

(1) Broadcast Standards (I)

i) Program code of ethics:

All broadcasters

--shall not disturb the public security and good morals and manners.

--shall be politically impartial.

--shall broadcast news without distorting facts.

--,as regards controversial issues, shall clarify the points of issues from all angles possible.

ii) Harmony among programs:

All broadcasters shall provide cultural programs or educational programs as well as news programs and entertainment programs, maintaining harmony among broadcast programs.

iii) Campaign broadcasting:

In case the broadcaster has allowed any candidate for a public office to broadcast his political views or to make campaign speech, it shall, on application, let other candidates for the same office in the same election broadcast under the same conditions.

(2) Broadcast Standards (II)

i) For domestic broadcast programs,

NHK

--shall exert its possible efforts to satisfy the wishes of the people as well as to contribute to the elevation of the level of civilization by broadcasting rich and good broadcast programs.

--shall keep local programs in addition to national programs.

--shall strive to be conducive to the upbringing and popularization of new civilization as well as to the preservation of the excellent civilization of the country in the past.

ii) For overseas broadcast programs,

NHK shall exert its effort to contribute to the promotion of international friendship and to the development of economic interchange with foreign countries, by cultivating and popularizing the correct recognition of Japan by introducing our civilization, industry and other state of things; at the same time, shall endeavour to give appropriate entertainments to the Japanese people in foreign countries.

(3) Broadcasters' self-regulation of the Broadcast Programs

i) Program Standards:

Broadcasters shall establish the standard for the compilation of the broadcast programs according to the kind of the broadcast programs and to the kind of persons whom the broadcasting is aimed at, shall make it public, and shall compile the broadcast programs in accordance with such standards.

ii) Broadcast Program Consultative Committee

- a. For the purpose of maintaining the appropriateness of broadcast programs, broadcast enterprisers shall have the Broadcast Program Consultative Committee.
- b. The members of the Committee shall be nominated by broadcasters from among the persons of learning and experience.
- c. When broadcasters intend to establish or change the Standards of Broadcast Programs and the Basic Plan for the Compilation of Broadcast Programs, they must consult the Committee.
- d. The Committee shall reply to the inquiry from the broadcasters and may, if he deems necessary for the maintenance of the appropriateness of broadcast programs, state their views to the broadcasters.
- e. Broadcasters shall, in case the Committee replied or stated their views, take necessary action in deference to such replies or statements.

6 Cablcasting

(1) Cable television (CATV)

CATV in Japan started in 1955

Most of them are engaged in retransmission of TV programs within the area i.e., retransmission of TV programs of the local TV broadcasting stations in order to cope with poor reception arising from the lack, or inferior quality, of TV broadcasting signals in remote or mountainous regions, or from interference by the reflection and shadows caused by tall buildings and other constructions in urban areas.

There are also some CATV systems engaged in retransmission out of the area, i.e., retransmission of TV programs of distant TV broadcasting stations whose service areas do not include the area where the CATV system in question is situated, in order to make more TV programs available.

Furthermore, there are also a few systems engaged in broadcasting original programs, including local news, information from local public offices and other information useful to daily life.

In recent years, encouraged by the development of communication satellites and the progress of information and telecommunication technology, many enterprises have been planning the construction of CATV systems with large-scale, multi-channel. CATV in Japan is in a new phase of development.

At present, the number of the CATV systems is 42,190, of which 633 are large systems permitted to establish by the Minister of Posts and Telecommunications, and 174 are systems broadcasting original programs. The number of CATV subscribers is 4,935,109. Most of the CATV systems are run by private or local organizations.

(2) Cable Sound

Cable sound was first started as a means of jointly listening to radio; subsequently, it has been in increasing use in rural areas as a community news service, and in urban areas as a music service to pubs and restaurant and a street advertising service--Total number of these facilities is 11,028.

