca, Rawalpindi, Peshawar, and Chittagong.
2. The Stations at Karachi, Lahore, and Dacca are full-fledged stations, each of which operates on a 5kw transmitter with a 6 section superturn-style antenna of 300 feet high. Each station is provided with such programme-producing facilities as master control, studios, telecine, film developing, VTR, film sound recording, OB van and Kinescope recording.
3. The station in Rawalpindi, Peshawar, and Chittagong are satellite stations. Rawalpindi station operates on a 1 kw transmitter with a 6 section superturn-style antenna of 300 test high. Peshawar and Chittagong stations operate on 300 W with the same antenna as Rawalpindi. Rawalpindi station is provided with master control, studio, telecine and VTR and the other station with master control and telecine.
4. The tabulation of the above facilities together with costs involved is indicated in the following:

Table of Facilities and Costs (£)

	Karachi	Lahore	Dacca	Rawalpindi	Chittagong	Pashawar
Antenna Mast	18,000	36,000	36,000	18,000	18,000	36,000
Antenna	5,600	5,700	5,700	5,700	5,700	5,700
Transmitter & Control Equipment	43,700	43,700	43,700	24,700	19,000	19,000
Measuring Instrument	4,465	4,465	4,465	4,465	4,465	4,465
Accessory Equipment	570	570	570	9,025	570	570
Construction Work	9,025	9,975	9,975	570	9,025	9,975
Transmitting Station Total	81,460	100,410	100,410	62,460	56,760	75,710
Master Control Room Facilities	25,745	25,745	25,745	16,435	16,435	16,435
Studio Facility (1) (3,000 ft^2)	57,190	57,190	57,190	-	-	-
" (2) (2,000 ft^2)	24,890	24,890	24,890	-	-	-
" (3) (1,500 ft^2)	-	-	-	47,215	47,215	40,945
" (4) (1,200 ft^2)	-	-	-	-		
Telecine Equipment	26,600	26,600	26,600	11,590	11,590	11,590
Film Developing Equipment	6,365	6,365	6,365	-	-	-
VTR Equipment	49,050	49,050	49,050	25,200	-	-
Film Sound Recording	9,785	9,785	9,785	-	-	-
Outside Broadcast Van	51,490	51,490	51,490	-	-	-
Power Supply Equipment	46,800	46,800	46,800	31,500	18,000	18,000
Measuring Instrument	9,120	9,120	9,120	4,123	4,123	4,123
Studio Total	307,035	307,035	307,035	136,063	97,363	91,093
Cine Film Facilities	4,700	4,700	4,700	4,700	1,000	1,000
Studio Accordation	15,000	15,000	15,000	5,000	5,000	5,000
Total	19,700	19,700	19,700	9,700	6,000	6,000
Grand Total	408,195	427,145	427,145	208,223	160,123	172,803

Estimated Cost of Karachi TV Transmitting Station and Studio

1. Transmitting Station

Description	Quantity	Cost in £	Remarks
Tower	1 set	18,000	160 feet, self supporting
Antenna	1 set	5,700	6 stack super turnstile type
Transmitter and Control Equipment	1 set	43,700	5 KW
Measuring Instrument	1 set	4,465	
Accessory Equipment	1 set	570	Tool, Monitor, Receiver, etc.
Construction Work		9,025	
Total		81,460	

2. Studio Equipment

Description	Quantity	Cost in £	Remarks
Master Control Room Facilities		25,745	
Studio A Facilities		57,190	
" B "		24,890	
Telecine Equipment		26,600	
Film Developing Equipment		6,365	
VTR Equipment		49,050	
Film Sound Recording		9,785	
Outside Broadcast Van		51,490	
Power Supply Equipment		46,800	
Measuring Instrument		9,120	
Total		307,035	

In case of exchanging programmes by Kinescope recording, £50,000 should be added.

2 - (1) Master Control Facility

Description	Quantity	Cost in £	Remarks
Video and Audio Control Facility	1 set	4,750	
Monitor Console	3	2,850	including Master Monitor 3
Synchronizing Signal Generator	2	3,800	including Sync. Lock, and standby
News Studio Lighting Facility		95	
" 1.0 Camera Chain	1	7,600	including Tripod
Stabilizing Amplifier	2	665	
Video and Sync. Distribution Amp.	1 set	1,425	
Telecine Control Facility	1 set	950	
Audio Amplifier	1 set	285	
3-Speed Disc Reproducer	1	665	
Intercommunication Monitor	1 set	570	
Accessory Equipment	1 set	950	
Construction Work		950	
Call Sign Machine	1	190	
Total		25,745	

2 - (2) Studio A Facility (3000 feet^2)

Description	Quantity	Cost in £	Remarks
Image Orthicon Camera Chain	3 sets	18,525	including Camera Pedestal
Video Control Unit	1	8,075	
Video Distribution Amp. and Monitor	1 set	2,375	
Audio Control Unit	1	4,750	
3-Speed Disc Reproducer, Tape Reco.	each 1	1,330	
Microphone Equipment	1 set	2,185	
Light Control Unit	1 set	9,500	
Light	1 set	1,900	
Light Control Board	1 set	4,750	
Accessory Equipment		1,425	
Construction Work		2,375	
Total		57,190	

2 - (3) Studio B Facility (2000 feet^2)

Description	Quantity	Cost in £	Remarks
Audio Control Unit	1	4,750	
3-Speed Disc Reproducer, Tape Record.	each 1	1,330	
Microphone Equipment	1 set	2,185	
Light Control Unit	1 set	7,600	
Light	1 set	1,900	
Light Control Board	1 set	3,800	
Accessory Equipment		1,425	
Construction Work		1,900	
Total		24,890	

The total amount above is calculated supposing video control is drived by O.B. Van. In case video control equipment is set up in sub-control room, £24,000 should be added for two sets of Image Orthicon Camera Chain and one set of Video Control Unit, video distribution amp. and monitor.

2 - (4) Telecine Equipment

Description	Quantity	Cost in £	Remarks
Flying Spot Scanner Equipment	1	4,655	
16 m/m Film Projector	2	4,370	
35 m/m Film Projector	2	7,600	
Optical Multiplexer, Slide Projector	each 2	1,520	
Vidicon Camera Chain	2	6,080	
Film Sound Recorder	1	1,425	
Accessory Equipment	1 set	475	
Construction Work		475	
Total		26,600	

(2) - (5) Film Developing Equipment

Description	Quantity	Cost in £	Remarks
Automatic Film Developer	2	3,230	Negative, Positive
None-slip Type Printer	1	665	
Developing Desk	1 set	475	
Measuring Instrument	1 set	380	
Editing Film Projector	1 set	380	
Record Mechine, Film Editor	1 set	665	
Chemical Facility	1 set	285	
Accessory Equipment, Construction Work		285	
Total		6,365	

2 - (6) VTR (Video Tape Recording Machine) Equipment

Description	Quantity	Cost in £	Remarks
VTR	2	43,200	Transistor type
Cooling Machine	1	900	5 HP
Sync. Distribution Amp. etc.	1 set	1,260	
Accessory Equipment	1 set	3,240	
Construction Work		450	
Total		49,050	

2 - (7) Film Sound Recording Equipment (MR)

Description	Quantity	Cost in £	Remarks
16 m/m Film Projector	1	760	
Accessory and Screen	1 set	475	
16 m/m Magnetic Recorder (M.R.)	2	3,800	
Optical Magnetic Projector	1	3,325	
Synchronizing Power Facility	1 set	1,425	
Total		9,785	

2 - (8) Outside Broadcast Van

Description	Quantity	Cost in £	Remarks
Image Orthicon Camera Chain	3 sets	28,500	Tr Type, including Video Control, Mas Moni.
Audio Facility	1 set	760	
Light Facility	1 set	475	
O.B. Van	1	6,460	including cooling unit
Television Trailer Power Unit	1	6,175	15KVA Generator
Field Pick-up Microwave	1 set	5,320	Transmitter, Receiver
Measuring Instrument	1 set	2,090	
Accessory Equipment	1 set	1,710	
Total		51,490	

2 - (9) Power Supply Equipment

Description	Quantity	Cost in £	Remarks
Power Receiving and Distributing Facility	600 KVA	27,000	Transmitting Station 100KVA Studio 500KVA
Power Generator	400 KVA	19,800	Transmitting station 100KVA Studio 300KVA
Total		46,800	

Estimated Cost of Lahore TV Transmitting Station and Studio

1. Transmitting Station

Description	Quantity	Cost in £	Remarks
Tower	1 set	36,000	300 feet, self supporting
Antenna	1 set	5,700	6 stack super turnstile type
Transmitter and Control Equipment	1 set	43,700	5 KW
Measuring Instrument	1 set	4,465	
Accessory Equipment	1 set	570	Tool, Monitor, Receiver, etc.
Construction Work		9,975	
Total		100,410	

2. Studio Equipment

Description	Quantity	Cost in £	Remarks
Master Control Room Facilities		25,745	
Studio A Facilities		57,190	
" B "		24,890	
Telecine Equipment		26,600	
Film Developing Equipment		6,365	
VTR Equipment		49,050	
Film Sound Recording		9,785	
Outside Broadcast Van		51,490	
Power Supply Equipment		46,800	
Measuring Instrument		9,120	
Total		307,035	

In case of exchanging programme by Kenescope recording, £50,000 should be added.

2 - (1) Master Control Facility

Description	Quantity	Cost in £	Remarks
Video and Audio Control Facility	1 set	4,750	
Monitor Console	3	2,850	including Master Monitor 3
Synchronizing Signal Generator	2	3,800	including Sync. Lock, and standby
News Studio, Lighting Facility		95	
" 1.0 Camera Chain	1	7,600	including Tripod
Stabilizing Amplifier	2	665	
Video and Sync. Distribution Amp.	1 set	1,425	
Telecine Control Facility	1 set	950	
Audio Amplifier	1 set	285	
3-Speed Disc Reproducer	1	665	
Intercommunication, Monitor	1 set	570	
Accessory Equipment	1 set	950	
Construction Work		950	
Call Sign Machine	1	190	
Total		25,745	

2 - (2) Studio A Facility (3000 feet^2)

Description	Quantity	Cost in £	Remarks
Image Orthicon Camera Chain	3 sets	18,525	including Camera Pedestal
Video Control Unit	1	8,075	
Video Distribution Amp. and Monitor	1 set	2,375	
Audio Control Unit	1	4,750	
3-Speed Disc Reproducer, Tape Record	each 1	1,330	
Microphone Equipment	1 set	2,185	
Light Control Unit	1 set	9,500	
Light	1 set	1,900	
Light Control Board	1 set	4,750	
Accessory Equipment		1,425	
Construction Work		2,375	
Total		57,190	

2 - (3) Studio B Facility (2000 feet^2)

Description	Quantity	Cost in £	Remarks
Audio Control Unit	1	4,750	
3-Speed Disc Reproducer, Tape Record	each 1	1,330	
Microphone Equipment	1 set	2,185	
Light Control Unit	1 set	7,600	
Light	1 set	1,900	
Light Control Board	1 set	3,800	
Accessory Equipment		1,425	
Construction Work		1,900	
Total		24,890	

The total amount above is calculated supposing video control is drived by O.B. Van. In case video control equipment is set up in sub-control room, £24,000 should be added for 2 sets Image Orthicon Camera Chain and one set Video Control Unit, video distribution amp. and monitor.

2 - (4) Telecine Equipment

Description	Quantity	Cost in £	Remarks
Flying Spot Scanner Equipment	1	4,655	
96 m/m Film Projector	2	4,370	
35 m/m Film Projector	2	7,600	
Optical Multiplexer, Slide Projector	each 2	1,520	
Vidicon Camera Chain	2	6,080	
Film Sound Recorder	1	1,425	
Accessory Equipment	1 set	475	
Construction Work		475	
Total		26,600	

2 - (5) Film Developing Equipment

Description	Quantity	Cost in £	Remarks
Automatic Film Developer	2	3,230	Negative, Positive
None-slip Type Printer	1	665	
Developing Desk	1 set	475	
Measuring Instrument	1 set	380	
Editing Film Projector	1 set	380	
Record Mechine, Film Editor	1 set	665	
Chemical Facility	1 set	285	
Accessory Equipment, Construction Work		285	
Total		6,365	

2 - (6) VTR (Video Tape Recording Machine) Equipment

Description	Quantity	Cost in £	Remarks
VTR	2	43,200	Transistor type
Cooling Machine	1	900	
Sync. Distribution Amp. etc.	1 set	1,260	
Accessory Equipment	1 set	3,240	
Construction Work		450	
Total		49,050	

2 - (7) Film Sound Recording Equipment (MR)

Description	Quantity	Cost in £	Remarks
16 m/m Film Projector	1	760	
Accessory and Screen	1 set	475	
16 m/m Magnetic Recorder (M.R)	2	3,800	
Optical Magnetic Projector	1	3,325	
Synchronizing Power Facility	1 set	1,425	
Total		9,785	

2 - (8) Outside Broadcast Van

Description	Quantity	Cost in £	Remarks
Image Orthicon Camera Chain	3 sets	28,500	Tr Type, including Video Control, Mas. Moni.
Audio Facility	1 set	760	
Light Facility	1 set	475	
O.B. Van	1	6,460	including cooling unit
Television Trailer Power Unit	1	6,175	15KVA Generator
Field Pick-up Microwave	1 set	5,320	Transmitter, Receiver
Measuring Instrument	1 set	2,090	
Accessory Equipment	1 set	1,710	
Total		51,490	

2 - (9) Power Supply Equipment

Description	Quantity	Cost in £	Remarks
Power Receiving and Distributing Facility	600 KVA	27,000	Transmitting station 100KVA Studio 500KVA
Power Generator	400 KVA	19,800	Transmitting station 100KVA Studio 300KVA
Total		46,800	

Estimated Cost of Dacca TV Transmitting Station and Studio

1. Transmitting Station

Description	Quantity	Cost in £	Remarks
Tower	1 set	36,000	300 feet, self supporting
Antenna	1 set	5,700	6 stack super turnstile type
Transmitter and Control Equipment	1 set	43,700	5 KW
Measuring Instrument	1 set	4,465	
Accessory Equipment	1 set	570	Tool, Monitor Receiver, etc.
Construction Work		9,975	
Total		100,410	

2. Studio Equipment

Description	Quantity	Cost in £	Remarks
Master Control Room Facilities		25,745	
Studio A Facilities		57,190	
" B "		24,890	
Telecine Equipment		26,600	
Film Developing Equipment		6,365	
VTR Equipment		49,050	
Film Sound Recording		9,785	
Outside Broadcast Van		51,490	
Power Supply Equipment		46,800	
Measuring Instrument		9,120	
Total		307,035	

In case of exchanging programmes by Kinescope recording, £50,000 should be added.

2 - (1) Master Control Facility

Description	Quantity	Cost in £	Remarks
Video and Audio Control Facility	1 set	4,750	
Monitor Console	3	2,850	including Master Monitor 3
Synchronizing Signal Generator	2	3,800	including Sync. Loc, and standby
News Studio Lighting Facility		95	
" 1.0 Camera Chain	1	7,600	including Tripod
Stabilizing Amplifier	2	665	
Video and Sync. Distribution Amp.	1 set	1,425	
Telecin Control Facility	1 set	950	
Audio Amplifier	1 set	285	
3-Speed Disc Reproducer	1	665	
Intercommunication, Monitor	1 set	570	
Accessory Equipment	1 set	950	
Construction Work		950	
Call Sign Machine	1	190	
Total		25,745	

2 - (2) Studio A Facility (3000 feet^2)

Description	Quantity	Cost in £	Remarks
Image Orthicon Camera Chain	3 sets	18,525	including Camera Pedestal
Video Control Unit	1	8,075	
Video Distribution Amp. and Monitor	1 set	2,375	
Audio Control Unit	1	4,750	
3-Speed Disc Reproducer, Tape Record	each 1	1,330	
Microphone Equipment	1 set	2,185	
Light Control Unit	1 set	9,500	
Light	1 set	1,900	
Light Control Board	1 set	4,750	
Accessory Equipment		1,425	
Construction Work		2,375	
Total		57,190	

2 - (3) Studio B Facility (2000 feet^2)

Description	Quantity	Cost in £	Remarks
Audio Control Unit	1	4,750	
3-Speed Disc Reproducer Tape R Record	each 1	1,330	
Microphone Equipment	1 set	2,185	
Light Control Unit	1 set	7,600	
Light	1 set	1,900	
Light Control Board	1 set	3,800	
Accessory Equipment		1,425	
Construction Work		1,900	
Total		24,890	

The total amount above is calculated supposing video control is drived by O.B. Van. In case video control equipment is set up in sub-control room, £24,000 should be added for 2 sets Image Orthicon Camera Chain and one set Video Control Unit, video distribution amp. and monitor.

2 - (4) Telecine Equipment

Description	Quantity	Cost in £	Remarks
Flying Spot Scanner Equipment	1	4,655	
16 m/m Film Projector	2	4,370	
35 m/m Film Projector	2	7,600	
Optical Multiplexer, Slide Projector	each 2	1,520	
Vidicon Camera Chain	2	6,080	
Film Sound Recorder	1	1,425	
Accessory Equipment	1 set	475	
Construction Work		475	
Total		26,600	

2 - (5) Film Developing Equipment

Description	Quantity	Cost in £	Remarks
Automatic Film Developer	2	3,230	Negative, psotive
None-slip Type Printer	1	665	
Developing Desk	1 set	475	
Measuring Instrument	1 set	380	
Editing Film Projector	1 set	380	
Record Machine, Film Editor	1 set	665	
Chemical Facility	1 set	285	
Accessory Equipment, Construction Work		285	
Total		6,365	

2 - (6) VTR (Video Tape Recording Machine) Equipment

Description	Quantity	Cost in ₤	Remarks
VTR	2	43,200	Transitor type
Cooling Machine	1	900	5 HP
Sync. Distribution Amp. etc.	1 set	1,260	
Accessory Equipment	1 set	3,240	
Construction Work		450	
Total		49,050	

2 - (7) Film Sound Recording Equipment (MR)

Description	Quantity	Cost in £	Remarks
16 m/m Film Projector	1	760	
Accessory and Screen	1 set	475	
16 m/m Magnetic Recorder (M.R.)	2	3,800	
Optical Magnetic Projector	1	3,325	
Synchronizing Power Facility	1 set	1,425	
Total		9,785	

2 - (8) Outside Broadcast Van

Description	Quantity	Cost in £	Remarks
Image Orthicon Camera Chain	3 sets	28,500	Tr type including Video Control, Mas. Moni.
Audio Facility	1 set	760	
Light Facility	1 set	475	
O.B. Van	1	6,460	including Cooling Unit
Television Trailer Power Unit	1	6,175	15KVA Generator
Field Pick-up Microwave	1 set	5,320	Transmitter, Receiver
Measuring Instrument	1 set	2,090	
Accessory Equipment	1 set	1,710	
Total		51,490	

2 - (9) Power Supply Equipment

Description	Quantity	Cost in £	Remarks
Power Receiving and Distributing Facility	600 KVA	22,000	Transmitting station 100KVA Studio 500KVA
Power Generator	400 KVA	19,800	Transmitting station 100KVA Studio 300KVA
Total		46,800	

Estimated Cost of Rawalpinchi TV Transmitting Station and Studio

1. Transmitting Stations

Description	Quantity	Cost in £	Remarks
Tower	1 set	18,000	160 feet, self supporting
Antenna	1 set	5,700	6 stack super turnstile type
Transmitter and Control Equipment	1 set	24,700	1 KW
Measuring Instrument	1 set	4,465	
Construction Work		9,025	
Accessory Equipment		570	Tool, Monitor, Receiver, etc.
Total		62,460	

2. Studio Equipment

Description	Quantity	Cost in £	Remarks
Master Control Room Facility		16,435	
TV Studio Facility		47,215	
Telecine Equipment		11,590	
VTR Equipment		25,200	
Power Supply Equipment		31,500	
Measuring Instrument		4,123	
Total		136,063	

In case of starting operation before set up TV linkage £5,500 should be added for one set of Videcon Camera Chain and one 16 m/m Film Projector.

2 - (1) Master Control Facility

Description	Quantity	Cost in £	Remarks
Video and Audio Control Facility	1 set	4,750	
Monitor Console	2	1,900	including Master Monitor 2
Synchronizing Signal Generator	2	3,800	including Sync. Lock, and standby
Stabilizing Amplifier	2	665	
Video and Sync. Distribution Amp.	1 set	1,425	
Telecine Control Facility	1 set	950	
Audio Amplifier	1 set	285	
Call Sign Machine	1	190	
Intercommunication, Monitor	1 set	570	
Accessory Equipment	1 set	950	
Construction Work		950	
Total		16,435	

2 - (2) TV Studio Facility (1500 feet^2)

Description	Quantity	Cost in £	Remarks
Image Orthicon Camera Chain	2 set	12,350	including Camera Pedestal
Video Control Unit	1	8,075	
Video Distribution and Monitor	1 set	2,375	
Audio Control Unit	1	4,750	
3-Speed Disc Reproducer, Tape Record	each 1	1,330	
Microphone Equipment	1 set	2,185	
Light Control Unit	1 set	7,600	
Light	1 set	1,900	
Light Control Board	1 set	3,800	
Accessory Equipment	1 set	1,425	
Construction Work		1,425	
Total		47,215	

2 - (3) Telecine Equipment

Description	Quantity	Cost in £	Remarks
16 m/m Film Projector	1	2,185	
Optical Multiplexer, Slide Projector	each 1	760	
Flying Spot Scanner Equipment	1	4,655	
Videcon Camera Chain	1 set	3,040	
Accessory Equipment	1 set	475	
Construction Work		475	
Total		11,590	

2 - (4) VTR Equipment

Description	Quantity	Cost in £	Remarks
VTR	1	21,600	Transistor type
Cooling Machine	1	900	5 HP
Accessory Equipment	1 set	2,250	
Construction Work		450	
Total		25,200	

2 - (5) Power Supply Equipment

Description	Quantity	Cost in £	Remarks
Power Receiving and Distributing Facility	150 KVA	12,600	Transmitting station 100KVA Studio 300KVA
Power Generator	125 KVA	9,450	
Total		22,050	

Estimated Cost of Chittagong TV Transmitting Station and Studio

1. Transmitting Station

Description	Quantity	Cost in £	Remarks
Tower	1 set	18,000	160 feet, self supporting
Antenna	1 set	5,700	6 stack super turnstile type
Transmitter and Control Eqpt.	1 set	19,000	300 W
Measuring Instrument	1 set	4,465	
Accessory Equipment	1 set	570	Tool, Monitor, Receiver, etc.
Construction Work		9,025	
Total		56,760	

2. Studio Equipment

Description	Quantity	Cost in £	Remarks
Master Control Room Facility		16,435	
TV Studio Facility		47,215	
Telecine Equipment		11,590	
Power Supply Equipment		18,000	
Measuring Instrument		4,123	
Total		97,363	

In case of starting operation before setting-up of TV linkage, £5,500 should be added for one set of Videcon Camera Chain and 16 m/m Film Projector.

2 - (1) Master Control Facility

Description	Quantity	Cost in £	Remarks
Video and Audio Control Facility	1 set	4,750	
Monitor Console	2	1,900	including Master Monitor 2
Synchronizing Signal Generator	2	3,800	including Sync. Lock and standby
Stabilizing Amplifier	2	665	
Video and Sync. Distribution Amp.	1 set	1,425	
Telecine Control Facility	1 set	950	
Audio Amplifier	1 set	285	
Call Sign Machine	1	190	
Intercommunication, Monitor	1 set	570	
Accessory Equipment	1 set	950	
Construction Work		950	
Total		16,435	

2 - (2) TV Studio Facility (1200 feet^2)

Description	Quantity	Cost in £	Remarks
Image Orthicon Camera Chain	2 sets	12,350	including Camera Pedestal
Video Control Unit	1	8,075	
Video Distribution and Monitor	1 set	2,375	
Audio Control Unit	1	4,750	
Speed Disc Reproducer, Tape Record	each 1	1,330	
Microphone Equipment	1 set	2,185	
Light Control Unit	1 set	7,600	
Light	1 set	1,900	
Light Control Board	1 set	3,800	
Accessory Equipment	1 set	1,425	
Construction Work		1,425	
Total		47,215	

2 - (3) Telecine Equipment

Description	Quantity	Cost in £	Remarks
16 m/m Film Projector	1	2,185	
Optical Multiplexer, Slide Projector	each 1	760	
Flying Spot Scanner Equipment	1	4,655	
Videcon Camera Chain	1 set	3,040	
Accessory Equipment	1 set	475	
Construction Work		475	
Total		11,590	

2 - (4) Power Supply Equipment

Description	Quantity	Cost in £	Remarks
Power Receiving and Distributing Facility	150 KVA	12,600	Transmitting station 100KVA Studio 300KVA
Total		12,600	

Estimated Cost of Peshawar TV Transmitting Station and Studio

1. Transmitting Station

Description	Quantity	Cost in £	Remarks
Tower	1 set	36,000	300 feet, self supporting
Antenna	1 set	5,700	6 stack super turnstile type
Transmitter and Control Eqpt.	1 set	19,000	300 W
Measuring Instrument	1 set	4,465	
Accessory Equipment	1 set	570	Tool Monitor Receiver etc.
Construction Work		9,975	
Total		75,710	

2. Studio Equipment

Description	Quantity	Cost in £	Remarks
Master Control Room Facility		16,435	
TV Studio Facility		40,945	
Telecine Equipment		11,590	
Power Supply Equipment		18,000	
Measuring Instrument		4,123	
Total		91,093	

In case of starting operation before set up TV linkage £5,500 should be added for one set Videcon Camera Chain and 16 m/m Film Projector.

2 - (1) Master Control Facility

Description	Quantity	Cost in £	Remarks
Video and Audio Control Facility	1 set	4,750	
Monitor Console	2	1,900	including Master Monitor 2
Synchronizing Signal Generator	2	3,800	Including Sync. Local and standby
Stabilizing Amplifier	2	665	
Video and Sync. Distribution Amp.	1 set	1,425	
Telecine Control Facility	1 set	950	
Audio Amplifier	1 set	285	
Call Sign Machine	1	190	
Intercommunication, Monitor	1 set	570	
Accessory Equipment	1 set	950	
Construction Work		950	
Total		16,435	

2 - (2) TV Studio Facility (1200 feet^2)

Description	Quantity	Cost in £	Remarks
Videcon Camera Chain	2 set	6,080	including Camera Pedestal
Video Control Unit	1	8,075	
Video Distribution and Monitor	1 set	2,375	
Audio Control Unit	1	4,750	
3-Speed Disc Reproducer, Tape Record	each 1	1,330	
Microphone Equipment	1 set	2,185	
Light Control Unit	1 set	7,600	
Light	1 set	1,900	
Light Control Board	1 set	3,800	
Accessory Equipment	1 set	1,425	
Construction Work		1,425	
Total		40,945	

2 - (3) Telecine Equipment

Description	Quantity	Cost in £	Remarks
16 m/m Film Projector	1	2,185	
Optical Multiplexer, Slide Projector	each 1	760	
Flying Spot Scanner Equipment	1	4,655	
Videcon Camera Chain	1 set	3,040	
Accessory Equipment	1 set	475	
Construction Work		475	
Total		11,590	

2 - (4) Power Supply Equipment

Description	Quantity	Cost in ₺	Remarks
Power Receiving and Distributing Facility	150 KVA	12,600	Transmitting station 100KVA Studio 300KVA
Total		12,600	

Cine-Film Facility

Item	No.	A Unit Price		
Cine Camera (16mm)	3		3,825,000	Including one Single-system recording camera
Light 3 KW	2	50,000	10,000	
2 KW	4	15,000	60,000	
1 KW	4	15,000	60,000	
200 mm Lens	2		550,000	15mm ~ 150mm
Tri-pod	2	50,000	100,000	
Foot-Stool	2	15,000	30,000	
Battery-Light	2	30,000	60,000	
Projector	2	200,000	400,000	for 16mm Film
Moviola	1	300,000	300,000	
Editing Desk	2	15,000	30,000	
Splicer	2	15,000	30,000	
Footage Counter	2	8,000	16,000	
Film Winder	3	14,000	42,000	
Hand Viewer	2	30,000	60,000	
Screen	2	8,500	17,000	
Puncher	2	7,000	14,000	
Basket	3	1,000	3,000	
Splicer	1	38,000	38,000	for 35mm Film
Film Vinder	1	9,000	9,000	"
Footage Counter	1	7,000	7,000	"
Hand Viewer	1	32,000	32,000	"
Puncher	1	7,000	7,000	"
			¥5,790,000	

Studio Accommodations

Item	No.	
Dryer	1	for make-up
Stage-Unit (3' x 6')	20	
(3' x 3')	20	
(1.5' x 3')	20	
Triangular	20	
Guarter-circle	10	
(1.5' x 1')	20	
Picture Stand	3	
Curtain (pale blue)	1	
Curtain (dark brown)	1	
Canvas (12' x 12')	2	
Canvas (18' x 12')	2	
Carpet (12' x 12')	2	
Carpet (18' x 12')	2	
Furniture		Bed, Table, Chair, etc.
Foot, Stool	3	
Cramp	200	
Hammer, etc.	1	
Conductor's stand	1	
Instruments	1	Piano, Celesta, etc.

(to be continued to next sheet)

Tape-recorder	2	
Record Player	1	
Portable-tape-recorder	2	
Miscellaneous	1	Card case, etc.

Note: Price for Studio Accommodation is estimated as follows:

(1) For Large Studio: approx. ₤10,000

(2) For Small Studio: approx. ₤5,000

Notes: 1. This estimate is budgetary purpose only.

2. Prices are based on CIF.

3. As to antenna masts, 150 feet natural height is assumed at Karachi, Rawalpindi, and Chittagong.

4. As to antenna masts, the estimate was made on self supported type. In case guide masts are used, costs will be approximately one half of these figures.

5. Buildings are not included. Studio floor spaces indicated are effective floor spaces, add 30% for building areas.

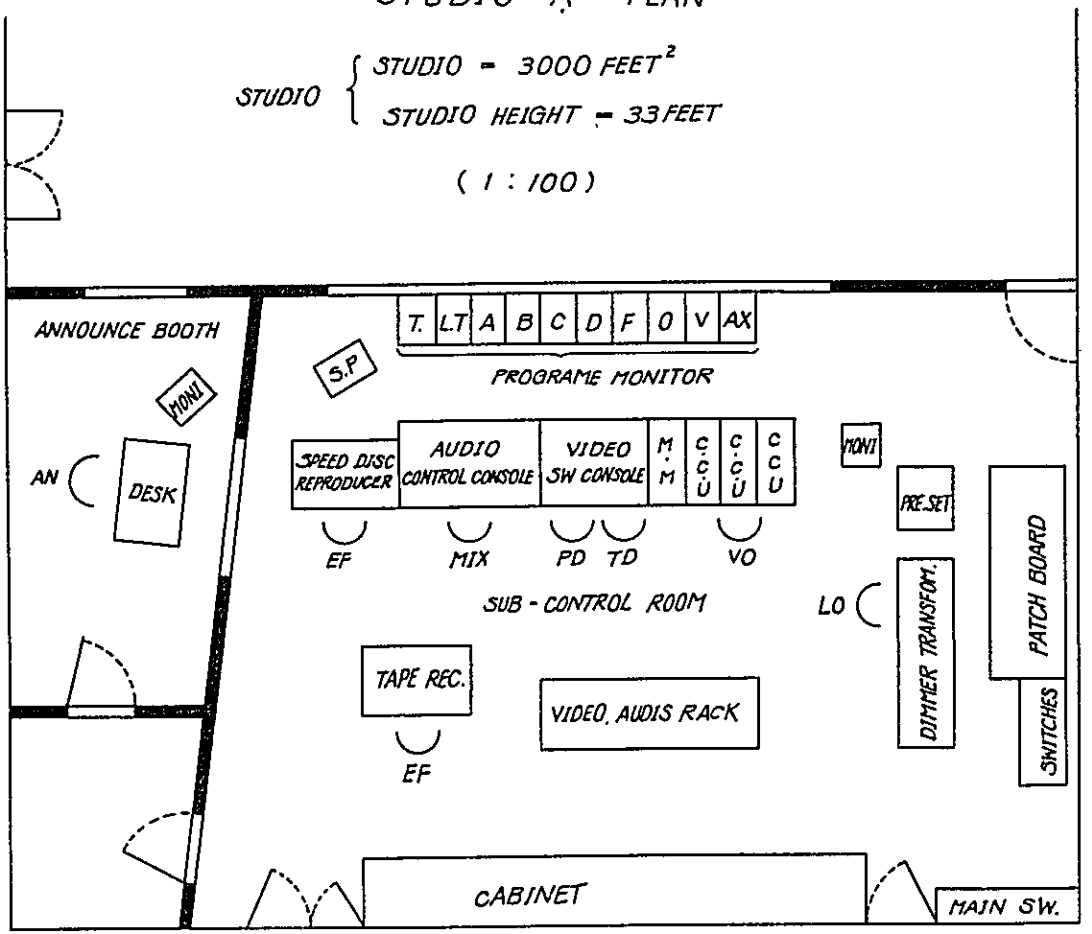
(3) Detailed Description of Facilities

The lists and diagrams that follow are the station facilities and equipments together with the costs involved as well as station layout and block diagrams. Specifications of the station facilities will be attached also.

STUDIO A PLAN

STUDIO { STUDIO = 3000 FEET²
STUDIO HEIGHT = 33 FEET

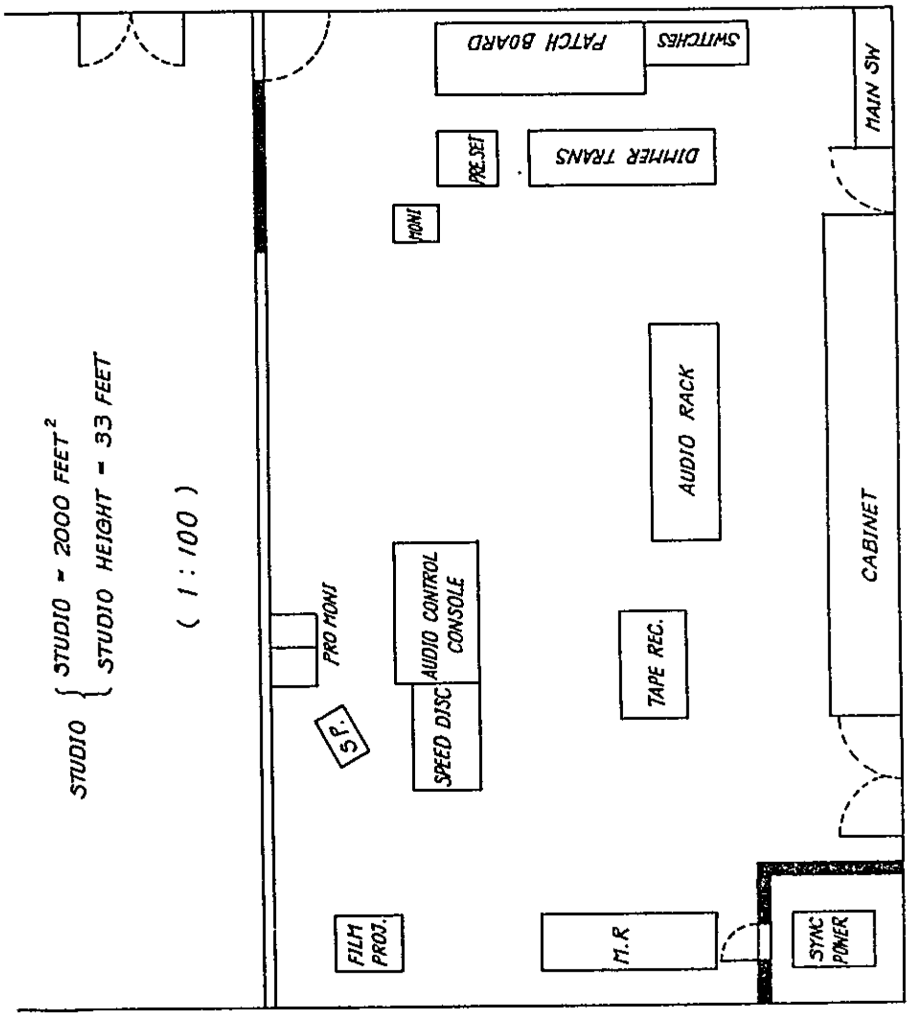
(1 : 100)

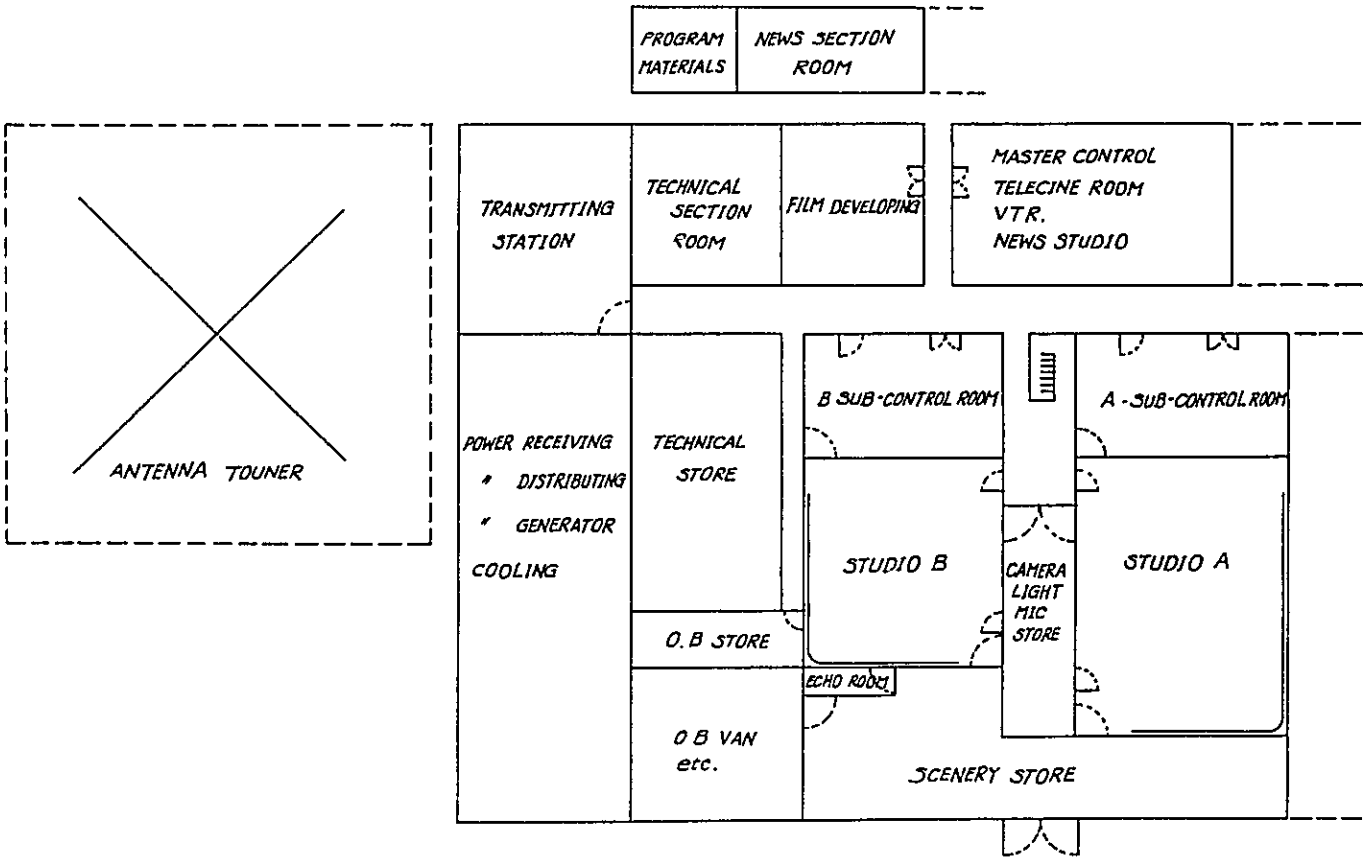


STUDIO B PLAN

STUDIO { STUDIO = 2000 FEET^2
STUDIO HEIGHT = 33 FEET }

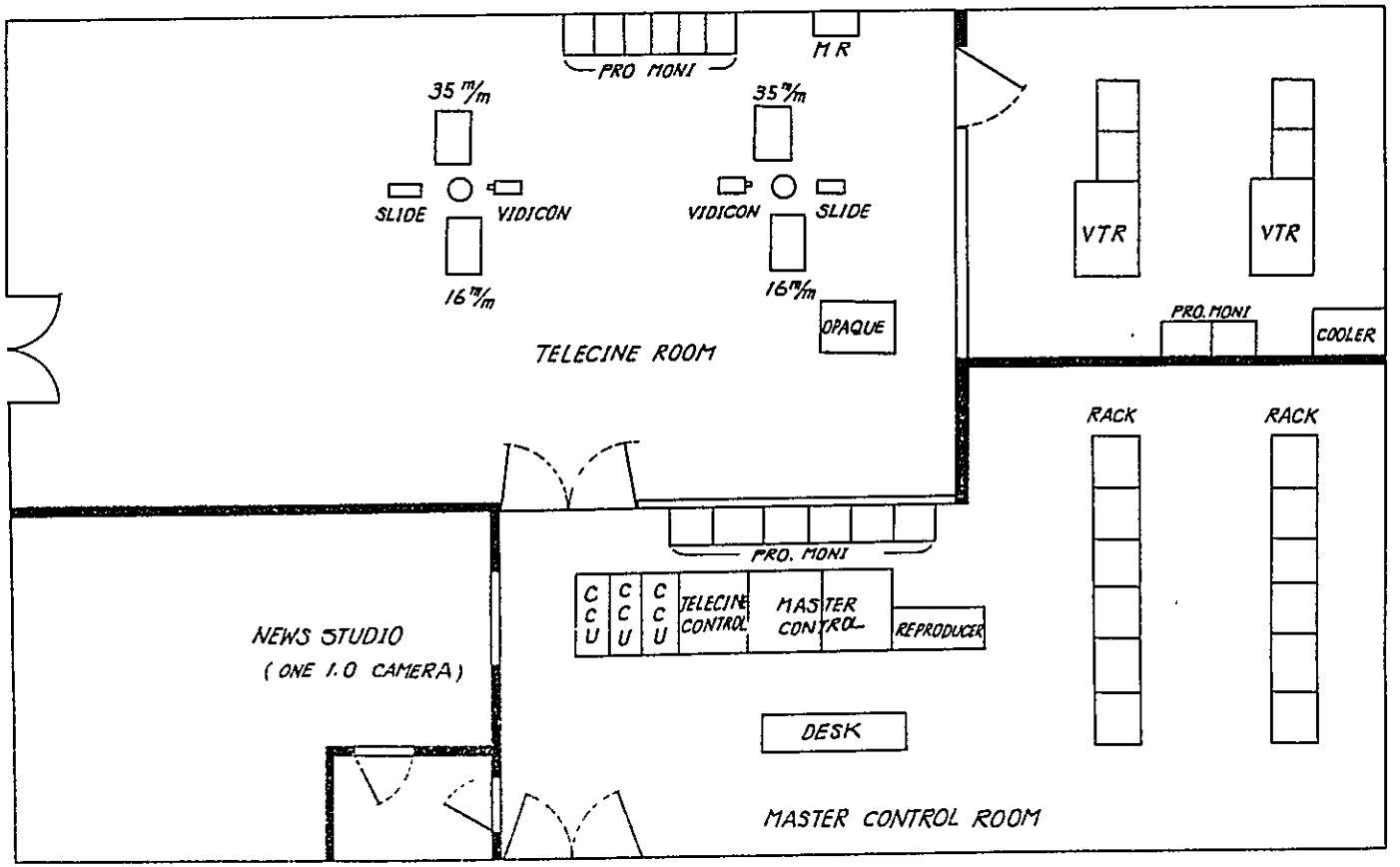
(1 : 100)

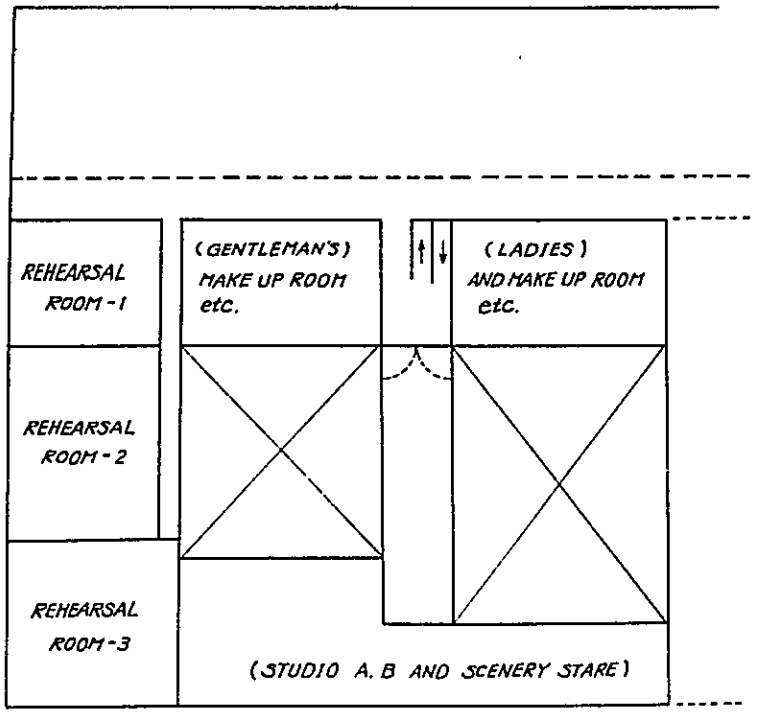




GROUND FLOOR PLAN (1 : 500)