7 Government Organization for Broadcasting Administration

The regulation of radio waves including broadcasting is under the jurisdiction of the Ministry of Posts and Telecommunications. In July, 1984, the structure of telecommunication administration was reorganized into three Bureaus, i.e. Communications Policy Bureau, Telecommunications Bureau and Broadcasting Bureau. The personnel thereof are about 2500 including that of Radio Research Laboratory, Training Institute of Telecommunications Administration, and the 10 regional Bureau of Telecommunications and Okinawa Telecommunication Regulatory Division.

The business for the regulation of broadcasting is conducted in the Broadcast Administration Bureau of the Ministry. The Broadcasting Bureau consists of the following divisions.

- General Affairs Division: Coordination of the important problems of the bureau; legal, budgetary and personnel matters of the bureau.
- Planning and Policy Division: Planning of broadcasting system; review and drafting of frequency allocation plan for broadcasting; investigation of matters related to promotion and prevalence of broadcasting. Matters related to measures to remove reception difficulty.
- Administration Division: Matters related to the "Basic Standards for the Establishment of Broadcasting Stations", Matters related to licensing and operation of broadcasting station, supervision of NHK and the University of the Air Foundation, and others.
- Engineering Division: Technical matters related to licensing and operation of broadcasting stations, and others.
- Cablecast Division: Regulation and supervision of cablecast systems and cablecast services

The Radio Regulatory Council is attached to the Ministry. It acts as a consultative organ of the Minister. Its function is to examine and investigate matters related to the regulation of radio waves and broadcasting, to make recommendations to the Minister, to examine the complaints lodged against the Minister, etc. The Minister must refer the matter to the Council before he grants licence to the applicant for a radio or broadcasting station.

In the field of cablecast, the Telecommunications Council plays the same role as the Radio Regulatory Council excluding the examination of complaints lodged against the Minister.

The Telecommunications Technology Council is also attached to the Ministry. Its function is to examine and investigate matters related to the technical aspects of telecommunications.

(APPENDIX)

1. Latest Figures

(1) Frequency (As of March, 1988)

Radio	AM	526.5 kHz -	1,606.5 kHz	
	FM	76 MHz -	90 MHz	
TV		90 MHz -	108 MHz (VHF)	3 chs.
		170 MHz -	222 MHz (VHF)	9 chs.
		470 MHz -	770 MHz (UHF)	50 chs.
		12,092 GHz -	12,200 GHz (SHF)	18 chs.

(2) Number of Broadcasters (As of March, 1988)

		NHK	The University of the Air	Commercial (No. of broadcast Stations)
Television	Comprehensive	o		o
	Educational	o	o	(103)
	Satellite	o (Satellite original program for solving audio-visual difficulties)		Classified into that for the convenience of civilian broadcasts, and comprehensive broadcasts.
Radio	Medium-wave No.1	o		o
	Medium-wave No.2	o		(47)
	Short-wave	o (International broadcasts only)		o (1)
	FM	o	o	o (24)
Television multiplex broadcasts		o (Comprehensive, educational and satellite)		o (73)
Character broadcasting		o		o (22)
Total (number of companies)		1	1	149

(3) Number of Broadcasting Stations (As of Feb., 1988)

	Radio				Television				Grand Total					
	AM		FM	Short wave	Total	VHF		SHF						
	Net-work 1	Net-work 2				Gene-ral	Educa-tional	Gene-ral		Educa-tional	Gene-ral	Educa-tional		
NHK	188	140	506	1*	835	469	468	3,024	2,949	2	2	3,495	3,419	7,749
The University of the Air Foundation			2		2				2				2	4
Private Broadcasters		210	112	2	324	476		6,017		10		6,503		6,827
Total		538	620	3	1,161	1,413		11,992		14		13,419		14,580

Note: *Overseas Service (General service, Regional service (18 directions), broadcasting hours - 43 hours a day)

(3)-2 Number of TV-Sound Multiplex Broadcasting Stations
(As of Feb., 1987)

NHK	3,495
Private Broadcasters	4,517

Total	8,012
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(3)-3 Number of TV Written Information Broadcasting Stations
(As of Dec., 1986)

NHK	3,495
Private Broadcasters	3,203

Total	6,698
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(4) Number of Receivers

Radio	148,300,300	(Estimated, 1987)
TV	31,954,635	(Number of reception contacts, as of March, 1987)
(Color	29,999,747)	

(5) Receiving Fee of NHK (As of April, 1987)

Monochrome TV	¥680 a month per household
Color TV	¥1,040 a month per household

(6) Broadcasting Hours (Average day)

1) Radio

NHK	AM 1	19.10 hours
	AM 2	18.30 hours
	FM	18.17 hours
The University of the Air Foundation		18.00 hours
Private broadcasters		17.12-24.00 hours (Average 21.59 hours)

2) TV

NHK	TV General	18.30 hours
	TV Educational	18.00 hours
The University of the Air Foundation		18.00 hours
Private broadcasters		7.49-20.51 (Average 18.45 hours)

(7) Finance

NHK	351,096 million (Budget for fiscal 1988)
Private broadcasters in all	1,422,048 million (Income for fiscal 1986)

(8) Personnel

NHK 15,617 (As of March, 1987)

Private broadcasters 27,232 (As of March, 1987)

(9) Number of Cablecasting Systems (As of March, 1987)

Cabletelevision

Permitted Systems (*1) 633 Retransmission only 525

Original program broadcasting 108

Notified Systems (*2) 24,064 Retransmission only 23,998

Original program broadcasting 66

Small Systems not notified (*3) 17,493

Total 42,190

*1 Systems with more than 500 subscriber terminals.

*2 Systems with 51-500 subscriber terminals and those broadcasting original program with not more than 50 subscriber terminals.

*3 Systems with not more than 50 subscriber terminals.

2. Transition of the Number of TV Broadcasting Stations in Japan

Year	NHK			The University of the Air Foundation	Private Broadcasters	Total
	General	Educational	Sub-total			
1952	1		1			1
1953	3		3		1	4
1954	3		3		2	5
1955	6		6		2	8
1956	8		8		4	12
1957	17		17		5	22
1958	30	2	32		30	62
1959	44	2	46		49	95
1960	58	11	69		59	128
1961	87	22	109		87	196
1962	116	94	210		121	331
1963	165	155	320		158	478
1964	258	250	508		265	773
1965	406	394	800		373	1,173
1966	532	519	1,051		463	1,514
1967	657	646	1,303		542	1,845
1968	803	801	1,604		698	2,302
1969	987	987	1,974		908	2,882
1970	1,226	1,225	2,451		1,103	3,554
1971	1,446	1,436	2,882		1,276	4,158
1972	1,680	1,658	3,338		1,421	4,759
1973	1,897	1,873	3,770		1,613	5,383
1974	2,095	2,063	4,158		1,812	5,970
1975	2,297	2,523	4,820		2,026	6,576
1976	2,496	2,453	4,949		2,362	7,311
1977	2,695	2,649	5,344		2,861	8,205
1978	2,892	2,840	5,732		3,486	9,218
1979	3,069	3,011	6,080		4,084	10,164
1980	3,217	3,153	6,370		4,680	11,050
1981	3,354	3,280	6,634		5,167	11,801
1982	3,437	3,360	6,797		5,562	12,359
1983	3,491	3,414	6,905		5,883	12,788
1984	3,497	3,421	6,918	2	6,069	12,989
1985	3,495	3,420	6,915	2	6,263	13,180
1986	3,499	3,423	6,922	2	6,408	13,332

These figures include the relay stations.

EDUCATIONAL TV PROGRAM PRODUCTION AS A MEANS OF COMMUNICATION

(1) TV program is one of the means of mass communication generally categorized personal, group and mass communication. Because the human communication is consist of two ways, we should take care a viewer's reaction as possible as we can, avoiding one way communication.

(2) From very primitive era, we human beings have two kind of communication one is verbal and another audio-visual.

In 16th century, the invention of Printing letter system made remarcable progress our culture.