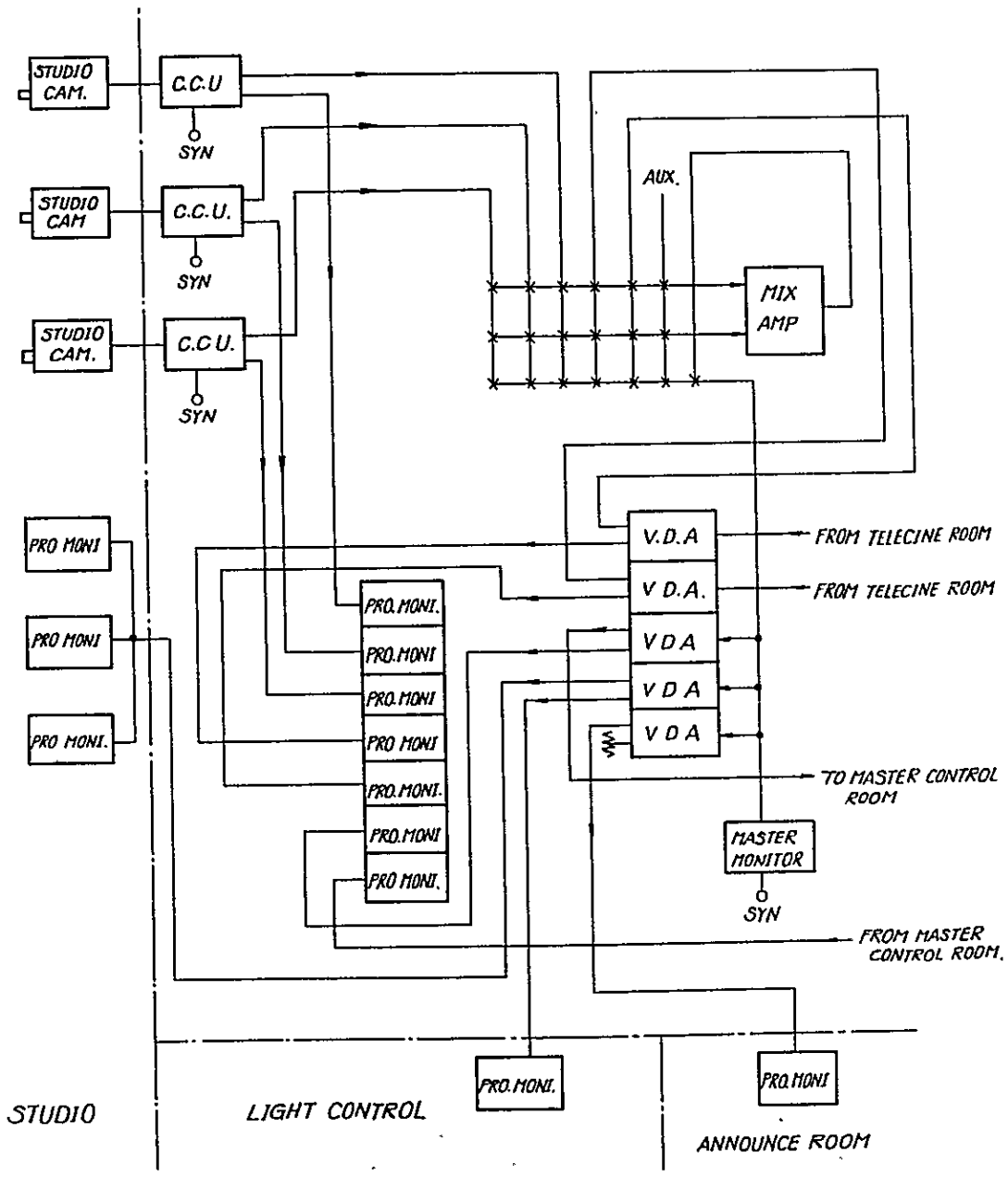
MASTER CONTROL ROOM. PLAN
TELECINE ROOM
VTR ROOM (1 : 100)



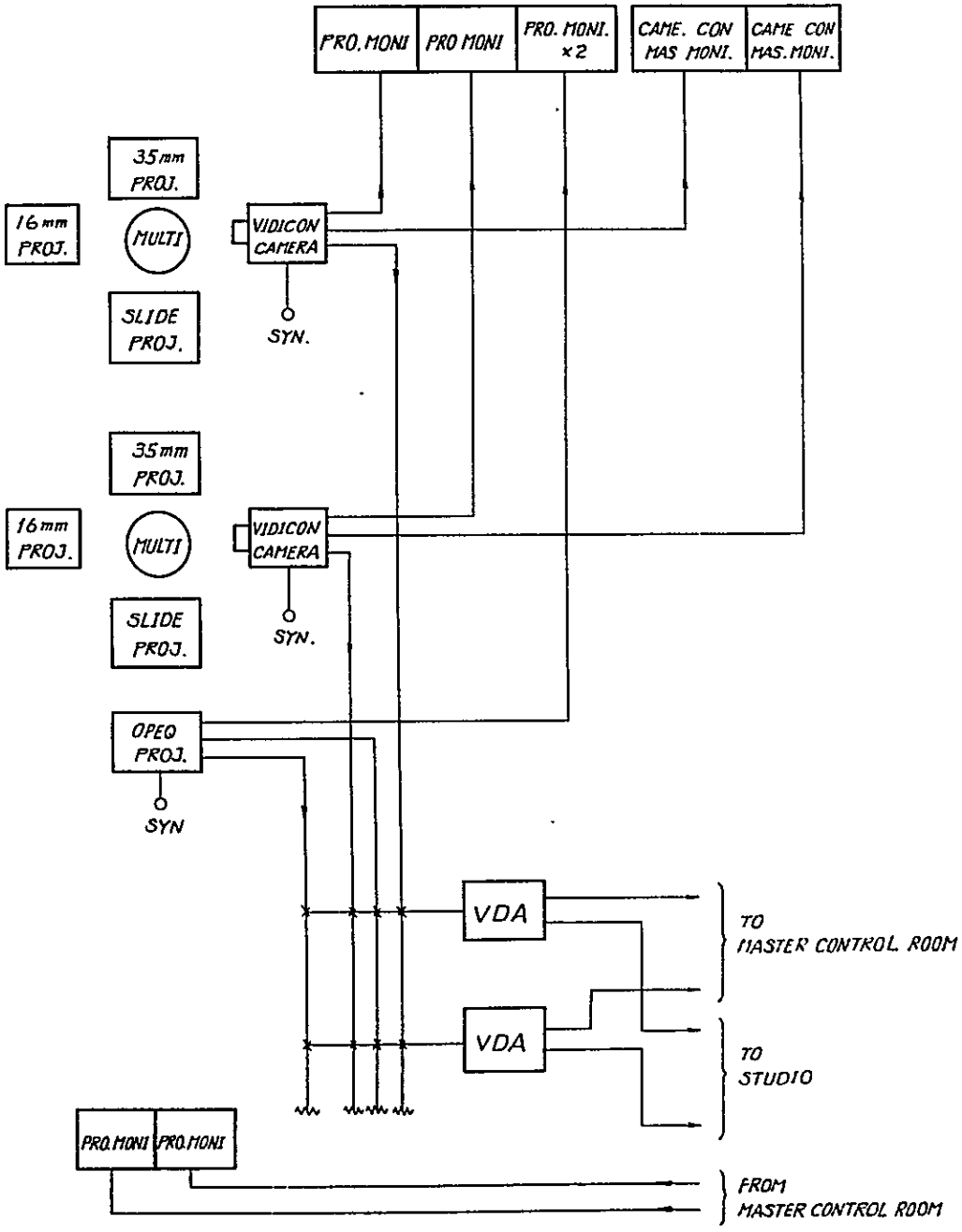


1 ST FLOOR PLAN (1:500)

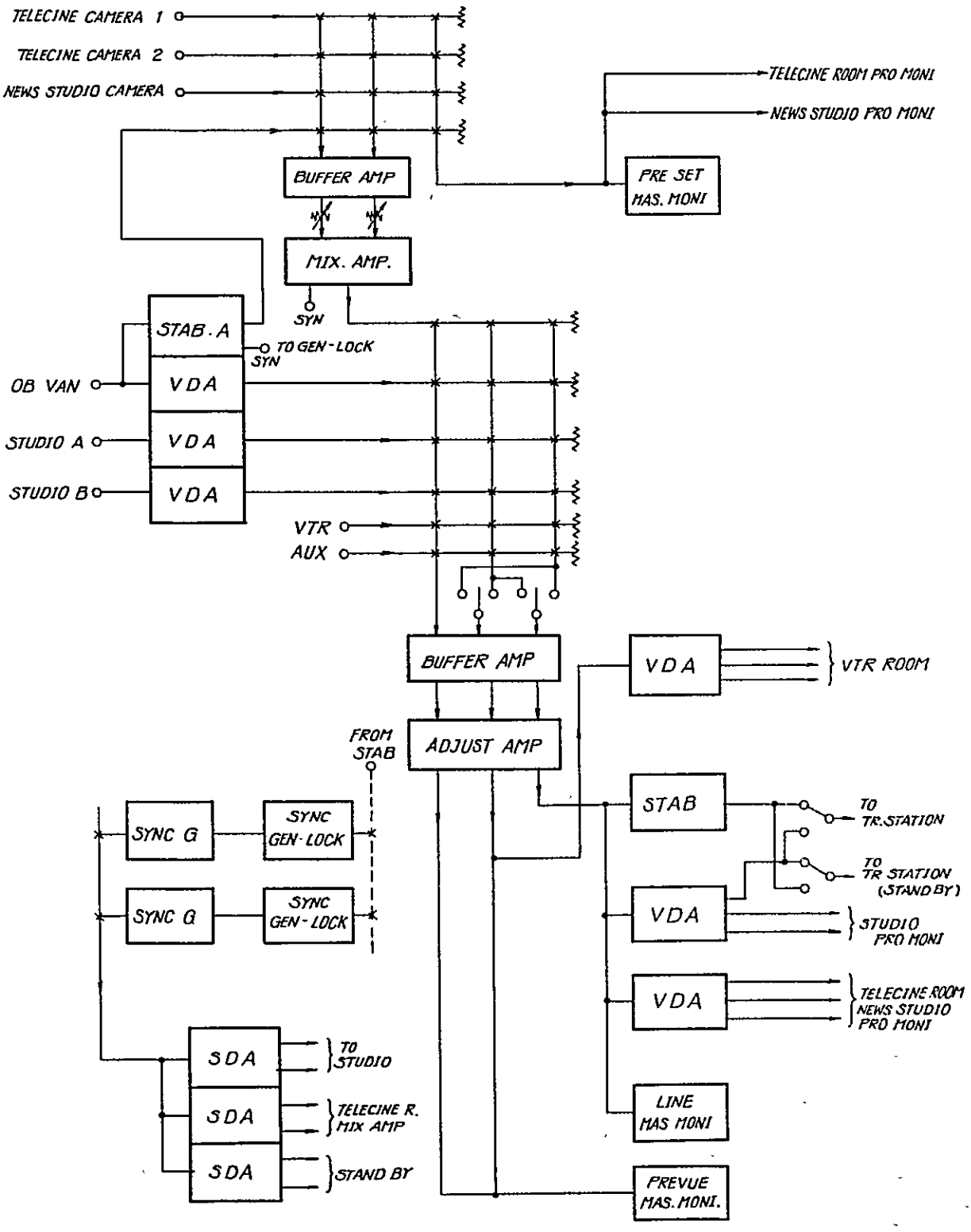
BLOCK DIAGRAM OF TV STUDIO VIDEO SYSTEM



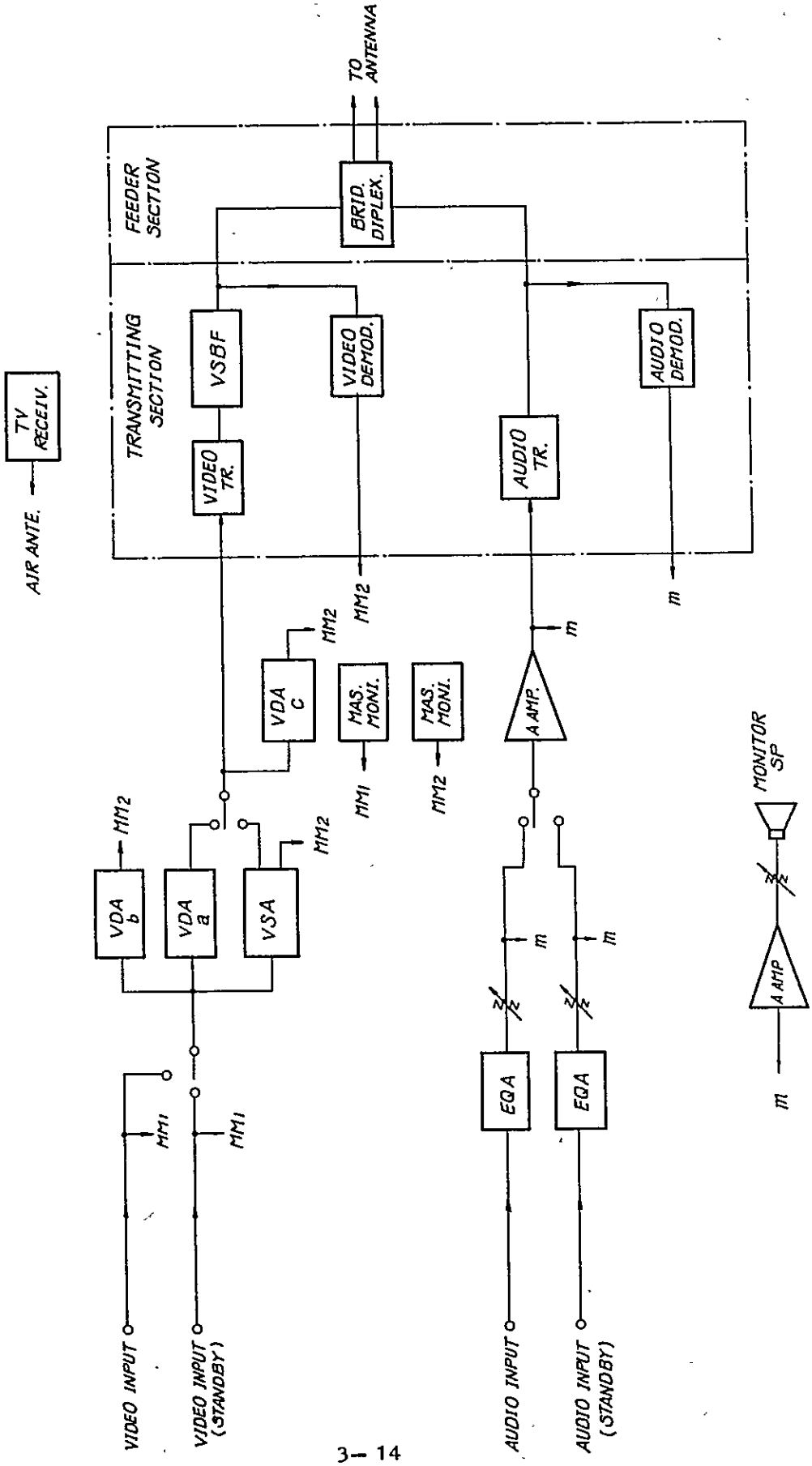
BLOCK DIAGRAM OF TELECINE ROOM

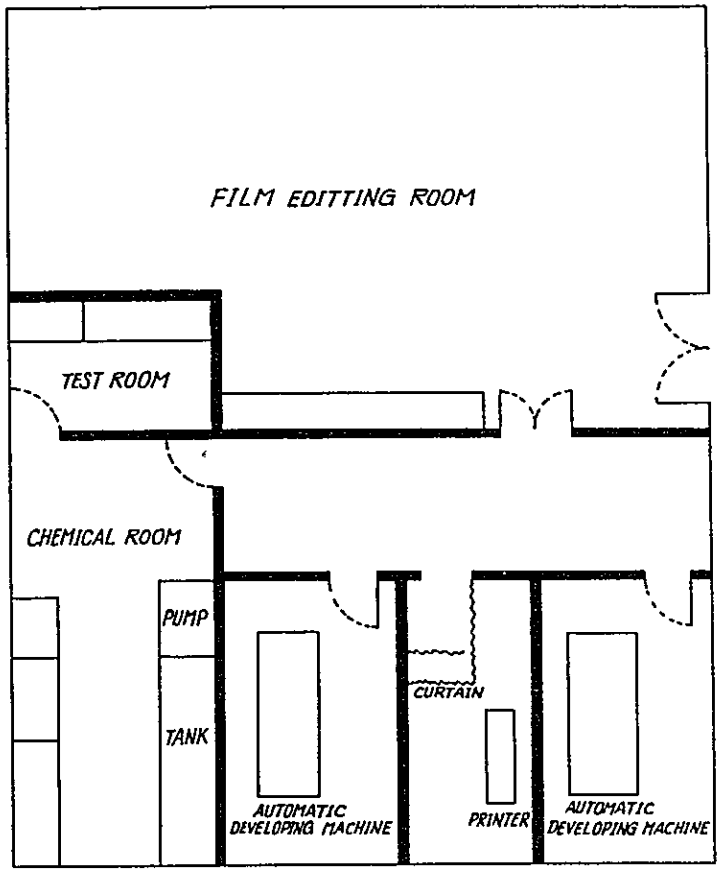


BLOCK DIAGRAM OF TV MASTER CONTROL ROOM



BLOCK DIAGRAM OF TV TRANSMITTING STATION





FILM DEVELOPING ROOM PLAN

(1 : 100)

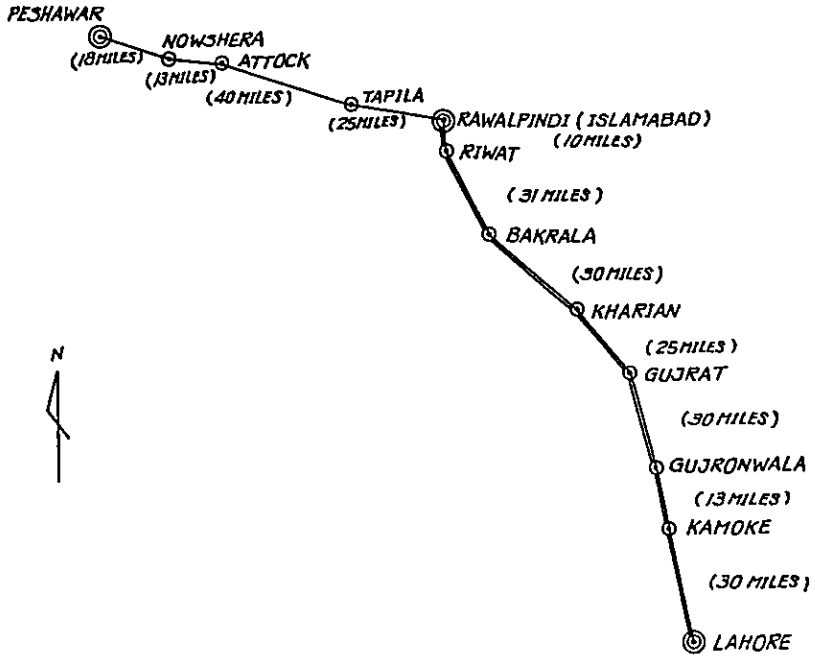
§3. Inter-city linkage

1. In principle, TV inter-city relay should be rendered by microwave. This principle is well-known and widely accepted. Therefore, if cost is not a concern, microwave must be used. However, in case cost is a prime concern with a concession on picture quality translations should be used for short distance relays. Therefore, it is not possible to turn out a single conclusion with the certainty which scheme should be chosen in the projects. However, considering the present state of the projects where cost problem is a concern, translators may be introduced to a certain extent. The suggestion that follows is made on this basis. Therefore it is requested that this suggestion be reviewed in the course of project.

For the proposed linkage of Chittagong with Dacca and Peshawar with Rawalpindi, VHF (Band I or III) translators are proposed. This scheme is less costly and yet provides the surrounding areas with ordinal television services, though picture quality available is poorer than micro-wave. Between Lahore and Rawalpindi, micro-wave is recommended. The micro-wave links will provide two-way circuit, one is northward from Lahore to Islamabad, the other is southward ordinarily but reversible to northward which works as a stand-by. The circuit may carry video, sound if necessary. The use of other circuit is prefarable if available, and supervisory signals. 4GC is recommendable.

The following diagrams show routes maps of the intercity links. In the previous surveys, between Rawalpindi and Peshawar Cherat was found favourable for the relay site, but due to some technical difficulties this site has been discarded.

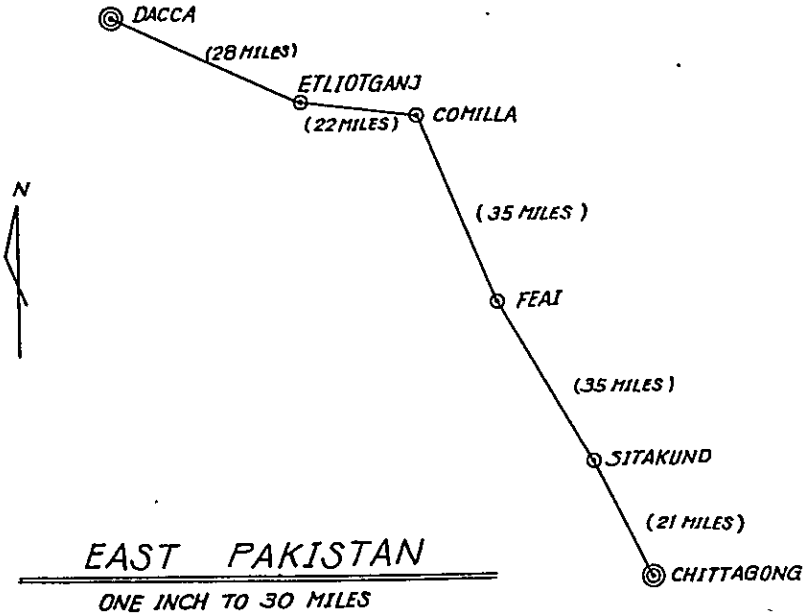
TV LINKAGE OF WEST PAKISTAN



WEST PAKISTAN

ONE INCH TO 50 MILES

TV LINKAGE OF EAST PAKISTAN



EAST PAKISTAN

ONE INCH TO 30 MILES

In setting up the translator links, it is essential to make receiving tests in the presence of TV signals, because some times, receptions observe ghost immages due to multiple transmission paths. For a translator, the transmitting channel shall not be the same as or adjacent to the receiving channel, because isolation of the transmitting antenna from receiving antenna is usually very difficult.

2. Descriptions of the microwave links between Lahore and Rawalpindi are given as follows:

(1) Frequency : 4000 Mc range.

(2) System : Two ways, one is northward, the other is reversible.

(3) Stations :
   a. Terminal St. at Lahore & Rawalpindi
   b. Repeater St. at Kamoke, Bakrala, and Riwat
   c. Drop Repeater St. at Gujaranwala, Gujrat, and Kharian.

   Note: Drop Repeater Stations are so designed that TV signals are dropped for further outlets at the above three sites.

(4) Detailed description of equipments and costs

Costs:

	No. of Units	Unit (£) cost	Total (£) cost
Terminal Station	2	32,800	65,600
Repeater Station	3	50,500	151,500
Drop Repeater Station	3	42,600	127,800
Test Equipment & Spare panels	1 set	52,600	52,600
		Grand total	397,500

Notes. 1. Repeater Stations are provided with an Independent Engine generators

2. Terminal Station, Drop Repeater Stations receive Electric power from outside

Detailed description of 4GC equipments

		Terminal Station	Repeater Station	Drop Repeater Station
1.	TR-4G1200 Transmitter	2	2	2
2.	MD-V Mod & Remod.	2	0	0
3.	D - V Demod.	0	0	2
4.	SC - I-V Switch	1	0	1
5.	Branching Filter	1	1	1
6.	3.3m Para Aut	1	2	2
7.	W/G Feeder	70 m	140	140
8.	Dehydrator	1	1	1
9.	Flexible W/G	4	8	8
10.	W/G Sw.	0	2	2
11.	Sound combiner	1	0	0
12.	" seperator	1	0	1
13.	Power Equipment	1	-	-
	Terminal Repeater	-	1	-
	& Drop	-	-	1
14.	TR-400S 24 400Mc Tranceiver	1	2	2
15.	" Cable	2	4	4
16.	Supervisory A	1	0	0
	" B	0	1	1
17.	Test equipment & Spare panels			

Remarks:

1. The above quotation does not include the followings:
   1) Cost of site survey and propagation test.
   2) Cost of installation, and supervision of installation of radio equipment, power plant and antenna tower.
   3) Cost of carrier equipment.
   4) Cost of construction such as radio house, access road, tower foundation, power room, etc.
   5) Cost of usual-installation materials including cement, sand, gravel, etc.
2. The above quotation includes the followings:
   1) Cost of 4GC radio equipment, antenna, 60m tower, feeder system and power plant.
   2) Cost of 400 MC radio equipment used for engineering purpose.
   3) Cost of supervisory equipment.
3. A.C. power is assumed to be available at the terminal and the drop-repeater station.
   The through-repeater station is provided with a single engine generator, 120 hours battery and battery charger.

3. Translator linkage between Rawalpindi and Peshawar and between Dacca and Chittagong are illustrated in the route maps. Equipments of each translator station are indicated in the table below. Cost for one translator station is also given below. An experience on translator scheme is Japan is also attached for reference.

A. 300W TV. Modulated Repeater Station

Item	Q'ty	Subject
1.	1	Transmitting Antenna (Yagi Ant. x 2)
2.	1	Main Feeder Coaxial Cable (100m) (SF-50-20) Styloflex Coaxial Cable
3.	1	THX Band Rejection Filter (output)
4.	1	300W Modulation Repeater
5.	1	Receiving Feeder Coaxial Cable (100m) 7/8 Styloflex Coaxial Cable
6.	1	Receiving Antenna
7.	1	Coaxial Dummy
8.	1	Monitoring Equipments
8-1	1	Monitoring Receiver with Antenna & Feeder
8-2	1	(QVA 102A) Frequency Meter
9.		Measuring Equipments
9-1	1	(TG-515C) Sweep Generator
9-2	1	(SS-5052) Oscilloscope
10.	1	Power Switch Box and Automatic Voltage Regulator
11.	1	Installation Materials
12.	1	Spare Parts for above
13.	1	Guide Tower (80m)
14.	1	6KVA Engine Generator with Accessories

Cost for one station comprising the above equipment
CIF Main Port in Pakistan in Stg £

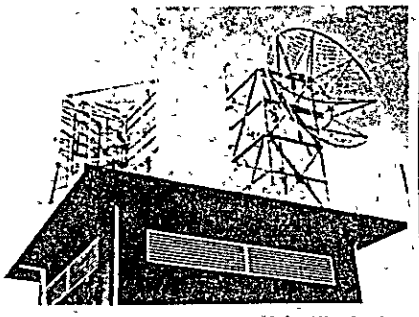
£24,000-0-0

Remarks:

1. The above quotation does not include the followings:
   1) Cost of site survey and propagation test.
   2) Cost of installation, or supervision of installation of Transmitting and Receiving equipment, power plant and antenna tower.
   3) Cost of construction of auxiliary facilities such as Transmitting house, access road, tower foundation, power room, etc.
   4) Cost of usual installation materials including cement, sand, gravel, etc.
   5) A.C. Power is assumed to be available at the station.

TV Rebroadcast Chain System

For All Bands From I To V



TV rebroadcasting VHF and UHF antennas of the Hita Station.

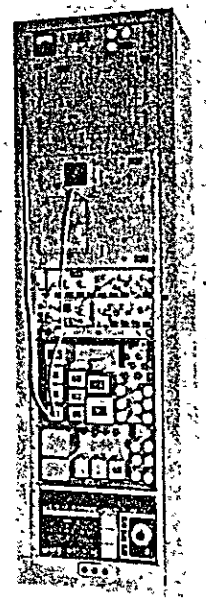
Because of the nature of its wave propagation, a television broadcasting station is located in a large city to provide TV service for that city and its suburbs. In order that the same station can provide TV service for distant cities and towns, a microwave relay system is employed to relay programs to TV broadcasting stations in these cities and towns. In this system, however, communities along microwave links are not covered in the TV service area. Even when TV service is provided for groups of such communities, the costs are high because repeater terminal equipment and abroadcast transmitter are necessary in each case.

To overcome these problems, NEC has developed and marketed the television rebroadcast chain system, which can provide both relaying and broadcasting of TV programs simultaneously without employing the microwave link.

TV Repeater Stations

This system, with its ability not only to relay a TV program from a main station to rebroadcasting stations in remote areas, but also to rebroadcast the same TV program over the entire area extending along the relay links, enables all rebroadcasting stations also to function as TV repeater stations, and ordinary TV receivers in areas along the relay links to receive the program.

The repeater equipment employed in this system can convert TV signals from the main or rebroadcasting station to another channel and amplify the converted signals. It is very simple in construction as compared with other TV repeater equipment. It is also economical since it serves both for rebroadcasting and repeating the signal. In addition, it is designed to convert signals from any channel in the VHF or UHF bands to other channels in the VHF or UHF bands.



TB-159 VHF repeater.

The repeater equipment, designed to serve on an unattended basis, can be arranged for such operations as automatic starting, automatic stopping and automatic switching to a standby unit in case of normal unit failure. Hence, it is particularly suitable for unattended stations in difficult locations, such as on the summits of mountains.

With such outstanding features, the NEC television rebroadcast chain system is considered the most practical and economical TV program relay system in current use from the viewpoint of extending a TV service area.

An Added Feature

Another feature of this system is that it permits dropping and insertion of TV programs. That is, adding a demodulator unit to the repeater equipment permits dropping of any demodulated video and audio signals desired at the repeater station. Furthermore, provision of an additional modulator unit to the repeater equipment and supply of local video and audio signals to the modulator unit permit easy insertion of a local program at the repeater station.

In such manner, the television rebroadcast chain system makes it possible to cover areas where no television signals reach TV receivers in the service area of a main television station, both easily and, economically. In addition, this system permits realization of a high-quality TV broadcast network over a long distance by installing a number of repeater stations by making the best use of local geographical features.

For equipment to be used in the system, NEC manufactures a complete range, including various through repeaters from a 10 mW low-power unit for UHF and VHF band use up to a 300 W unit, and various modulation repeater units, as well as antennas.

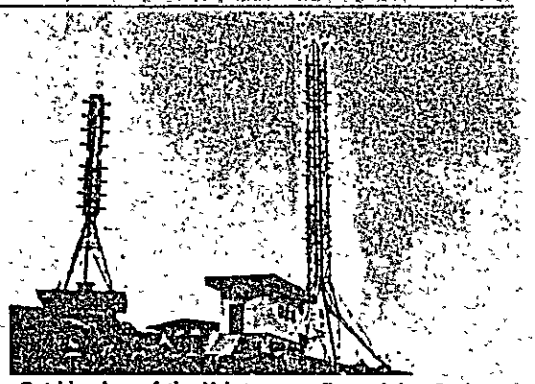
A Typical Rebroadcast Chain System

A typical installation is that supplied by NEC for the Hita Television rebroadcasting chain system, which is described below.

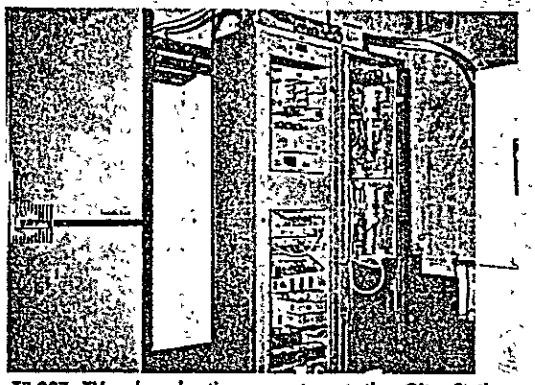
The Hita TV rebroadcast chain system, as shown in Fig. 1, extends over a distance of approximately 90 km, divided into 3 repeater station sections from the main station in Beppu City, Oita Prefecture, Kyushu, to the Hita TV Repeater Station in the same prefecture, and provides TV service for the areas along the links formed by these main and repeater stations

The television signal in the VHF band from the main station is converted at the Oita Station, the first repeater station, into a channel in the UHF band, which is relayed along the Oita River to the Kuehira Station, the second repeater station. The Kuehira Station, located on the summit of a mountain 1,288 m above sea level, receives the TV signal in the UHF band from the Oita Station and converts it into another TV channel in the UHF band, which is broadcast to the village communities along the Kusu River to the Hita Station The third repeater station then provides TV service to these communities as well as relaying the TV signal. The Hita Station, the third repeater station, receives the TV signal in the UHF band from the Kuehira Station and converts it into a TV channel in the VHF band, which is broadcast to Hita and the village communities on its periphery.

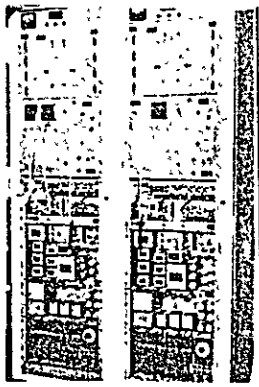
In this way the Hita television rebroadcast chain system includes all village communities located along its links from the main station to Hita the final repeater station, in its service area, to form an extremely economical TV broadcasting network



Outside view of the Nakatsugawa Transmitting Station.



TB-207 TV rebroadcasting repeater at the Oita Station (VHF to UHF).



Two TB-159 TV rebroadcasting transmitters at the Nakatsugawa Station. One is for stand-by use.

List of TV Rebroadcast Chain Systems

		VHF→VHF	VHF→UHF	UHF→VHF	UHF→UHF
Rated Output	10mW	*TB-178			
	200mW	*TB-179			
	300mW	*TB-214			
	3W	*TB-160		TB-160U	
	5W		TB-206		TB-206U
	10W		TB-167		TB-167U
	30W	TB-194	TB-207	TB-194U	TB-207U
	100W	TB-159	TB-171	TB-159U	TB 171U
	300W	TB-169	TB-240	TB-169U	TB 240U
Input & Output Frequency		Any designated channels among TV channels			
Input & Output Impedance		50 ohms	50 ohms	50 ohms	50 ohms
Nominal input signal level		−50dbm S/N−44db	−50dbm S/N−44db	−45dbm S/N−44db	−45dbm S/N−44db
Ambient temperature		−10°C to +50°C	do	do	do

*. All-transistorized.

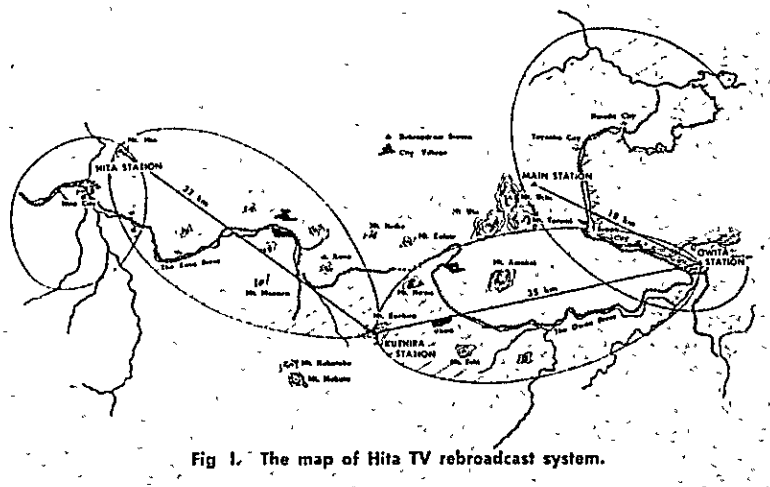


Fig 1. The map of Hita TV rebroadcast system.

Section 2. Programmes

§1. Polices of Composing Programmes

The programme planning has been conducted in accordance with the following polices:

1.1 Items of programmes

The programming shall be so conducted that the programmes scheduled should cover all categories of broadcasting items such as news, bulletin, information, religion, education, culture, children, women, entertainment, sports and commercial ad. with harmony of their selection maintained appropriately between them.

All items of programmes shall be composed under the following policies:

(1) Religious programme

The daily programme shall be started with a religions programme consisting of the lection and interpretation of Holy Koran.
On Friday, a specific religions programme shall be scheduled in the normal broadcasting time. (This, however, may be handled as a special programme which will be broadcasted at a time other than the normal broadcasting time.)

(2) News, bulletin and information programmes

The news programme, including the local news, shall be telecasted every day. It should offer the people the latest information of various fields such as the politics, economics, society, culture, etc. by make the most of the rapid reporting nature of the television.

As to its reporting items, the news should include those items which are concerned greatly with the people throughout the country as well as the local items which have great concern with local inhabitant.

The news programme shall also include not only the overseas news which inform your people with abundant overseas situations in order to widen your people's mental vision as well as to contribute understanding between your people and other nations but also the news about the sports such as the socker, hockey and cricket, in which your people are interested greatly.

The news commentary shall be telecasted every day. It should provide easy explanation for TV audience about the point of the day's main occurrence at issue as well as the background or effect of the occurrence to deepen audience's understanding.

The bulletin and information programmes shall include the notices given by the Central, Provincial and Local Governments and the information concerning the social meetings sponsored by the public organizations.

(3) Education and culture programmes

The education and culture programmes shall be composed in such manner that the programmes scheduled include the following ones in order to contribute to the progress and promotion of the economics, industries, culture and science in your country as well as the improvement of the educational and cultural levels of your people.

(a) Introduction and commentary programmes arranged to handle various affairs of the social, economical, industrial, cultural and scientic fields in your or foreign countries as their themes.

(b) Programmes concerning management of the factories and shops.

(c) Programmes which are useful to increase the concern of TV audience to the science and to promote the scientific techniques in your country.

(d) Technical guidance programmes intended to provide means for TV audience to aquire the operation, maintenance and repair techniques of the machines and tools.

(e) The culture-of-sentiments programmes intended to provide means for younger TV audience to build up their characters.

(f) Programmes intended to help the diffusion of sanitary knowledge.

In composing and producing the above-mentioned programmes, due consideration should be taken so as to make the selected themes adequate for the general public in your country, not to speak of a specific educated class.

Such types of programmes are the ones which promise most fruitful effect, because they permit their audience to learn and aquire the televised matters naturally while amusing themselves with the pictures televised, which are helpful to lead the audience to such understandings of the matters that are almost similar to those obtained by them through their own experiences.

(4) Political programmes

The political programmes shall be composed to diffuse the fundamental democratic ideas among your people. To accomplish this, they should include the news about the politics, the television symposiums on politics which report or comment the tendencies of both the domestic and foreign politics and the outside broadcasting at your National Assembly in order to increase the concern of your people and deepen their understanding to politics.

The programmes shall also include the programme scheduled for a speech of administration policies to be made by the President of your country at the beginning of every month.

(5) Programmes for children

The programmes for children shall be composed in such manner that they are helpful to deepen the sentiments of children and enrich their life. To accomplish this, they should include the following ones:

Instructive programmes for the art of living among children and for manufacturing models or dolls. Programmes consisting of a visit to zoo, films of world's circuses and cartoon films.

The programme consisting of the games or quiz in which the children participate, shall also be scheduled for every sunday.

(6) Programmes for women

The programmes for women shall be composed in such manner that they can provide specifically the practical knowledge on domestic affairs for the women. To accomplish this, they should include those instructive programmes which concern with aquisition of practical knowledge and technique on house-work, care of children, dress and handcraft.

(7) Entertainment programmes

The television is the source of entertainment felt by the general public to be most close to them. For this reason, the entertainment programmes shall be so composed that they can offer the healthy and cheerful entertainment for every home, including those consisting of the classic music, the cultural classics such as classic and falk custom dances, the art of public entertainment such as light music and dramas and the quizzes and games in which the TV audience participate.

The programmes composed to allow the audience to participate in them are most useful to promote the concern of your people to the

television as well as to deepen their feeling of familiarity to the TV stations.

Besides, the entertainment programmes shall include those which consist of the feature films from both the home and overseas sources and the foreign TV films to introduce the fine pieces of home and overseas feature and TV films.

(8) Sports programmes

The sports programmes shall be so scheduled that they permit the station to air the games of sports such as socker, hockey and cricket, which win the enthusiastic popularity among your people, on the outside broadcasting basis for every Sunday.

The sports televised contribute to both the promotion of the armature sports and the elevation of the physical standards of your people.

(9) Advertising program

The advertising program shall be telecasted at the rate of ten minutes per one hour.

(10) Special programmes

The special programmes shall be so composed that they can be televised on every public holiday.

The programmes shall also include those which consist of an important national function or event to be telecasted.

(11) Interchange of programmes

The programmes which offer less trouble to the audience in both the Eastern and Western Wings of Pakistan about the languages used in them, shall be interchanged between the stations, for telecasting in order to promote the colloquial interchange between the inhabitants

in various areas of the both wings as well as to give versatile nature for the programmes themselves.

1.2 On-air hours:

The programmes shall be telecasted by each station for 30 hours per week in accordance with the following on-air hours:

Week days : From 6.00 p.m. to 10.00 p.m.

Sunday : From 4.00 p.m. to 10.00 p.m.

The following is an example for the programme schedule on the 30 hours-per-week on-air basis.

Programme schedule (30 hours-per-week on-air basis)

Week-days

5.50 p.m.	Test Pattern		SL
	Signature Film		F
6.00 p.m.	Lection of Holy Koran		L
6.05	News		FO
6.15	Information Bulltin, Weather Forecast	CM:2 min.	O
	Programme Rundown	CM:3 min.	O
6.25	Programme for children		FV
6.35 p.m.	CM: 2 min. Programme for Women	CM:3 min.	F/L
7.00 p.m.	News	CM:2 min.	F
	Weather Forecast	CM:3 min.	O
7.15	Instructive		F
7.30	Interview		F
7.35	CM: 2 min., Travelogue	CM:3 min.	F
8.00 p.m.	Local News		F/L
8.05	CM: 2 min., Entertainments (Dance, Music in week-days other than Saturday and Quiz in Saturday.	CM:3 min.	L/V

8.30	Entertainment (TV or feature film)	CM: 2 min. CM: 3 min.	F
9.00 p.m.	News		FO
9.10	CM: 3 min., Overseas News, Sports News		F
9.25	News Commentary		L
9.35	Informative, Educational (Sociological, economical, cultural, etc.)		F/L
9.50	Information, Weather Forecast		O
	Tomorrow's Programmes		O
10.00 p.m.	National Anthem and Close Down		F

Note: SL = Slide, O = Opaque, F = Film,
L = Live, V = VTR (including those produced by both local and other stations),
OB = Outside Broadcast.
CMs shall be telecasted using mainly films and slides.
Symbols such as F/V or L/V indicate the method to be adopted for compromising between the adjustment of studio and telecine equipments and the circumstances of performers, etc.

Sunday

3.50 p.m.	Test Pattern		SL
	Signature Film		F
4.00 p.m.	OB of Sports Games, or Cine-Film	CM: 2 min. x 4 CM: 3 min. x 4	OB/F
6.00 p.m.	Lection of Holy Koran		L
6.05	News		FO
6.15	Information Bulletin, Weather Forecast	CM:2 min.	O
	Programme Rundown	CM:3 min.	O
6.25	Programme for Children (Quiz)		L

6.40	CM: 2 min. Programme for Women	CM: 3 min.	F
7.00 p.m.	News	CM: 2 min.	F
	Weather Forecast	CM: 2 min.	O
7.15	Political (Talk, forum)		V
7.35	CM: 2 min. Travelogue	CM: 3 min.	F
8.00	Local News		F/L
8.05	CM: 2 min. Entertainment (Dance, music, etc.)	CM: 3 min.	V
8.30	Entertainment (Drama, variety, etc.)	CM: 2 min. CM: 3 min.	L/V
9.00 p.m.	News		FO
9.10	CM: 3 min. Weekly News Review	CM: 2 min.	F
9.25	News Commentary		L
9.35	Educational, Informative (Sociological, economical, cultural, etc.)		F
9.50	Information, Weather Forecast Tomorrow's Programmes	CM: 2 min. CM: 3 min.	O
10.00 p.m.	National Anthem and Close Down		F

The percentages of the programmes classified in accordance with their category and mode are as listed in the tables below provided that the programmes are telecasted under the programme schedule given in the above-mentioned table.

Percentages of programmes classified in accordance with their category	
1. Religious	2%
2. News and Information	25%
3. Educational and Cultural	21%
4. Children and Women	12%
5. Entertainment	20%

6.	Sports	3%
7.	CM	17%
	Total	100%

Percentages of programmes classified in accordance with their mode

1.	Studio	27%
	Live	22%
	VTR	5%
2.	Film	44%
	Home	15%
	Foreign	28%
3.	Outside Broadcast	3%
4.	Programmes from other stations (VTR and film)	9%
5.	CM (Film)	17%
	Total	100%

Detail of Table of Percentages of programmes classified in accordance with their mode

Mode and category	Total minutes per week	Duration per unit	Number of programmes per week
1. Studio programmes			
Live	390		
Religious	35	(5' x 7)	
Children	15	(15' x 1)	
Women	75	(20' x 3 15' x 1)	
Instructive	60	(15' x 4)	
News Commentary	70	(10' x 7)	

Mode and category	Total minutes per week	Duration per unit	Number of programmes per week
Information Balletin Weather Forecast Programme Rundown	70		
Dance, Music	20	(20' x 1)	
Drama	25	(25' x 1)	
Quiz	20	(20' x 1)	
VTR *3	90		
Children	10	(10' x 1)	
Interview	10	(5' x 2)	
Sociological Economical Caltural	30	(15' x 2)	
Political	20	(20' x 1)	
Dance, Music	20	(20' x 1)	
2. Film programmes			
Home	295		
Daily News	140		
Weekly News Review	10	(10' x 1)	
Local News	35	(5' x 7)	
Women	20	(20' x 1)	
Instructive	15	(15' x 1)	
Traveloque	20	(20' x 1)	
Sociological Economical Cultural	30	(15' x 2)	

Mode and category	Total minutes per week	Duration per unit	Number of programmes per week
Cine-film	25	(100' x 1/4*)	
Foreign	505		
Overseas News	60	(10' x 6)	
Cartoon Film	50	(10' x 5)	
Women	40	(20' x 2)	
Instructive	15	(15' x 1)	
Travelogue	120	(20' x 6)	
Economical, cultural, etc.	45	(15' x 3)	
Feature Film	150	(25' x 6)	
Cine-film	25	(100' x 1/4)*2	
3. Outside Broadcast	50		
Sports	50	(100' x 1/2)*1	
4. Programmes from other stations	170		
Daily News	70		
Interview	20	(5' x 4)	
Dance, Music	80	(20' x 4)	
5. Commercials	300		

Note: *1 "1/2" indicates that the programme will be televised once for every 2 weeks.

*2 "1/4" indicates that the programme will be televised once for every 4 weeks.

*3 VTR in studio programme shall be recorded beforehand and be reproduced at on-air time.

§2. Programme Planning and Production

Stations Lahore, Dacca and Karachi shall be designated as the main programme production station.

Station Rawalpindi shall produce mainly the news programmes and political programme (20 min. per week). It shall be furnished with other programmes by the main stations.

Stations Peshawar and Chittagong shall also be furnished with the programmes by the main stations.

At the final stage of Scheme A, stations Peshawar and Chittagong shall produce a live local programme of one hour per week, which should be telecasted in lieu of the news programme supplied by the master stations.

As for production of the news programme, the staffs for collecting, editing and broadcasting data on the news and for developing and printing the films shall be assigned to stations Lahore, Dacca and Karachi. The staffs for collecting data on the news only shall be assigned to stations Rawalpindi, Peshawar and Chittagong.

The news reels produced by these stations shall be interchanged between the stations in order to permit all stations to air their news programmes on the nationwide scale.

The live programmes which will offer less trouble to the audience about the language used in them (for instance music, dance, etc.) among those produced by stations Lahore, Dacca and Karachi shall be recorded on the VTRs, which shall be interchanged among said stations.

The film reels as the material of the film programmes shall be handed over from one station to another among stations Lahore, Dacca and Karachi to air the same film programme.

The dubbing of the foreign film reels selected as the material of the film programmes into the vernacular such as the Urdu, Bengali and other necessary language shall be performed at stations Lahore and Dacca prior to employment of these film reels for telecasting.

Station Karachi shall be furnished with the dubbed film reels by these stations to telecast the film programmes comprising such film reels.

Stations Peshawar and Chittagong shall telecast the programmes relayed from the master stations.

§3. Programme Expenses

The annual programme expenses of all stations estimated on the 30-hours-per-week on-air basis are as listed below. (The figures shown in £ are those which should be funded by the foreign currency.)

Station Lahore	Rs. 2,486,200 plus	£108,420
Station Dacca	Rs. 2,486,200 plus	£108,420
Station Karachi	Rs. 1,786,800 plus	£108,420
Station Rawalpindi	Rs. 97,600 plus	£ 4,120
Station Peshawar	Rs. 123,600	
Station Chittagong	Rs. 123,600	
Total	Rs. 7,104,200 plus	£329,380

Note: No expenses for the dubbing of imported foreign films are included in the programme expenses of station Karachi. In other words, station Karachi shall use the films dubbed at station Lahore or Dacca.

Also no expenses for the commercial programmes are included in the above programme expenses, since it is a policy that the

commercial programmes shall be funded by the sponsors of the programmes via their advertising agents.

The programme expenses depends on the current situation of a country concerning the TV service, since the expenses of the produced and purchased programmes are regulated from the degree of complexity of the production mode and various conditions such as the number of television receivers in current use, respectively.

The programme expenses listed above are the standard ones estimated by taking the factors given below into consideration and, therefore, may naturally be subject to some change if the conditions for the production mode and other are changed:

a. An example of NHK's programme expenses.
b. An example of production expenses for programmes of Radio Pakistan.
c. An example of production expenses for films in Pakistan.
d. Estimation of the number of TV receivers in current use.
e. Charge for leased foreign films.

The details of programme expenses are as follows:

Each station, Lahore, Dacca and Karachi

1. Studio programmes

Programme	Duration (in min.)	Number of programmes per year	Average unit cost (in Rs.)	Annual cost (in Rs)
Religions	5	365	70	25,550
Children	15 10	52 52 } 104	700	72,800
Women	20 15	156 52 } 208	850	176,800

Programme	Duration (in min.)	Number of programmes per year	Average unit cost (in Rs.)	Annual cost (in Rs)
Instructive	15	208	600	124,800
Interview	5	104	140	14,560
Sociological Economical Cultural	15	104	1,000	104,000
Political	20	52	1,000	52,000
Dance, Music, etc.	20	156	3,000	468,000
Drama	25	52	4,000	208,000
		Total		Rs. 1,246,510

Note: Expenses for producing studio programmes include the followings:

Performance fees and expenses for scenarios and composition.

Expenses for art (Stage setting, stage properties, costume, Caption, etc.)

Expenses for recording and dubbing.

Expenses for production activities (Expenses required for making negotiation, expenses for reception, material, script and leased motorcar)

The above expenses for producing studio programmes include no expenses for the programmes furnished by other stations.

2. News and information programmes (all figures in average unit and annual cost columns are in rupee. The figures given in Ł are those which should be funded by the foreign currency.)

New programmes

Produced programme given as their annual running minutes	Unit cost per minute	Annual cost (in Rs)
9620	10	96,200

Expenses for purchasing raw film

(700,000 feet of 16mm film, including both the negative and positive ones, required to run it over 9620 minutes.)

£19,240

Programme	Duration (in min.)	Number of programmes per year	Average unit cost (in Rs)	Annual cost (in Rs)
News commentary	10	365	300	109,500
Information Weather Forecast Tomorrow's Programmes	10 (per day)	365	30	10,950
Total			Rs.	216,650 £19,240

Note: Expenses for producing news programmes include the followings:

Expenses for filming, for developing and editing, for producing caption, for purchasing raw film and for various producing activities.

The expenses for the news films produced by other stations shall be included in the expenses for news programmes of that stations and shall not be included in those of the station furnished with those news programmes.

3. Outside broadcast programme

Programme	Duration (in min.)	Number of programmes per year	Average unit cost (in Rs)	Annual cost (in Rs)
Sports	100	26	1,600	41,600

Note: Expenses for outside broadcast programmes include the followings: Performance fees, expences for outside broadcast (Traveling expenses, installation cost, etc.) and expenses for production activities.

4. Film programmes

The greater pert of the televised films shall be imported from abroad.

Part of imported films shall be dubbed.

Other films shall be furnished by the DFP and domestic cinema productions on lease basis.

(1) Imported films (All figures in the average and annual lease rate columns are in £ and are those which should be funded by the foreign currency)

Programme	Duration (in min.)	Number of programmes per year	Average unit lease rate (in £)	Annual lease rate (in £)	Expenses for dubbing and transportation, customs, commission, etc., (in Rs.)
Cartoon film	7	260	70	18,200	130,000 (Rs 500x260)
Women	20	104			
Instructive	15	52			
Educational, Cultural	15	156	624	60	37,440	49,920 (Rs 80x624)
Travelogue	20	312			

Programme	Duration (in min.)	Number of programmes per year		Average unit lease rate (in £)	Annual lease rate (in £)	Expenses for dubbing and transportation, customs, commission, etc. (in Rs.)
Cartoon film	7	260		70	18,200	130,000 (Rs. 500x260)
Women	20	104	624	60	37,440	49,920 (Rs 80x624)
Instructive	15	52				
Educational, Cultural	15	156				
Travelogue	20	312				
TV Film	25	312		80	24,960	468,000 (Rs 1,500x312)
Cine-film	100	13		160	2,080	39,000 (Rs 3,000x13)
Overseas News	10	312		8	2,496	12,480 (Rs. 40x312)
			Total		£ 85,176	Rs.699,400

(2) Home films (all figures in the average and annual lease rate columns are in Rs.)

Programme	Duration (in min.)	Number of programmes per year		Average unit lease rate	Annual lease rate
Women	20	52	260	200	52,000
Instructive	15	52			
Educational, Cultural	15	104			
Travelogue	20	52			
Cine-film	100	13		10,000	130,000
		Total			Rs. 182,000

5. Expenses common to all programmes for composing and producing them:

Rs. 100,000, £4,000

Note: The above-mentioned expenses common to all programmes include the followings:

1. Expenses for composing and planning programmes, expenses required for programme advisory committee (allowance, expenses for conference, etc.), etc.
2. Research and study expenses.
3. Expenses for purchasing news papers, publications, photos, etc.
4. Expenses for purchasing consert hall fixture, video tape, recording tap, etc. Expenses for purchasing records, musical notes, musical instruments, stage effect instruments, etc.
5. Others

Station Rawalpindi

Programme	Duration (in min.)	Number of programmes per year	Average unit cost(in Rs)	Annual cost (in Rs)
1. Political	20	52	1,000	52,000

2. News

Produced programmes given as their annual running minutes	Unit cost per min. (in Rs)	Annual cost (in Rs)
1,560	10	15,600

Expenses for purchasing raw film: £3,120

3. Expenses common to all programmes for composing and producing them:

	Rs 3,000	£ 1,000
Total	Rs 97,600	£ 4,120

Each station, Peshawar and Chittagong

	Programme	Duration (in min.)	Number of programmes per year	Average unit Cost (in Rs)	Annual cost (in Rs)
1.	Local	10	312	300	93,600

2. Expenses common to all programmes for composing and producing them:

	Rs 30,000
Total	Rs 123,600

Expenses for Producing Programmes (TV Station in Tokyo)
(Figures in the table are in ¥)

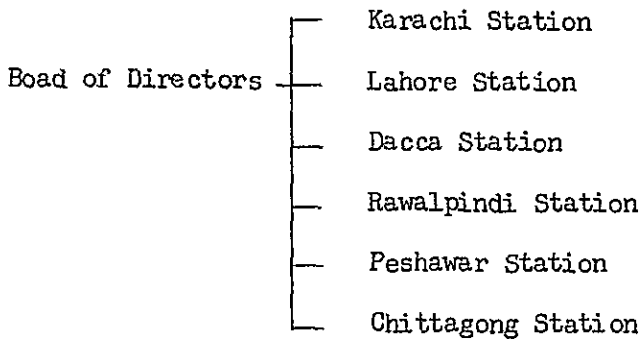
Made of Programme \ Duration / Category of Programme		10 min.	15 min.	20 min.	25 min.	30 min.	45 min.	50 min.	55 min.	60 min.	90 min.
Live Programme	News	News 60,000	Focus of news 20,000	Overseas news 180,000							
	Educational, Culturul, General		a moment in the morning 77,000	Teacher's Hour 80,000		Window of living 190,000				Culture, featured 240,000	
	Talk	Man in topic 30,000	Lounge in the morning 33,000			Everyday German 52,000		High school study course 74,000	Diet round-table meeting 120,000	Sunday college 135,000	
	Instructive			Today's cooking 44,000	Gardening as a hobby 112,000	TV auto-school				TV sports class 175,000	
	Music	Picture book of songs 59,000			Songs of your native 370,000	Young folk songs 370,000					
	Drama		Doll-play 290,000	Cheeful parties 230,000	Stars twincle			N.H.K. theatre 1,550,000			
	Quiz, Game				Danger signal 130,000	Gesture 110,000	Amateur singers contest 170,000				
Film Programme	Feature Film		Album of nature 140,000	Journey in television 150,000		New traveling in Japan 320,000					
	Cine-film, superimposed										
	Cine-film, dubbed				Cosmic family 900,000	Lively couple 860,000					
Outside Broad-casting											Outside broadcasting of sports 270,000

Section 3 Organization

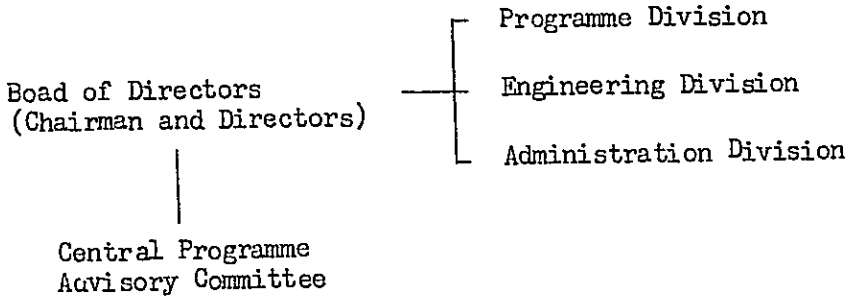
§1. TV Corporation

The Corporation will be composed of the Board of Directors and Stations as indicated below. Central Programme Advisory Committee is attached to the Board of Directors and Regional Programme Advisory Committee is attached to each station to advise programme policy. Officials are also attached to the Board of Directors to cover the secretarial work. It is not possible to centerize the controlling power over the daily operations of stations because the three stations share the programming. Therefore the Board of Directors might be so organized that one of Directors makes the station manager of Karachi who is also in charge of commercial business of the Corporation, one makes the station manager of Lahore who is also in charge of programming in West Pakistan and one makes the station manager of Dacca who is also in charge of programming in East Pakistan, also one director should look after development and maintenance of the entire facilities of the Corporation.

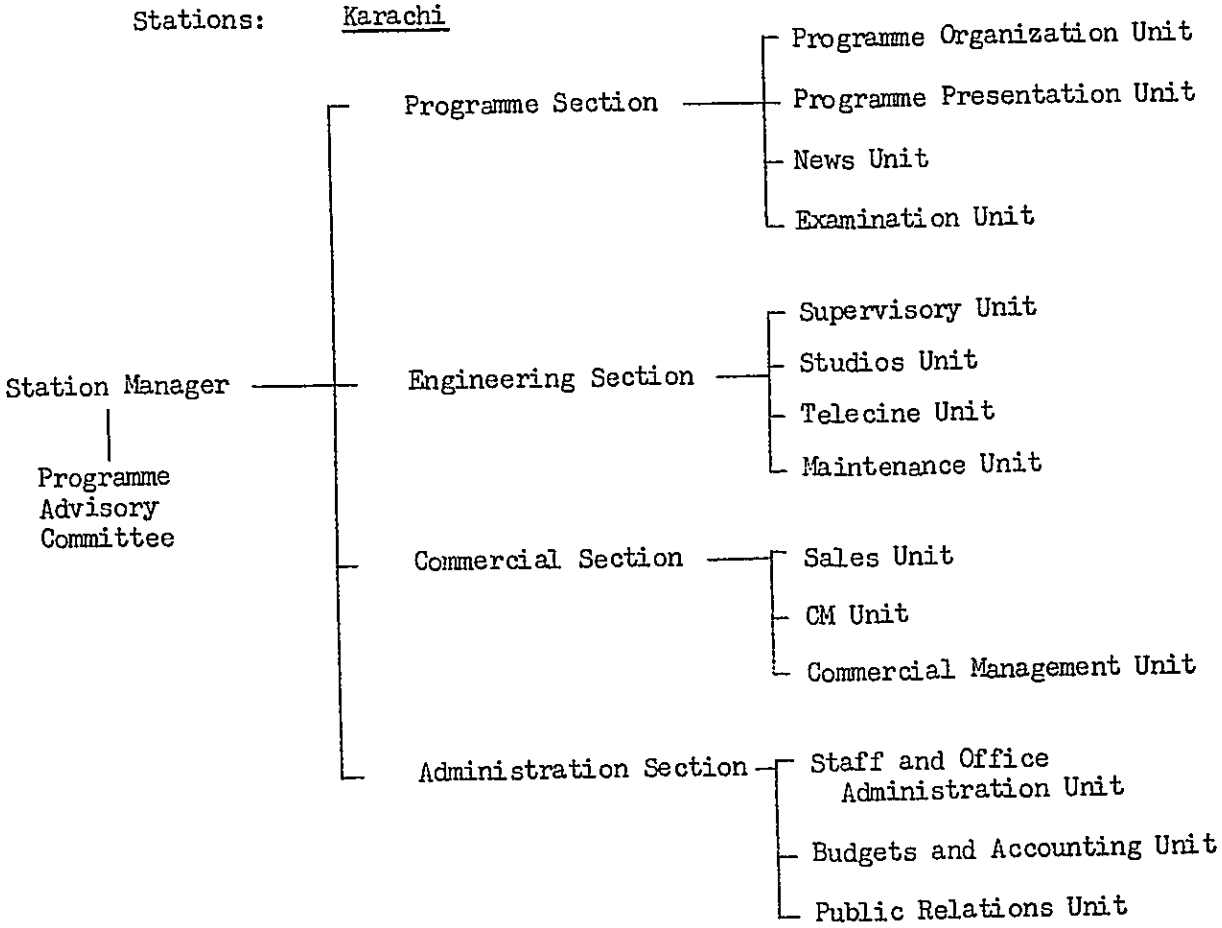
TV Corporation



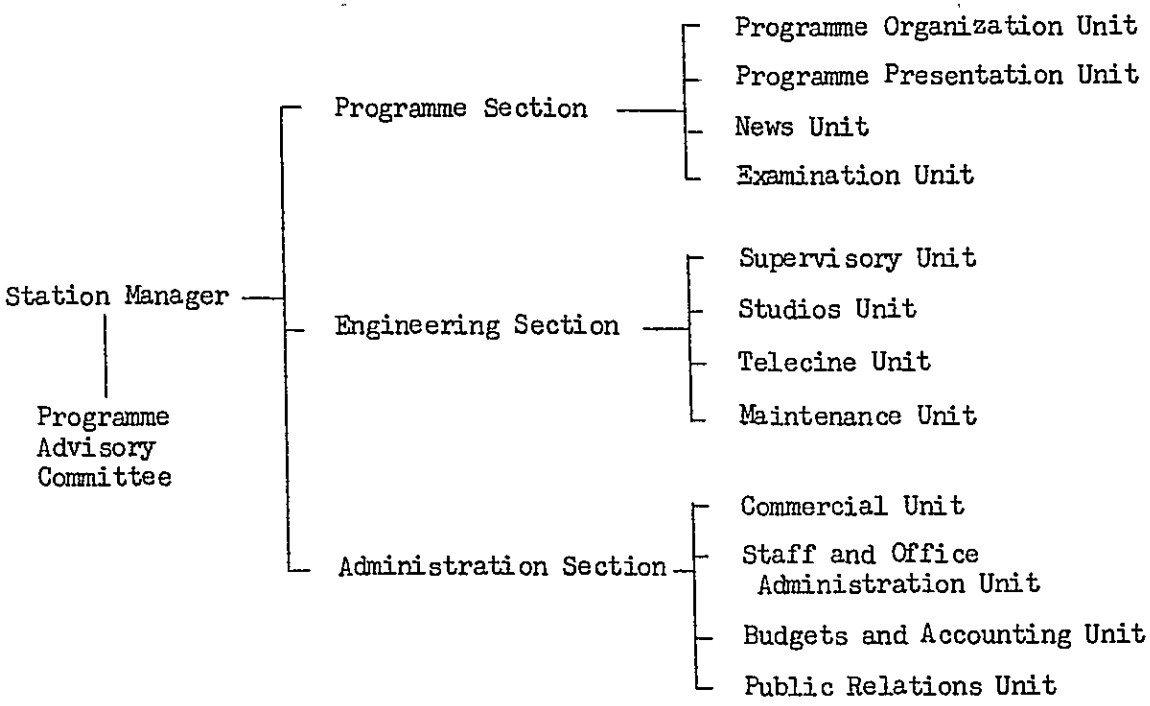
Headquarters:



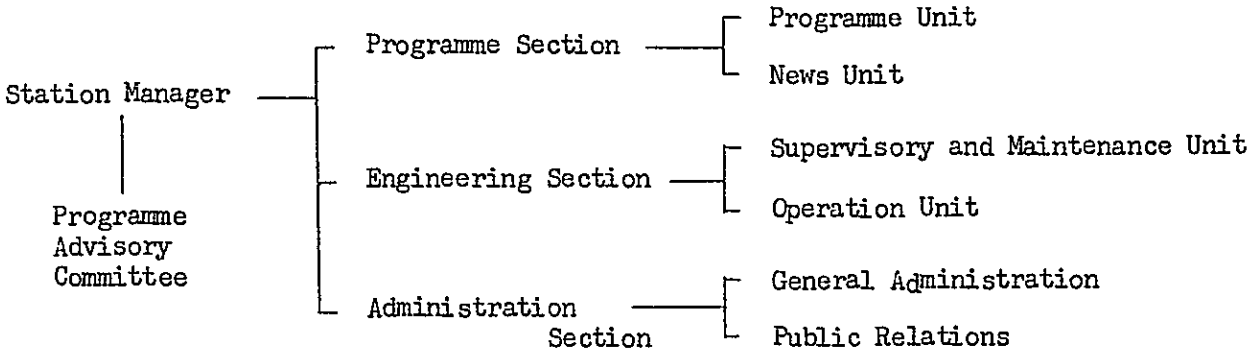
Stations: Karachi



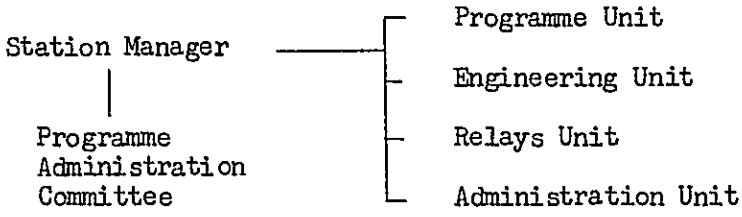
LAHORE AND DACCA



RAWALPINDI



PESHAWAR AND CHITTAGONG



Functions of each sections are:

Headquarters:

Chairman; represents the Corporation, presides the Board of Directors and presides over the Corporation's business determined by the Board of Directors.

Board of Directors; decides the business project including programme planning and other important matters relative to the operation of the Corporation.

Programme Division; assists the Board of Directors, in programme planning and budget and staff management relative to programming, and also assists the Central Programme Advisory Committee.

Engineering Division; assists the Board of Directors in planning of maintenance and development of facilities and budget and staff management relative to technical operation, maintenance and development, and also assists in technical research.

Administration Division; assists the Board of Directors in Public relations, personnel, finance and other general affairs.

Karachi Station:

Station Manager; represents the station and directs the whole operation of the station.

Programme Section

Programme Organization Unit; plans programming including budget, staff, studio and rehearsal room arrangement, collects and keeps programme materiales etc.

Programme Presentation Unit; produces programmes except news.

New Unit; organizes, produces and presents news.

Examination Unit; examines programmes before and/or after the presentation also assists Programme Advisory Committee.

Engineering Section:

Supervisory Unit; plans for development of facilities, supervises operations, procures materials, manages budget and staff.

Studio Unit; operates studio facilities.

Telecine Unit; operates telecine facilities.

Maintenance Unit; maintains whole station facilities including a transmitter.

Commercial Section:

Sales Unit; sells Broadcast hours.

CM Unit; provides the stations with CM materials.

Commercial Management Unit; effects liaison among the stations and supervises them in connection with the commercial business.

Administration Section:

Staff and office administration Unit; handles personnel affairs and related matters.

Budget and Accounting Unit; handles budget and accounting matters.

Public Relations; handles public relations.

Other stations:

Almost the same provided that simpler forms are adopted in some cases and relays units are added to certain stations.

§2. Personnel

The number of personnel is indicated as follows:

A. Numbers of personnel (Scheme A)

	Head Quarters	Karachi	Lahore Dacca	Rawal-pindi	Peshawar	Chittagong
Chairman	1					
Station manager		1	1	1	1	1
Programme	9	53	53	27	17	17
Engineering	11	55	55	29	19	22
Administration (including CM section)	10	14	11	8	8	8
Miscellaneous	19	30	30	21	17	17
Total	50	153	150	86	62	65

Grand Total 716

B. Engineering personnel (Scheme A)

Each Station, Karachi, Lahore and Dacca

	Engineer	Operator	Mechanic
Chief	1		
Studio			
TD	1		
Video Equipment	3		
Switcher		2	
Cameraman		5	
Light Director		1	
Light Operator		2	

	Engineer	Operator	Mechanic
Audio mixer		2	
Boom operator		2	
Master control		1	
Microwave		1	
Assistant			3
Telecine			
Telecine	1		
VTR (2 units)	1		
Kine recorder	1		
Film Develop	1	3	
Assistant			2
Maintenance			
Transmitter	2		2
Studio telecine	4		4
Supervisory			
Planning	1	1	
Operation	1	1	
Procurement & supply	1	1	
Management	1	1	
Total	19	25	11

Rawalpindi- Station

	Engineer	Operator	Mechanic
Chief	1		
Operation			
T.D.	1		
Switches		2	

	Engineer	Operator	Mechanic
Cameraman		3	
Light Director		1	
Light Operator		1	
Audio Mixer		1	
Boom Operator		1	
Master Control		1	
Telecine	1	1	
VTR	1		
Assistant	1		3
Maintenance & Supervisory			
Transmitter	1		2
Studio, telecine & Power	2		2
Supervisory	2	2	
Total	9	13	7

Each station, Peshawar and Chittagong

	Engineer	Operator	Mechanic
Engineering			
Chief	1		
V.E.	2		
Switcher		1	
Cameraman		2	
Light Director		1	
Light Operator		2	
Audio mixer		1	
Boom Operator		2	
Telecine	1	1	
Assistant			2
Maintenance	2	4	1
Total	6	14	3

C. Programming personnel (Scheme A)

Each station, Lahore, Dacca and Karachi

Staff		Function
Programme director	1	
Programming-administration unit		
Programmer-administrator	2	(Composition and issue of programmes. Planning and control of budget and personnel.)
Broadcast service staffs	5	(Adjustment and control of use of studio and rehearsal room. Collection and adjustment of broadcast materials. Administration of studio furniture. Establishing inter-station liaison)
Programme production-representation unit		
Producer	3	
Assistant producer	10	
Scriptor and translator	3	(Preparation of play-book in English and vernacular. Translation of imported film programmes.)
Announcer	3	(In English and vernacular.)
Designer	2	
Stage properties specialist and props	4	
Make-up and costume specialist	2	
Caption writer	1	(Serves also for news unit)
News unit		
Editor	1	
Assistant editor	2	(Collection of data on news. Also serves as producer for news programme and commentary.)
Script writer	3	(In English and vernacular.)
Film editor	1	

Staff		Function
Assistant film editor	1	
News cameraman	4	(Filming)
Assistant cameraman	1	(Assist cameraman in filming. Transportation of equipment. Illumination.)
Recording staff	1	
Programme examination unit		
Senior examiner	1	(Examination of programmes. Perform monitoring activity. Secretariate, of programme advisory committee.)
Assistant examiner	1	
Total	53	

Station Rawalpindi

Staff		Functions
Programme director	1	
Programming-administration unit		
Programmer-administrator	1	
Broadcast service staff	2	
Programme examiner	1	
Producer	1	
Assistant producer	1	
Script writer-translator	1	
Announcer	2	
Designer	1	
Stage properties specialist and props	2	
Make-up-costume specialist	1	
Caption writer	1	

Staff		Functions
News unit		
Editor	1	
Assistant editor	2	
Script writer	3	
Film editor	1	
News cameraman	3	
Assistant cameraman	1	
Recording staff	1	
Total	27	

Stations Peshawar and Chittagong

Staff		Function
Programme director	1	
Programmer-administrator	1	
Broadcast service staff	1	
Script writer-translator	2	(Serves also as script writer for news.
Announcer	2	
Producer	1	
Assistant producer	2	
Designer	1	
Stage properties specialist and props	2	
Make-up-costume specialist	1	
Caption writer	1	
News cameraman	1	
Assistant cameraman	1	(Also serves as recording staff for news.)
Total	17	

Section 4 Finance

§1. Initial cost

Initial cost for scheme A is as follows:

1. Buildings: Rs. 21,280,000

2. Facilities and Equipments: Rs. 26,670,000 (£2,000,000) in foreign exchange
(include transport and construction work expenses)

3. Total: Rs. 47,950,000
Out of which 26,670,000 (£2,000,000) in foreign exchange

§2. Recurring expenditure

Annual recurring expenditure for scheme A is as follows:

1. Programme expenses: Rs. 11,600,000
out of which Rs. 4,400,000 (£330,000) in foreign exchange

2. Engineering expenses: Rs. 6,630,000
out of which Rs 5,330,000 (£400,000) in foreign exchange

3. Employees' allowances: Rs. 3,552,000
(Rs. 4,800 x 740 persons)

4. General & sales expenses: Rs. 3,200,000

5. Margins for advertising Agencies: Rs. 1,500,000
(= 15% of Rs. 1 crores, annual ad. revenue)

6. Depreciation;

A. buildings: Rs 700,000

Notes: 1. building (including airconditioning) cost:
Rs. 21,280,000 (280,000 sq.ft., Rs.76/sq.ft.

2. 30 year depreciation

B. facilities and equipments: Rs 3,810,000 (£286,000) in foreign exchange

Notes 1. facilities & equip. Rs. 24,000,000

2. transports and works 10% of the above

3. total 26,600,000

4. 7 year depreciation

7. Total: Rs 30,992,000

Out of which Rs 13,550,000 (£1,016,000)

in foreign exchange

Note: The above expenses do not include rates of interest.

§3. Revenue

1. The revenues expected are approximately one crores Rs per year on advertising and 50 Lakh Rs per year of receiver fees. These revenues do not balance the recurring expenditure. The details of the revenues are given below:

2. Advertising

Advertising expenditures are estimated approximately 6 crores Rupees per year, 0.24% for the gross national income.

It is not possible to foretell how much share the TV can have. It is only a estimate that one crores Rupees per year, 15% of the total advertising expenditures will come to the TV.

Table 1 shows distribution ratios of advertising expenditures in various countries. TV shares range from 4 ~ 59.6% with a median value of 15%.

The advertising standard, the ratio of advertising expenditure to the national income, is extremely low in Pakistan. It is very likely that the advertisement develops further. There is expectation that the TV advertisement grows. However the TV cannot achieve it by itself. Development of the advertisement as a whole is necessary. This is one of

the reasons that scheme B has been proposed. Table 2 shows advertising standard in various countries and Table 3 shows advertising expenditure per capita.

3. TV households

It is again impossible to foresee the number of TV households and TV sets in use. Only estimation has appeared that 100,000 TV households and the same number of TV sets are expected to bring up.

It is assumed that a family can afford a TV set if it earns 1,000 Rupees per month. It is estimated that there are approximately 100,000 households that earn Rs 1,000 or more a month. The following examinations are submitted to support this estimate.

(1) The annual levies of income taxes were:

Rs 2555 lahks	1962 - 3
Rs 2660	1963 - 4

1/2 ~ 1/3 of the above amount are assumed to come from households with Rs 1,000 or more income, the rest from enterprises and households with lower income.

(2) The taxes are estimated to comprise of:

Income/month	Tax/year	Distribution ratio
Rs 1,000	Rs 360	6
Rs 1,500	Rs 1,000	3
Rs 2,000	Rs 2,040	1

The average becomes Rs 720 per year.

(3) From the above figures it is concluded that 110,000 ~ 186,000 households earn Rs 1000 or more, 100,000 is a safe figure.

There is some standards on the advertising expenditure that aims at one TV receiver in Public.

Table 4 shows these figures in various countries.

The figures range around 1000 to over 10,000, the median is found ¥5580 (Rs. 74)

Table 5 shows the transition of figures in the early years of TV in Japan. Supposing advertisers spend Rs. 74 for each TV set a year, 135,000 sets are need for the TV to earn 1 crore Rs. advertisement. This figure is very close to the figure in proceeding paragraph.

Table 1. Distribution Ratios of Advertising Expenditures 00,000,000¥ (1 Ruppee = ¥75), %

Country	Year	Total Ad.	Print media				total	outdoors & transports	movies	radio	TV	DM	display	SP	promotion materials	other types of prints	miscel.	working budget	Grand total
			news papers	magazines	special ma.	production costs													
USA	'62	44,570	27,8	6.8	4.8	3.3	42.7	7.4		5.7	15.0	15.6					19.6		100
UK	'62	4,561	29,3	16.6			45.9	6.4	1.1		17.2	8.6	3.5	6.7	3.4		1.7	5.5	100
W. Germany	'62	2,653	47.7	37.2			84.9	3.6		1.9	9.6								100
Canada	'62	2,086	35.6	3.4	4.9		43.9	6.5		8.3	10.4	19.1				5.0	6.8		100
Japan	'62	2,384	38.7	6.0			44.7	8.6	1.8	7.3	28.9	4.7	2.1				1.9		100
Australia	'62	900	44.5	5.2	8.8		58.5	8.4	3.3	11.5	18.3								100
Holland	'62	644	34.5	11.1	12.4		58.0	5.0	1.3	1.2		34.5							100
Colombia	'62	425					35.0	17.0	4.0	26.0	9.0						9.0		100
Belguim	'62	502	27.1	14.5			41.6	10.6	3.1	2.2	0.3	17.4	7.7	7.7			9.4		100
Finland	'62	342					46.3	3.6	1.0		4.8	9.3	3.0	28.1	2.3	0.8	0.8		100
S. Africa	'62	126	70.0	19.0			89.0			11.0									100
Austria	'61	192					44.7	15.8	19.5	10.5	6.5								100
Portugal	'62	132					35.5	24.0	3.5	19.0	13.0	1.0					4.0		100
Peru	'61	80	31.5	3.0			34.5	5.0	4.0	18.0	27.5	2.0		2.0	5.0		2.0		100
Israel	'62	60	49.0	2.0	4.0		55.0	8.0	5.0	4.7		10.0	10.0		3.0		4.3		100
Ireland	'62	59	62.9	4.1			67.0	4.7	2.4	3.1	14.3		8.5						100
Lebanon	'62	28	28.0	22.0			50.0	10.0	9.0		18.0	4.0	3.0	2.0			4.0		100
Curacao	'61	14	39.4	0.8			40.2	0.9	0.9	23.7	17.5	4.7	3.2	1.9	3.8	0.6	2.6		100
Chile	'61	9	33.9	4.5			38.4	11.6	8.0	30.4			11.6						100
France	'62	1,531	22.4	28.1			50.5	8.1	7.1	9.1							25.2		100
Switzerland	'62	650					45.0	6.0	1.5			20.0	15.0				12.5		100
Brazil	'60	502	32.5	11.6			44.1	8.1		14.0	9.3	21.0			2.9		0.6		100
Spain	'62	274					57.0	7.1	11.8	13.1	11.0								100
Norway	'60	200																	100
Turkey	'62	59	30.0	5.4	2.0		37.4	21.1	2.7	4.8	23.1		4.1				6.8		100
Greece	'62	37	49.4	16.0	3.6		69.0		8.3	22.8									100
Sweden	'59	592	43.0	8.0	8.0	3.0	62.0	1.0	1.5			22.5							100
Argentina	'62	458	35.2	8.8	1.5		45.5	8.3	3.7	18.5	16.7	3.2	1.1	0.7	0.8	0.3	1.2		100
Iran	'59	3	17.0	6.8			23.8	3.6		11.1	59.6						1.9		100
Denmark	'58	192	44.3	8.1	8.7		61.1	3.1	3.6			22.0	1.9			5.2	4.1		100
Ecuador	'60	18	40.0	1.0			41.0			20.0	4.0	4.0			11.0		20.0		100
Egypt	'60	20					60.0	5.0	3.0								32.0		100
Italy	'61	815					40.0	11.0	7.0	6.0	9.0						27.0		100
Jamaica	'59	9					63.0		4.0	27.0							6.0		100
Pakistan	'60	34					54.9	44.0				1.6							100
Philipine	'62	132					43.9	6.9	2.0		38.6	8.6							100
Phailand	'60	20	31.0	10.0			41.0	15.0	4.0	25.0	15.0								100

Table 2
Ratio of Advertising Expenditure to National Income.

Order	Country	Year	Ad. Expenditure (00,000,000¥)	National income (00,000,000¥)	Ratio (%)
1	Colombia	'62	537	14,252	3.77
2	USA	"	44,571	1,633,320	2.73
3	Spain	"	274	11,138	2.45
4	Canada	"	2,088	101,898	2.15
5	Finland	"	342	15,469	2.10
6	UK	"	4,828	248,905	1.94
7	Australia	"	862	45,883	1.84
8	Holland	"	644	38,467	1.67
9	Switzerland	"	541	33,312	1.61
10	Peru	"	89	5,555	1.60
11	Portugal	"	133	8,604	1.55
12	Japan	"	2,384	154,208	1.54
13	W. Germany	"	2,653	234,000	1.13
14	Chile	"	121	10,793	1.12
15	Philipine	"	132	13,021	1.01
16	Argentina	"	308	31,775	1.00
17	Belguim	"	351	36,000	0.97
18	Australia	"	186	19,771	0.94
19	Ireland	"	59	6,370	0.93
20	France	"	1,531	197,613	0.77
21	Israel	"	36	5,904	0.61
22	N. Africa	"	131	25,261	0.52
23	Turkey	"	59	17,871	0.32
24	Greece	"	34	11,014	0.31
25	Lebanon	"	28		
26	Curacao	"	1		
27	Italy	'61	815	99,911	0.82
28	Norway	'60	200	12,393	1.61
29	Brazil	"	502	35,520	1.41
30	Ecuador	"	18	2,808	0.64
31	Thailand	"	20	7,682	0.25
32	Pakistan	"	34	17,615	0.19
33	Egypt	"	3		
34	Sweden	'59	592	37,161	1.59
35	Jamaica	"	8	1,905	0.42
36	Iran	"	3		
37	Denmark	'58	192	14,708	1.31

Table 3
Advertising Expenditure and National Income per capita

Order	Country	Year	Population (000)	Ad. expenditure per capita (¥)	National income per capita (¥)
1	USA	'62	186,591	23,886	875,346
2	Canada	"	18,600	11,223	547,838
3	Switzerland	"	5,610	9,643	593,797
4	UK	"	53,341	5,051	466,630
5	Australia	"	10,705	8,052	432,487
6	Finland	"	4,523	7,561	342,210
7	Holland	"	11,900	5,408	323,256
8	W. Germany	"	54,767	4,844	427,265
9	Belgium	"	9,230	3,807	390,030
10	Colombia	"	14,769	3,636	96,499
11	France	"	45,025	3,256	416,609
12	Austlia	"	7,128	2,609	277,371
13	Japan	"	95,180	2,505	163,017
14	Ireland	"	2,624	2,059	225,567
15	Israel	"	2,292	1,571	257,592
16	Chile	"	8,000	1,513	134,913
17	Portugal	"	8,913	1,492	96,533
18	Argentina	"	21,600	1,426	147,106
19	Curacao	"	127	1,102	
29	Spain	"	30,430	900	36,602
21	N. Africa	"	16,122	813	156,687
22	Philipine	"	29,698	444	43,845
23	Greece	"	8,451	402	130,328
24	Turkey	"	29,418	199	60,747
25	Lebanon	"			
26	Italy	'61	49,455	1,648	202,024
27	Peru	"	10,365	776	
28	Norway	'60	3,584	5,580	345,786
29	Brazil	"	68,000	738	52,235
30	Ecuador	"	4,317	416	65,046
31	Thailand	"	26,257	76	29,256
32	Pakistan	"	92,578	37	19,027
33	Egypt	"	25,948	12	
34	Sweden	'59	7,440	7,950	499,475
35	Jamaica	"	1,579	507	120,646
36	Iran	"	20,182	15	
37	Denmark	'58	4,515	4,252	325,786

Table 4
Advertising expenditure per TV set in use

Country	No. of TV sets in use (000)	Ad. expenditure per set (¥)
USA	57,900	11,500
UK	13,000	6,000
W. Germany	8,000	3,180
Canada	4,120	5,160
Japan	14,100	4,490
Australia	1,750	9,420
Colombia	300	12,700
Austria	420	2,900
Portugal	120	14,200
Peru	130	15,900
Lebanon	46	1,080
France	4,000	19,000
Brazil	1,800	2,600
Spain	950	3,180
Argentin	1,150	6,550
Iran	85	2,500
Ecuador	5.1	1,370
Italy	4,200	17,400

Table 5

Transition of Advertising Expenditure in Japan

Year	Ad. expenditure (000,000¥)	No. of sets (000)	Ad. expenditure per set (¥)
1953	100	17	5890
1954	400	52	7700
1955	900	165	5460
1956	2000	419	4790

Part 4 Scheme B

Section 1. Facilities

The Scheme B covers the installation plans for three stations Karachi, Lahore and Dacca.

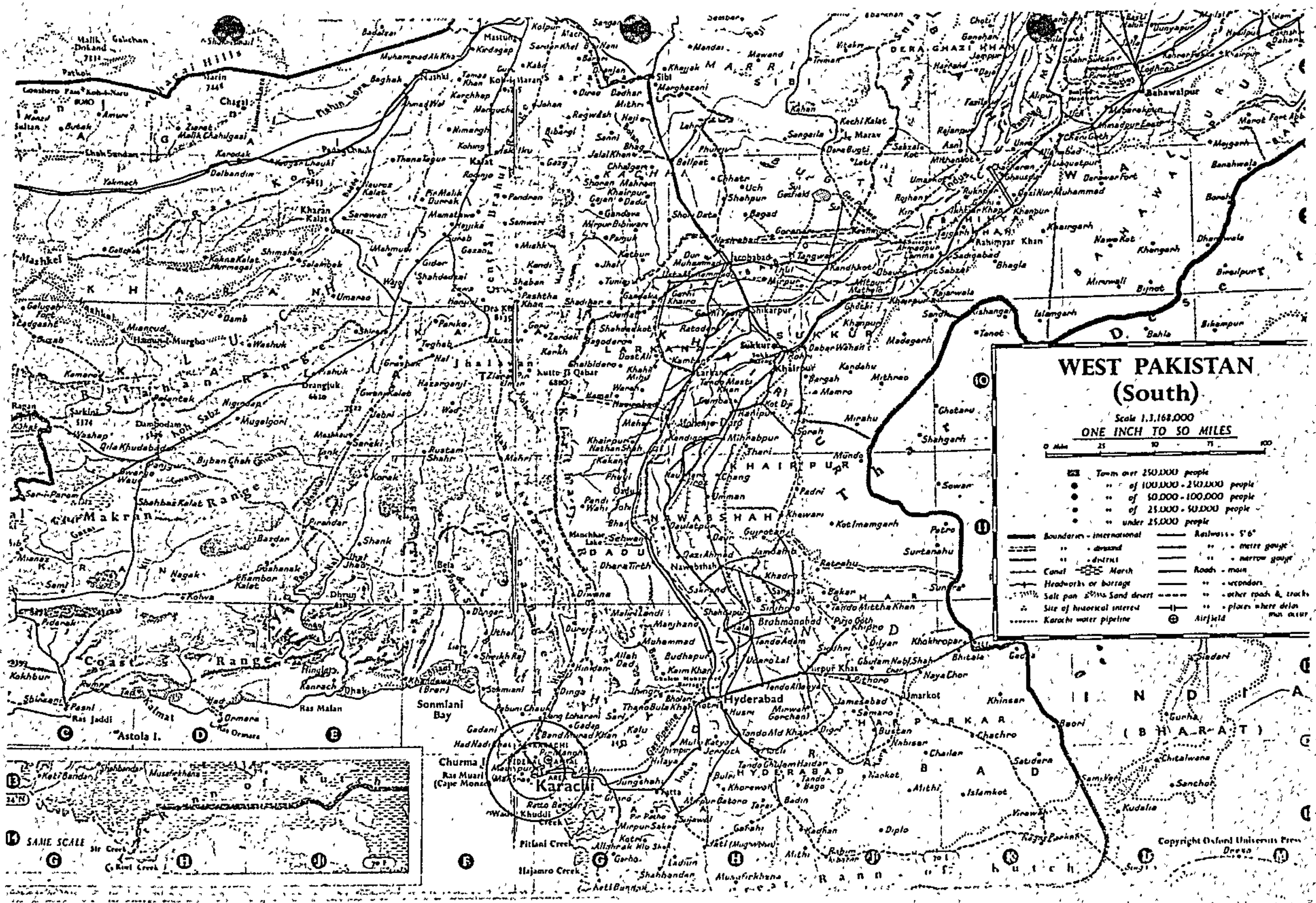
The facilities of stations Lahore and Dacca serving as the pilot stations at present shall be used as the station facilities of these stations in the present scheme after expanding them with some additional equipments.

Station Karachi shall be installed using a 800-watt transmitter (which may be expanded to deliver an increased output of 5 kilowatts in future), a 6-bay super turnstile antenna and a 300 feet mast. As to the components of these equipments, refer to Table 1 in Part 4.

Stations Lahore and Dacca shall be installed using a 300-watt transmitter, 4 full wave dipoles antenna and a 150-feet mast. The components of these equipments are the same as those used in the existing pilot stations.

The TV channel to be used shall be the same as those used at present by the pilot stations for Stations Lahore and Dacca and the channel including Band III (or Band I, if necessary) for Station Karachi.

The service areas of the above-mentioned three stations are indicated below and illustrated in the maps.


WEST PAKISTAN
(South)
Scale 1:3,168,000
ONE INCH TO 50 MILES
Town over 250,000 people
" of 100,000 - 250,000 people
" of 50,000 - 100,000 people
" of 25,000 - 50,000 people
" under 25,000 people
Boundaries - international
" - division
" - district
Canal
Marsh
Headworks or barrage
Salt pan
Sand desert
Site of historical interest
Karachi water pipeline
Railways - 5'6"
" - metre gauge
" - narrow gauge
Roads - main
" - secondary
" - other roads & tracks
" - places where delays may occur
Airfield
Hyderabad
Karachi
Sukkur
Bahawalpur
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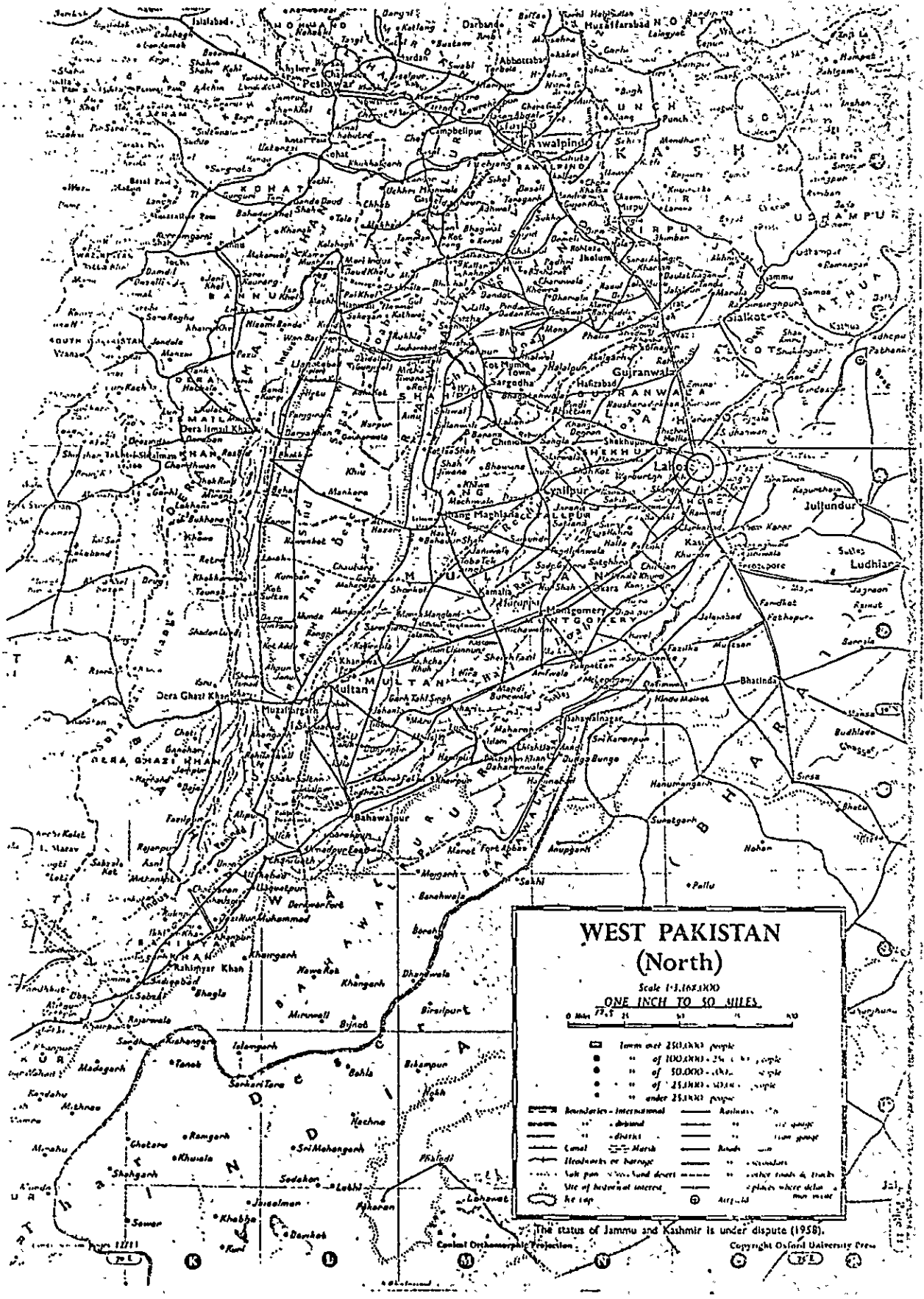

WEST PAKISTAN
(North)
Scale 1:3,168,000
ONE INCH TO 50 MILES
The status of Jammu and Kashmir is under dispute (1958).
Conical Orthomorphic Projection
Copyright Oxford University Press


EAST PAKISTAN
ONE INCH TO 30 MILES
Towns – population over 250 000 people
from 100 000-250 000 people
50,000-100,000 people
25,000-50,000 people
below 25,000 people
International Boundary
Divisional Boundary
District Boundary
Canal
Marsh
Places where delay may occur
Site of Historical Interest
Steamer Route
Railways
5' 6" gauge
metre gauge
narrow gauge
Roads
main
secondary
other roads and tracks
Airfield
Feet
Sea Level
Land Depression
Dacca
Narayanganj
Mymensingh
Chittagong
Comilla
Chandpur
Barisal
Khulna
Pabna
Faridpur
Jamalpur
Sylhet
Agartala
Brahmanbaria
Noakhali
Hatia I.
Sandwip I.
Kutubdia I.
Maiskhal I.
Sonadia
Teknaf
Kylas
Bengal
Bay
Mouths of the Ganges
Dakhin Shahbazpur I.
South Hatia I.
Rabnabad Is.
Dinmanick Is.
Khasi
Garo Hills
CHITTAGONG
Putney I.

Service Areas

Station	ERP (KW)	Antenna Height (feet)	Radius of service area (miles) Grade A	Grade B
Karachi	4	300	13	24
Lahore	0.3	150	5	11
Dacca	0.3	150	5	11

Stations Lahore and Dacca shall be provided with two studios and one OB van and Station Karachi with one studio. The components of these studio and OB facilities are as listed in Table 2 in Part 4.

The interchange of programmes of the three stations shall be performed through interchange of the film reels produced by these stations.

The equipment costs of each station are as listed in Table 3 in Part 4. Its sum total amounts to Rs 8,800,000 (£660,000) as evaluated by the standard exchange rate to the foreign currencies.

As to the layouts and block diagrams of the transmitters and studio facilities and the specifications of major components, refer to attachment.

Section 2 Programmes

§1 Programme schedule

It seems adequate to operate each station in accordance with a programme schedule based about 23 hours-per-week on-air operation, comprising 3 hours' on-air from 6.30 pm to 9.30 pm in week days and 5 hours' on-air from 4.30 pm to 9.30 pm in Sunday, at the initial stage of the TV service succeeding to the inauguration of each station when the general situation of the TV Corporation is considered by taking the following factors in consideration:

1. The running cost of each TV station will be increased by increasing on-air hours.
2. It will take a pretty long period of time to fulfill various conditions such as to secure and train the required technical personnel, to study and get skilled in the manner of production, and to complete provision of necessary facilities and equipments, even through the candidates for the technical personnel will have been trained in an experimental telecasting at the pilot stations.

It will be very difficult to have the programmes of each station include all sorts of telecasting items, because less programmes will be reserved for each station at the initial stage.

The programmes which are superior in both their quality and volume may be offered to your nation only when each station will have become powerful enough to establish finally a programme schedule consisting of the comprehensive programmes covering all sorts of telecasting items starting with a programme schedule comprising the programmes with limited telecasting items and expanding the scope of that schedule gradually. If each station is

in too haste in expanding the volume of programmes with resultant deterioration in their quality, its programmes will become out of interest of your TV audience and the TV service will be isolated from your people.

At the initial stage, therefore, it is recommendable for each station to telecast the best programmes selected even though the programmes are few in their volume.

§2 Programme planning

The policy of composing the programmes and the basic considerations in preparing the programme schedule shall conform to those specified in the Scheme A programme.

The following is an example of the programme schedule prepared for each station operating on 23 hours-per-week on-air basis.

Table 1. Programme schedule (23 hours-per-week on-air basis)

Week-days

6.20 pm	Test Pattern	SL
	Signature Film.	F
6.30	Lection of Holy Koran.	L
6.35	News.	FO
6.45	Information Bulletin, Weather Forecast.	O
	Programme Rundown. CM: 2 min.	O
6.50	Programme for children.	F/K
7.00 pm	Local News.	F/L
7.05	CM: 2 min. Program for Women. CM: 3 min.	L/F
7.30	Informative/Educational (Sociological, Economical, Cultural, Travelogue, etc.)	F/L

7.50	CM: 2 min. Interview. CM: 3 min.	K/L
8.00 pm	Entertainment (Dance, Music in week-days other than Saturday and Quiz in Saturday). CM: 2 min. CM: 3 min.	L/K
8.30	Entertainment (TV Play Film). CM: 2 min. CM: 3 min.	F
9.00 pm	News.	FO
9.10	Overseas News. Sport News.	F
9.15	News Commentary. CM: 3 min.	L
9.25	Information. CM: 2 min.	O
	Weather Forecast, Tomorrow's Programmes.	O
9.30	National Anthem and Close Down.	F

Note: SL = Slide, O = Opaque, F = Film, L = Live, K = Kinescope (including those prepared by both local and other stations), OB = Outside Broadcast. CMs shall be given using mainly films and slides.

Symbols such as F/K and L/K indicate the method to be adopted in compromising between the adjustment of studio and tele-cine equipments and the circumstances of performers, etc.

Sunday

4.20 pm	Test Pattern.	
	Signature Film.	
4.30	Relay of Sports Games, or Cine-film.	CM: 2 min.x4 CM: 3 min.x4
6.30 pm	Lection of Holy Koran.	
6.35	News.	
6.45	Information Bulletin, Weather Forecast.	
6.50	Programme for Children (Quizzes, Games, etc.)	

7.00 pm	Local News.	
7.05	CM: 2 min. Programme for Women.	CM: 3 min.
7.30	Political (Talk, Forum).	
7.45	CM: 2 min., Travelogue.	
8.00 pm	Entertainment (Dance, Music, etc.)	CM: 2 min. CM: 3 min.
8.30	Entertainment (Drama, Variety, etc.)	
	CM: 2 min. CM: 3 min.	
9.00 pm	News.	
9.10	Weekly News Review.	
9.15	News Commentary.	CM: 3 min.
9.25	Information	CM: 2 min.
9.30	National Anthem and Close Down.	

The percentages of the programmes classified in accordance with their category and mode are as described in the tables below provided that the programmes are telecasted under the programme schedule given in Table 1.

Table 2. Percentages of programmes classified in accordance with their category

1.	Religions	2%
2.	News and Information	21%
3.	Educational and Cultural	13%
4.	Children and Women	14%
5.	Entertainment	29%
6.	Sports	4%
7.	CM	17%
	Total	100%

Table 3. Percentage of programmes classified in accordance with their mode

1.	Studio	27%
	Live	22% (307 min.)
	Kinescope	5% (75 min.)
2.	Film	38% (528 min.)
	Home	15% (202 min.)
	Foreign	23% (326 min.)
3.	Outside Broadcast (Live)	4% (100/2 min.)
4.	From other stations (Kinescope)	14% (190 min.)
5.	CM	17% (230 min.)
	Total =	100% (1380 min. = 23 hours)

Detail of Table 3

Mode and category	Total minutes per week	Duration per unit	Number of programmes per week
1. Studio programmes			
Live	307'	(5' x 7)	
Religions	35'	(5' x 7)	
Children	21'	(7' x 3)	
Women	60'	(20' x 3)	
Interview	10'	(5' x 2)	
Sociological			
Economical	40'	(20' x 2)	
Cultural, etc.			
News Commentary	49'	(7' x 7)	
Information			
Weather Forecast	42'		
Tomorrow's Programmes			
Quiz	25'	(25' x 1)	
Drama	25'	(25' x 1)	
Kinescope *3	75'		
Children	10'	(10' x 1)	
Political	15'	(15' x 1)	
Dance, Music	50'	(25' x 2)	
2. Film programmes			
Home	202'		
News	67'	(10' x 6 / 7' x 1)	
Weekly News Review	5'	(5' x 1)	

Mode and category	Total minutes per week	Duration per unit	Number of programmes per week
Local News	35'	(5'	x 7)
Women	40'	(20'	x 2)
Economical, caltural	20'	(20'	x 1)
Travelogue	10'	(10'	x 1)
Cine-film	25'	(100'	x 1/4*2)
Foreign	326'		
Overseas News	30'	(5'	x 6)
Cartoon Film	21'	(7'	x 3)
Women	40'	(20'	x 2)
Travelogue	20'	(20'	x 1)
Feature Film	150'	(25'	x 6)
Cine-film	25'	(100	x 1/4*2)
3. Outside Broadcast	50'		
Sports	50'	(100'	x 1/2*1)
4. Programmes from other stations	190'		
News	70'		
Interview	20'	(5'	x 4)
Dance, Music	100'	(25'	x 4)
5. Commercials	230'		
Total	1,380'		

Note: *1 "1/2" indicates that the programme will be telecasted once for every 2 weeks.

*2 "1/4" indicates that the programme will be telecasted once for every 4 weeks.

*3 Kinescope in studio programme shall be recorded beforehand and be reproduced at on-air time.

§3 Instructions for composing and producing programmes

We recommend the following measures as the instructions for composing and producing programmes under the present Scheme as a result of our investigation and examination to the current circumstances of programme sources and the conditions of producing programmes respectively.

1. Stations Lahore, Dacca and Karachi shall be designated as the programme producing station. Station Rawalpindi shall have only those personnel who are assigned to collect data on the news and political programmes.

2. The studio programmes shall be produced mainly at stations Lahore and Dacca.

Station Karachi shall produce a small number of programmes by itself and be furnished with the greater part of its programmes by stations Lahore and Dacca.

Stations Lahore and Dacca shall interchange their programmes as far as practicable concerning those programmes which will suffer less trouble from the language employed in them, for instance the dance and music programmes, etc.

In producing the programmes, it is necessary to mind specifically in cultivating the performers and writers.

Appearance of any cinema star on your TV stage is not adequate from a viewpoint of producing the programmes, because the performance fee of a cinema star in your country is expensive and employment of such star will result in an increased producing cost of programme. Fewer sources of the performers in your country also lead us to such thinking that it is desirable to take appropriate measures for

protecting those talents of actors, actresses, singers, dancers, etc. who are under fosterage for the TV stages at the Art Councils and etc. in various places by expediting the assistance and guidance to their performances.

The same is true about fosterage of the TV scenario writers, since there are fewer men of talent available as the writers as seen from the actual circumstances of Radio Pakistan, which is at the pains in securing the writers.

3. As for producing the news programmes, it is necessary for the Corporation to complete its own independent production system because the news reels produced by the news productions in your country are extremely few (One 10-min. reel per week as the products by the Department Films and Publications and nine 10-min. reels per year as the products by the Eastern Pakistan Film Development Corporation) and, therefore, are beyond their faculty in meeting the demand.

The independent production system for the news reel mentioned above shall be set up as follows at its initial stage:

The staffs for collecting, editing and broadcasting data on the news and for developing and printing the films shall be assigned to stations Lahore, Dacca and Karachi.

Only the staff for collecting data on the news shall be assigned to station Rawalpindi and development and editing of the films produced by these staff shall be conducted at station Lahore. (As to detail of the news staff, refer to table of staff personnel annexed.)

The news production stations shall endeavour to replete their news programmes by interchanging the news reels produced by them one

after another as well as to fill up the shortage of the film reels through acceptance of the reels produced by the DFP.

As for the overseas news, it is desirable to obtain the film reels of overseas news on the free cost basis through supply of the reels of domestic news to the foreign news agency concerned. If there is not sufficient quantity of the domestic news reels available for such interchange, however, it will be unavailable for the Corporation to purchase the required news reels.

4. Due considerations given to the following facts will facilitate producing the film programmes:

The films produced by the domestic film productions, irrespective of the documentary and feature ones, may be televised as the TV programmes.

The persons concerned with production of cine-films are positive in producing the TV films and the films produced by them may be used as the TV programmes.

The products of the TV and documentary films by foreign film productions amount to an extremely vulky volume and, therefore, may be available easily.

Production of the TV and documentary films etc. on the independence basis will make it necessary for the Corporation to spend an enormous expenses as well as to keep a large number of producing staff. Hence, the Corporation shall not undertake production of these TV and documentary films under a policy that it should be furnished with these films by domestic and overseas film productions.

Since the film reels include those which seem not to be qualified as the material of film programme, never fail to pay sufficient care

in selecting them for the film program.

The film reels as the material of the film programmes shall be handled over from one station to another among stations Lahore, Dacca and Karachi to air the same film programme.

The dubbing of the foreign film reels selected as the material of the film programmes into the vernacular such as the Urdu, Bengali and others shall be performed at stations Lahore and Dacca prior to employment of these film reels for telecasting. Such dubbing, however, shall not be conducted at station Karachi because station Karachi shall be furnished with the dubbed films by the other two stations.

5. The programmes to be relayed from other station shall be produced at stations Lahore and Dacca using the kinescope and supplied to station Karachi.

6. The films, slides, etc. to be used for the commercial programmes shall be obtained from the sponsers concerned via their advertising agents. This activity shall be performed mainly at Karachi where most of advertising agents have their offices.

However, it is doubtful that the cine-film productions in your country are powerful enough to reserve their staff and facilities for production of the commercial films when considering from the actual circumstances of these productions in which the staff and facilities are very busy with production of the feature films. For this reason, it will be necessary for the Corporation to take appropriate measures to cope with said situation.

7. In producing the programmes, start with those having the most simple mode and then turn gradually to those having more complex

mode with improvement of the producing technique in both the production and engineering sections and the increasing expenses reserved for producing the programmes.

§4 Programme expenses (23-hours-per-week on-air basis)

In general, the programme expenses of a TV station depends on the mode of the programme, either complex or simple.

At the initial stage of production for the programmes, the programmes shall be produced in the simple mode with due considerations paid for the staff, expenses, facilities, etc. required for producing them.

The annual programme expenses of stations Lahore, Dacca and Karachi estimated on the 23-hours-per-week on-air basis are as listed below. (The figures shown in £ are those which should be funded by the foreign currency.)

Station Lahore :	Rs. 788,700	plus	£26,800
Station Dacca :	Rs. 788,700	plus	£26,800
Station Karachi :	Rs. 539,600	plus	£26,800
Total :	Rs. 2,117,000	plus	£80,400

Note: No expenses for the dubbing of imported films and relaying of other station programme are included in the programme expenses of station Karachi.

Also no expenses for the commercial programmes are included in the above programme expenses under a policy that the commercial programmes shall be funded by the sponsors of the programmes via their advertising agents.

The details of programme expenses are as described below.

Each station, Lahore, Dacca and Karachi

1. Detail of studio programmes (All figures in average unit and annual cost columns are in Rs)

Programme	Duration (in min.)	Number of programmes per year	Average unit cost	Annual cost
Religions	5	365	40	14,600
Children	7 10	156 52 } 208	250	52,000
Women	20	156	300	46,800
Interview	5	104	60	6,240
Caltural	20	104	250	26,000
Political	15	52	250	13,000
Dance, Music	25	156	900	140,000
Drama	25	52	1,200	62,400
Total				361,440

2. Detail of news and information programmes (all figures in average unit and annual cost columns are in Rs. The figures given in £ are those which should be funded by the foreign currency.)

News programme

Produced programmes given as their annual running minutes	Unit cost per minute	Annual cost
3640	10	36,400

Expenses for purchasing raw film

(19,650 feet of 16mm film, including both the negative and positive ones) £ 4,732

Programme	Duration (in min.)	Number of programmes per year	Average unit cost	Annual cost
News commentary	7	365	120	43,800
Information Weather Forecast Programme Rundown	6	365	20	7,300
Total				87,500
			plus	₺ 4,732

3. Detail of OB programmes (Figures in average unit and annual cost columns are in Rs.)

Programme	Duration (in min.)	Number of programmes per year	Average unit cost	Annual cost
Sports	100	26	650	16,900

4. Detail of film programmes

(1) Imported films (All figures in the average and annual lease rate columns are in ₺ and are those which should be funded by the foreign currency.)

Programme	Duration (in min.)	Number of programmes per year	Average unit lease rate (in ₺)	Annual lease rate (in ₺)	Expenses for dubbing and transportation, customs, commission. etc. (in Rs.)
Cartoon Film	7	156	15	2,340	31,200 (Rs 200 x 156)
Women	20	104			
Educational, Cultural	20	52	20	5,200	20,800 (Rs. 80 x 260)
Travelogue	20	104			
TV Film	25	312	36	11,232	156,000 (Rs. 500 x 312)

Programme	Duration (in min.)	Number of programmes per year	Average unit lease rate in £	Annual lease rate (in £)	Expenses for dubbing and transportation, customs, commission, etc. (in Rs.)
Cine-film	100	13	80	1,040	11,700 (Rs. 900x13)
Overseas News	5	312	4	1,248	12,480 (Rs. 40 x 312)
Total					£21,060 and Rs. 232,180

(ii) Home films (all figures in the average and annual lease rate columns are in Rs.)

Programme	Duration (in min.)	Number of programmes per year		Average unit lease rate	Annual lease rate
Women	20	104		150	15,600
Educational, Cultural	10	52	104	150	15,600
Travelogue	20	52			
Cine-film	100	13		1500	19,500
Total					Rs.50,700

5. Expenses common to all programmes for composing and producing them:

Rs. 40,000 and £ 1,000

Total Rs. 40,000 and £ 26,792

Note: The categories of all items of expenditure included in each programme cost are as specified in the corresponding items of the Scheme A.

Section 3. Organization

§1 The organization of the headquarters and stations under Scheme B shall be based on the scale reduced further from that of the organization provided by Scheme A.

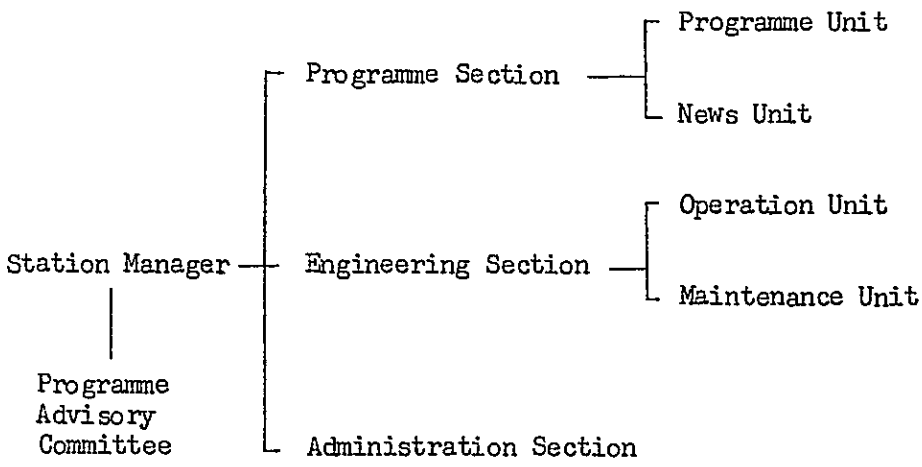
All top managements, sections and others in the organization, however, shall privide approximately the same functions as those provided by the corresponding echelons of the organization of Scheme A.

The organization of the headquarters and stations under Scheme B are as shown below.

<u>Headquarters:</u>

Board of Directors ——— Secretariate
|
Central Programme Advisory Committee

<u>Stations Karachi, Lahore and Dacca</u>



News Correspondent : Rawalpindi

§2 The staff personnel for the programme, engineering, commercial and administration sections are as shown in the following table.

Staff personnel of programme section

Staff	Stations Lahore & Dacca	Station Karachi
Programme director	1	1
Producer	3	2
Assistant producer	6	4
Announcer	3	3
Script writer and translator	2	1
Designer	1	1
Make-up and costume specialist	3	3
Stage properties specialist and props	2	2
Caption writer	1	1
News editor	1	1
Assistant news editor	1	1
News script writer	2	2
News film editor	1	1
News cameraman	2	2
Assistant cameraman	1	1
Total	30	26

Staff personnel at Rawalpindi

News cameraman	1
Assigned correspondent	1

Staff Personnel of Engineering Section

	Each station, Lahore and Dacca	Karachi	Remarks
Chief Engineer	1	1	
Technical Director	2	2	
Video Switcher	2	1	
Cameraman	4	2	
Audio Mixer	2	2	
Mic-Boom Operator	1	1	
Lighting Director	1	1	
Light Operator	2	2	
Telecine Operator	2	2	
Film Develop	2	2	
Maintenance	4	3	
Total	23	19	

Management and Office Staff

	Each station, Lahore and Dacca	Karachi
Station Manager	1	1
General Affair	2	2
Finance	2	2
Stenographer	1	1
Driver	2	2
Guard	3	3
Messenger	1	1
Commercial Service	-	2
Total	12	14

Section 4. Finance

In Scheme B the transmitters, studio facilities and others amount to Rs 8,800,000 (£660,000) which should be funded by the foreign currency. While, the station building costs Rs. 5,320,000 (This figure, however, includes no expenses for the Dacca station building because the Dacca station will be operated in a leased building).

The annual running expenses of the 3 stations will amount to Rs. 8,666,000, out of which Rs. 3,205,000 (£240,400) should be funded by the foreign currency.

The detail of the total running expenses are as listed below.

Annual running expenses of each station, Lahore, Dacca and Karachi

Programme cost	Rs. 3,187,000, including Rs. 1,067,000 (£80,000) which should be funded by foreign currency.
Engineering expenses	Rs. 1,301,000, including Rs 881,000 (£ 66,100) which should be funded by foreign currency.
Personnel expenses	Rs. 960,000 [Rs 4,800 (average annual pay per person) x 200 (Person)]
Administration and business expenses	Rs. 800,000
Commission to revenue from advertising sources	Rs. 900,000 (15% of annual revenue from advertising source of Rs. 6,000,000.
Rent for leased building (Dacca station building)	Rs. 84,000 [Rs. 700 (Rent per month) x 12 (months)]

Depreciation expenses: Building	Rs. 177,000 - Rs. 76 per ft^2, including expenses for air conditioner. Total floor space of Lahore and Karachi station buildings .... 70,000 ft^2 construction expenses of Lahore and Karachi station buildings .... Rs. 5,320,000 Durable years of the buildings .... Regarded as 30 years.
Facilities and equipments	Rs. 1,257,000 (£94.300) Facilities and equipments ..... Rs 8,000,000 (£600,000) Transportation and installation work expenses ..... 10% of facilities and equipment Total expenses for facilities and equipments including their transportation and installation work ..... Rx. 8,800,000 (£660,000) Depreciation period .... Regarded as 7 years.
Total	Rs. 8,666,000, including Rs. 3,205,000 (£240,400) which should be funded by foreign currency.

Note: The above expenses include no rates of interest.

Under the Scheme B the Corporation will operate the three TV stations having the urban areas of three cities respectively as their service area. This will enable the Corporation to suffer less from the reduction of its annual revenue for the reduction of its annual expenditure made rather largely under the present Scheme.

The revenues of the Corporation estimated for four years after its inauguration are as follows:

Running period after inauguration (in year)	Number of TV receivers	Revenue from Receivers fee (in 1,000Rs.)	Revenue for advertising (in 1,000Rs.)	Total revenue (in 1,000Rs)	Balance (in1,000 Rs)
0 - 1	10,000	500	4,000	4,500	-4,200
1 - 2	30,000	1,500	6,000	7,500	-1,200
2 - 3	60,000	3,000	8,000	11,000	+2,300
3 - 4	90,000	4,500	10,000	14,500	+5,800

Note: 1. The receiver fee is assumed to be Rs. 50 per TV receiver.

2. The balance is that of the annual revenue, which is estimated to be Rs. 8,666,000, stricken against the annual running expenditure.

The revenues from the advertising sponsers shown in the above table are estimated from the following assumptions:

1. The two pilot stations are expected to sell together the spot commercial ad. costing Rs. 5,000 per day. Under the Scheme B, three stations Lahore, Dacca and Karachi are expected, to sell together the spot ad. costing Rs. 7,500 per day at the initial stage of their TV service.
2. The three stations are also expected to sell the commercial ad. on the time basis of one hour per day. The rate for this ad. is estimated to be Rs. 2,000 per half hour.

Table 3 (Part 4)

TV Transmitter and Studio (Dacca & Lahore)

Item	Description	Q'ty	Price(CIF in Stg £)
1	Transmitter Equipment	1	11,656
2	Antenna Tower (150 feet)	1	2,876
3	A Studio Equipment (2000 ft^2)	1	35,161
4	B Studio Equipment (800 ft^2)	1	14,243
5	Telecine Equipment	1	44,219
6	Master Control (Including News Stadio)	1	18,641
7	Other Equipment	1	35,598
8	Remote Pick up Equipment	1	43,809
	Total for one Station		206,203
	Grand Total for Two Stations		422,406

(Note 1) Other Equipment

Including:

Inter Com. Equipment

Measuring Equipment

Installation Material

Spares etc.

Table 3 (Part 4)

TV Transmitter and Studio (Karachi)

Item	Description	Q'ty	Price (CIF in Stg £)
1	Transmitter Equipment (Band III)	1	38,477
2	Antenna Guided Tower (300 feet)	1	9.264
3	A Studio Equipment (2000 ft^2)	1	35,161
4	Telecine Equipment	1	44,219
5	Master Control (Including News Studio)	1	18,641
6	Other Equipment	1	33,377
	Total for Karachi Station		179,139

(Note 1) Other Equipment

Including:

Inter Com. Equipment

Measuring Equipment

Installation Material

Spares etc.

(Note 2) In case Band I is adopted, Price of Transmitter is changed as follows.

1.	Transmitter Equipment (Band III)	1	40,106

The above quotation does not include the following:

1) Cost of site survey
2) Cost of installation and supervision of installation of radio equipment, power plant, antenna tower etc.
3) Cost of construction such as radio house, access road, tower foundation, power room etc.
4) Cost of incoming power equipment.
5) Cost of adjustment of apparatus.

Table 2 (Part 4)

Material List of Studio Equipment

Item	Description	Q'ty	
1	A Studio Facilities		
1-1	4 1/2" Image Orthicon Camera Chain one set consisting of:-	2 sets	
	Camera Head	1	
	Camera Control Unit	1	
	Camera Power Supply	1	
	Cradle Head	1	
	50 meter Camera Cable	1	
	Set of power cable assembly	1	
	Intercommunication handsets	3	
	Lens 50mm F1.8	1	
	Lens 85mm F1.9	1	
	Lens 135mm F3.5	1	
	Air balance camera pedestal	1	
	Other equipment & Accessories	1	
1-2	Video Control & Monitoring Equipment		
	Video Switcher	1 set	
	Monitor Line 1		
	Line out 1		
	Mixing Line 1		
	14" Picture Monitor	1	
	Master Monitor (Waveform & Video)	2	
	Power Supply (for Master Monitor)	2	

Item	Description	Q'ty	
	Video Distribution Amplifier	1 set	
	Consisting of:		
	Video Dist. Unit	6	
	Rectifier	1	
	Regulator	1	
	Mounting Shelf	1	
	Coaxial Jack Panel with Accessories	1	
	Camera Consent Board	2	
	Video Control Console	1	
	Director Desk	1	
	Remote Control Panel for Projector	2	
	Relay Power Supply	1	
	Camera Cable (CCU-Consent)	2	
	Chair (for Operator)	2	
1-3	Audio Control & Monitoring Equipment		
	Audio Consolette (input, MIC 3 & High Level 3)	1 set	
	Dynamic head phone	1	
	High Fidelity Loudspeaker	1	
	Monitor Amplifier	1	
	Wall Mounting Loudspeaker	2	
	Microphone (Velocity)	2	
	Microphone	2	
	Boom Stand	2	
	"ON Air" Warning Light	2	
	Wall Receptacle (for Microphone)	4	
	Wall Receptacles (for Speaker)	2	

Item	Description	Q'ty	
	Wall Receptacle (Ann. Box)	1	
	Announce Operation Box	1	
	Audio Jack Panel with Accessories	1	
	Desk	1	
	Announce Table	1	
	Chair (for Announcer)	1	
	Talk Back Microphone	1	
	Microphone Cord 20 meter	3	
	Turn Table	1	
	Tape Recorder	1	
1-4	Lighting Equipment	1 set	
	Dimmer Control Panel		
	Switch Panel		
	Patch Panel		
	Light Equipment		
	Stand		
	Spotlight		
	Other Equipment & Accessories		
2	B Studio Facilities (Lahore, Dacca only)		
2-1	4 1/2" Image Orthicon Camera Chain	2 sets	
	(Used in common with Remote Pick-up)		
2-2	Video Control & Monitoring Equipment		
	14" Picture Monitor	7	
	Video Distribution Amplifier	1 set	
	Consisting of:-		

Item	Description	Q'ty	
	Video Dist Unit	4	
	Rectifier	1	
	Regulator	1	
	Mounting Shelf	1	
	Coaxial Jack Panel with Accessories	1	
	Camera Cable 20 meter	2	
	Camera Cable (CCU-Consent)	2	
	Remote Control Panel for Projector	2	
2-3	Lighting Equipment	1 set	
	Dimmer Control Panel		
	Switch Panel		
	Patch Panel		
	Light Equipment		
	Stand		
	Spotlight		
	Other Equipment & Accessories		
2-4	Audio Control & Recording Equipment		
	Audio Consolette (input microphone 8)		
	Turn Table	1	
	Tape Recorder	1	
	Monitor Amplifier	2	
	Mounting Shelf	1	
	Audio Jack Panel with Accessories	1	
	Wall Mounting Loudspeaker	2	
	Microphone (Velocity)	1	

Item	Description	Q'ty	
	Microphone	1	
	Floor Stand	1	
	Wall Receptacle (for speaker)	2	
	Wall Receptacle (for Microphone)	2	
	Magnetic Recorder	2	
	16 mm Film Projector	1	
	Screen	1	
	Microphone Cord 20 meter	2	
	16mm Film Magnetic Recorder	2	
	Synchronizing Equipment for above	1	
3	Telecine Equipment		
3-1	#1 Film-Slide Vidicon Camera Chain		
	16mm Film Projector	1	
	35mm Film Projector	1	
	Dual Slide Projector	1	
	Optical Multiplexer	1	
	Vidicon Camera Chain	1 set	
	Consisting of:-		
	Camera Head	1	
	Camera Pedestal	1	
	Lens 50 mm	1	
	Wave form Monitor	1	
	Automatic Setup Control Unit	1	
	Automatic Sensitivity Control Unit	1	
	Other Equipment & Accessories	1	

Item	Description	Q'ty	
3-2	#2 Film-Slide Vidicon Camera Chain		
	16mm Film Projector	1	
	Opaque Projector	1	
	Dual Slide Projector	1	
	Optical Multiplexer	1	
	Vidicon Camera Chain	1 set	
	Consisting of:-		
	Camera Head	1	
	Camera Pedestal	1	
	Lens 50mm	1	
	Wave form Monitor	1	
	Automatic Setup Control Unit	1	
	Automatic Sensitivity Control Unit	1	
	Accessories	1	
3-3	Opaque Projector Equipment		
	Opaque Projector Equipment	1 set	
	Consisting of:-		
	Opaque Projector	1	
	Card Holder	1	
	Other Equipment & Accessories	1	
3-4	Video Control & Monitoring Equipment		
	Video Dist Amplifier	1 set	
	Consisting of:-		
	Video Dist Unit	3	
	Rectifier	1	
	Regulator	1	
	Mounting Shelf	1	

Item	Description	Q'ty	
	14" Picture Monitor	4	
	Coaxial Jack Panel with Accessories	1	
3-5	Audio Control Equipment		
	Program Amplifier	2	
	Unit Power Supply	1	
	Monitor Amplifier	1	
	Mounting Shelf	2	
	Audio Jack Panel with Accessories	1	
	Audio Relay Panel	1	
	Audio Monitor Panel	1	
	Wall Mounting Laudspeaker	1	
	Wall Receptacle (for Speaker)	1	
	Cabinet Rack	1	
3-6	Film Editing Equipment		
	16mm Film Projector	1	
	Splicing Machine	2	
	Film Rewinder	1	
	Previewing Screen (for 15 mm)	1	
	Fotage Meter for 16mm Film	2	
	Film Filing Cabinet	2	
	Cleaning Machine	1	
	2" x 2" Slide Cabinet	1	
	16mm Film Reel 1600 ft	15	
	16mm Film Reel 400 ft	15	
	16mm Film Reel 100 ft	20	
	35mm Film Reel 3000 ft	15	

Item	Description	Q'ty	
	16mm Film Leader (White)	1000ft	
	16mm Film Leader (Black)	1000ft	
	Puncher	4	
	Opaque Card	3000	
	Film Basket	2	
	16mm Cine Camera	1	
	16mm Reversal film Processing Machine	1	
	16mm Film Printer	1	
	35mm Film Printer	1	
	Optical Magnetic Projector	1	
3-7	Kine Recorder Equipment	1 set	
4	Master Control Equip.		
4-1	Receiveing Equipment Video Dist, Amplifier	1 set	
	Consisting of:-		
	Video Dist Unit	5	
	Rectifier	1	
	Regulator	1	
	Mounting Shelf	1	
	Stabilizing Amplifier	1 set	
	(with Remote Control Panel)		
4-2	Video Control & Monitoring Equipment		
	Video Switcher	1 set	
	Input 8		
	Line out 3		

Item	Description	Q'ty	
	Master Monitor (Waveform & Video)	1	
	Stabilized Power Supply	1	
	14" Picture Monitor	7	
	Video Dist. Amplifier	1 set	
	Consisting of:		
	Video Dist. Unit	3	
	Rectifier	1	
	Regulator	1	
	Mounting Shelf	1	
	"ON AIR" Monitor Receiver	1	
	Coaxial Jack Panel (with Accessories)	1	
	Chair for Operator	3	
	Video Control Console	1	
	Cabinet Rack	2	
	Relay Power Supply	1	
4-3	Video Sending Equipment		
	Stabilizing Amplifier	1 set	
	Master Monitor (Waveform & Video)	1	
	Stabilized Power Supply	1	
	Video Dist. Amplifier	1 set	
	Consisting of:-		
	Video Dist Unit	3	
	Rectifier	1	
	Regulator	1	
	Mounting Shelf	1	

Item	Description	Q'ty	
4-4	Audio Control Equipment		
	Audio Rack	1 set	
	Consisting of:-		
	Audio Relay Panel	1	
	Line Equalizer	1	
	Pre-amplifier	1	
	Program amplifier	3	
	Monitor Amplifier	2	
	Audio Jack Panel	1	
	Audio Control Console	1	
	High Fidelity Loudspeaker	1	
	Wall Receptacle	1	
	Tape Recorder	1	
	Turn Table	1	
4-5	Synchronizing Signal Equipment		
	Sync. Signal Generator	2	
	Sync. Signal Switcher	1	
	Sync. Dist. Amplifier	2 set	
	Consisting of:-		
	Sync. Dist. Unit	12	
	Rectifier	2	
	Regulator	2	
	Mounting Shelf	2	
	Cabinet Rack	1	
	Relay Power Supply	1	

Item	Description	Q'ty	
4-6	News Studio Equipment		
	Vidicon Camera Chain	2 sets	
	One set consisting of:-		
	View finder	1	
	Camera Head	1	
	Camera Control Unit	1	
	Camera Power Supply	1	
	Camera Cable 15 meter	1	
	Connecting Cable	1	
	Lens 13mm F 1.8	1	
	Lens 25mm F 1.8	1	
	Lens 50mm F 1.8	1	
	Friction Head	1	
	Tripod	1	
	Tripod Dolly	1	
	Other Equipment & Accessories		
	8" Picture Monitor	1	
	Microphone	1	
	Announce Operation Box	1	
	Wall Mounting Loudspeaker	1	
	Monitor Consent	1	
	Wall Receptacle (for Speaker)	1	
	Wall Receptacle (for Microphone)	1	
	Wall Receptacle (for Ann. Box)	1	
	Microphone Cord 20 meter	1	
	Announce Table	1	
	"ON AIR" Warning Light	1	
	Chair for Announcer	1	

Item	Description	Q'ty	
5.	Inter communication Equipment		
	Multi-com. Inter communication Equipment	1 set	
	Studio Intercommunication Equipment	2 set	
6.	Measuring Equipment		
	Video Frequency Sweep Generator	2	
	TV Test Signal Generator	1	
	Square Wave Generator	2	
	Wide Band Cathode-Ray Oscilloscope	2	
	Vacuum Tube Voltmeter	4	
	Circuit Tester	3	
	Audio Test Set	1	
	Hand Meter	4	
	100V Megger	2	
	Movable Stand	3	
	Sync. Mix. Generator	1	
	Special Tool	1	
	RETMA Resolution Chart	2	
7.	Installation Materials	1 lot	
8.	Spare Parts	1 lot	
9.	Spare Vacuum Tubes	1 lot	
10.	Spare Unit	1 lot	
11.	Power Receiving & Power Distribution Board	1 set	

Item	Description	Q'ty	
12.	Remote Pick-up Equipment		(Lahore,Dacca only)
12-1	4 1/2" Image Orthicon Camera Chain	2 sets	
	One set consisting of:-		
	Camera hard	1	
	Camera Control Unit	1	
	Camera Power Supply	1	
	Cradle head	1	
	Tripod	1	
	Tripod Dolly	1	
	50 meter Camera Cable	1	
	100m Camera Cable	1	
	Lens 50 mm F 1.8	1	
	Lens 85 mm F 1.9	1	
	Lens 135 mm F 3.5	1	
	Lens 600 mm F 5.6	1	
	Lens 800 mm F 8.0	1	
	Lens 1000 mm F 11	1	
	Other Equipment & Accessories	1	
12-2	Video Control & Monitoring Equipment		
	Portable Video Switcher	1 set	
	Master Monitor (Waveform & Video)	1	
	Portable Sync. Signal Generator	1	
	8" Picture Monitor	2	
	8" Air Monitor Receiver	2	
12-3	Audio Control Equipment		
	Audio Consolate	1	

Item	Description	Q'ty	
	Microphone (Velocity)	2	
	Boom Stand	2	
	Microphone	1	
	Monitor Speaker	1	
	Program Amplifier	1	
	Inter Communication Equipment	1 set	
	Microphone Cord 100 meter	3	
12-4	Field Lighting Equipment		
	10KW Spot Light	2	
	Stand	2	
	Burn door	2	
	Bulb	4	
	Other Equipment & Accessories		
12-5	VHF Telephone Equipment		
	Mobile Type Receiver 25W	1 set	
	Fixed Type Transmitter & Receiver 50W	1 set	
12-6	Mobile Microwave Relay Equipment		
	Transmitting Equipment	1 set	
	Receiving Equipment	1 set	
	Sound Channel Equipment	1 set	
12-7	TV Mobile Unit	1 set	
	Consisting of:-		
	Mobile van Power Distribution Panel Voltage Regulator		
	Cooling System		

Item	Description	Q'ty	
12-8	Power Supply Equipment	1 set	
12-9	Spare Parts	1 lot	
12-10	Spare Vacuum Tubes	1 lot	
12-11	Spare Unit	1 lot	

Table 1 (Part 4)

Material List of TV Transmitting Facilities (KARACHI)

Item	Description	Q'ty	
	TV Transmitting Facilities	1 System	
	Consisting of:-		
1	800W TV Transmitter	1 set	
2	Output Coaxial Equipment	1 set	
	Consisting of:-		
2-1	VSB Filter	1 ea	
2-2	Bridge Diplexer	1 ea	
2-3	5KW Test Load		
2-4	U-Link Board	1 ea	
2-5	Indoor Coaxial Feeder	1 set	
2-5-1	1 5/8" Straight Transmission Line	1 ea	
2-5-2	1 5/8" 90° Elbow	20 ea	
2-5-3	1 5/8" Straight Coupling	35 ea	
2-5-4	1 5/8" Fixed Hanger	8 ea	
2-5-5	Taper		
2-5-6	1 5/8" Directional Coupler	3 ea	
3	Antenna and Feeder System	1 set	(Band I -2 Bay Superturnstile Band III 6 Bay Superturnstile Antenna Mast Height 300 feet)
3-1	Transmitting Antenna	1 set	
3-2	Transmitting Feeder System	1 set	
	Consisting of:-		
3-2-1	1 5/8" Straight Transmission Line	20 ea	

Item	Description	Q'ty	
3-2-2	1 5/8" 90° Elbow	6 ea	
3-2-3	" Connector For Flang	6 ea	
3-2-4	" Roller Assembly	4 ea	
3-2-5	" Spring Hanger	32 ea	
3-2-6	" Fixed Hanger	4 ea	
3-2-7	" Horizontal Anchor	4 ea	
3-2-8	" Fixed Flange	12 ea	
3-2-9	" Ges Stop	2 ea	
3-2-10	" Bolts, Nuts and Spring Washer	6 ea	
3-2-11	" O-Ring Gasket	6 ea	
3-2-12	580 Dehydrator	1 ea	
4	Transmitter Input and Monitoring Equipment	1 set	
	Consisting of:-		
4-1	Low Pass Filter	1 ea	
4-2	Video Distribution Amplifier	1 ea	
	Consisting of:-	1 ea	
4-2-1	Video Distribution Amp. Unit	1 ea	
4-2-2	Power Rectifier Unit	1 ea	
4-2-3	Power Regulator Unit	1 ea	
4-2-4	Shelf	1 ea	
4-3	Low Frequency Phase Compensator	1 ea	
4-4	Stabilizing Amplifier		
4-5	Limiting Amplifier	1 ea	
4-6	Coaxial Jack Panel	1 ea	
	Consisting of:-		
4-6-1	Coaxial Jack Panel	1 ea	

Item	Description	Q'ty	
4-6-2	Coaxial U-Link Plug	24 ea	
4-6-3	Patching Corde	5 ea	
4-6-4	Termination Plug	5 ea	
4-7	Audio Jack Panel	1 ea	
	Consisting of:-		
4-7-1	Audio Jack Panel	1 ea	
4-7-2	Patching corde	15 ea	
4-7-3	Disconnecting Plug	5 ea	
4-7-4	Termination Plug	5 ea	
4-7-5	Plug		Included in 4.7.2
4-8	Cabinet Rack	3 ea	
4-9	Cabinet Rack Side Plate	2 ea	
4-10	Power Switch Panel	2 ea	
4-11	Shelf	1 ea	
4-12	Termination Plug	15 ea	
4-13	VSB Demodulator	1 ea	
4-14	Transmitter Monitoring Equipment	1 ea	
4-15	Picture and Waveform Monitor	1 ea	
4-16	Low-Voltage Power Supply	1 ea	
4-17	Unit Console	1 ea	
4-18	Unit Console Side Plate	2 ea	
4-19	Monitor Switcher	1 ea	
4-20	Hand Meter	1 ea	
4-21	Monitor Amplifier	1 ea	
4-22	Shelf	1 ea	
4-23	Wall Mounting Load Speaker	1 ea	

Item	Description	Q'ty	
4-24	Wall Receptacle	1 ea	
4-25	Linear Detector for Visual	1 ea	
4-26	Linear Detector for Aural		
4-27	Program Control Panel		
4-28	Transmitter Control Console	1 ea	
4-29	Program Control Console	1 ea	
4-30	Monitor Panel		
4-31	Level Control Panel		
4-32	Unit Console		
4-33	TV Side Band Analyzer	1 ea	
5	Measuring Equipment	1 set	
5-1	Frequency Meter	1 ea	
5-2	Oscilloscope	1 ea	
	(with envelop Adopter)		
5-3	VSWR Viewer	1 ea	
5-4	Wheatstone Bridge	1 ea	
5-5	Vaccum Tube Voltmeter	1 ea	
5-6	Vaccum Tube Checker	1 ea	
5-7	Circuit Tester	1 ea	
5-8	High Voltage Tester	1 ea	
5-9	1000 V Megger	1 ea	
5-10	Grid Dip Meter	1 ea	
5-11	Audio Test Set	1 ea	
5-12	Square Wave Generator	1 ea	
5-13	FM Side Band Analizer	1 ea	
5-14	TV Signal Measurment	1 ea	

Item	Description	Q'ty	
5-15	Wide Band Generator	1 ea	
5-16	UHF Sweep Generator	1 ea	
5-17	Variable Attenuator for Audio	1 ea	
5-18	Variable Attenuator for Video	1 ea	
5-19	Ever right Thermometer	1 ea	
5-20	AC volt Meter	1 ea	
5-21	AC Ammeter	1 ea	
5-22	DC Volt Meter	1 ea	
5-23	DC Ammeter	1 ea	
5-24	Sliduck	1 ea	
5-25	Thermometers	3 ea	
5-26	Q-Meter	1 ea	
6.	Transmitter Cooling Equipment	1 set	
	Consisting of:-		
6-1	Cooling Blower	1 ea	
6-2	Air Filter	1 ea	
7.	Power Distribution Equipment	1 set	
	Consisting of:-		
7-1	Auto-Transformer	1 ea	}
7-2	Power Distribution Board	1 ea	}
7-3	Automatic Voltage Regulator	1 ea	}
8.	Installation Materials	1 set	
	Consisting of:-		
8-1	Wiring Cable and Wires	1 ea	
8-2		1 ea	
8-3		1 ea	

Item	Description	Q'ty	
9.	Spare Parts	1 set	
	Consisting of:-		
9-1	Spare Parts of Transmitter	1 set	
9-2	Spare Parts of Transmitting facilities except Transmitter	1 set	
9-3	Spare Tube 200%	1 set	
10.	300 feet guided mast	1 set	
11.	Tower Base Foundation Materials	1 set