From 20th century, an audio-visual measure has come to be payed more attention, because of it's efficient way of communication specially in a field of education.

(3) Paticular points of a difference between two methodes of communications printed letter's and audio-visual's.

* Printed letter's --- Deductive way; from abstract to concrete

* Audio visual's --- Inductive way; from concrete to abstract

(4) In the educational communication made by TV program, if directors can construct^{and} arrange the concrete images well and lead viewers inductively to a abstract concept, the program would be very interesting and easily understandable.

(5) Enrichment of TV program.

- 1, To show images vividly which we cannot see usually; such as a bird view shot from high in the sky, a shot in the bottom of deep sea and of deep into the the earth, a shot in a foreign country we can't go easily.
- 2, Utilization of microscope shot, slowmotion picture, freezed picture, computer graphics or digital video effects (DVE).
- 3, Dramatizations using actors, puppets or graphic pictures.
- 4, Utilization of scientific experiments conducted by special-ists in a TV studio.
- 5, To show an event or a phenomena in an extream situation produced by a director.

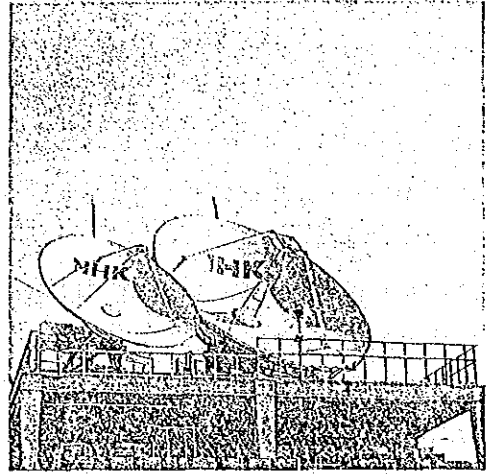
(6) How to make a TV program attractive.

A producing motivation should be a studying motivation of viewer students in a class room.

The motivation stimulates an interesting mind to learn more.

(7) Teacher's role at an utilization of Educational TV program in the class room.

Audio-visual concepts should be translated into a form of letters and fixed as a knowledge by a teacher's guidance.



NHK
SCHOOL BROADCASTS

NHK

NHK's school broadcast programs, with a history of more than 50 years, are now attracting attention all over the world. Visitors to NHK have increased remarkably over the years, and so have letters of inquiry about its school program series and its entire system of program production. To respond to such interest, this booklet presents a survey of NHK's school broadcasting. We would like to point out that this booklet can supplement another NHK publication, "How to Produce Educational TV Programs."

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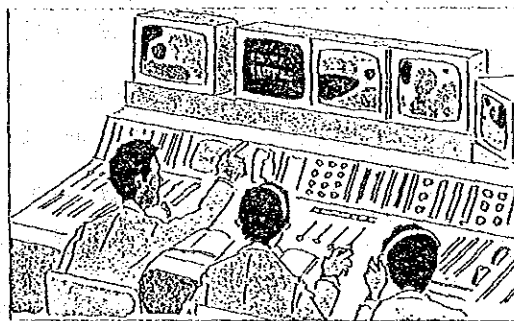
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EDUCATIONAL BROADCASTING BY NHK

NHK is the sole public service broadcasting organization in Japan, and it is financed with fees collected from its audience. Thus NHK's educational broadcasting has a strong public service character, with nationwide networks.

NHK now operates four television channels, including its new satellite broadcasting channel, and three radio networks, including the FM network; educational programs are broadcast mainly on the Educational TV channel (ETV) and Radio Network 2.

Educational broadcasting is prescribed as follows in the Broadcast Law of Japan: "The Corporation (NHK) shall, in compiling and broadcasting educational programs, clearly indicate the persons for whom such broadcasting is intended. Program contents should be systematic and have continuity, as well as being instructive and appropriate for the target audience. At the same time, means shall be provided for the general public to learn the plans for and the contents of such broadcasting in advance. If the program is intended for schools, its contents shall conform to curricular standards as provided in the laws and regulations relative to school education."



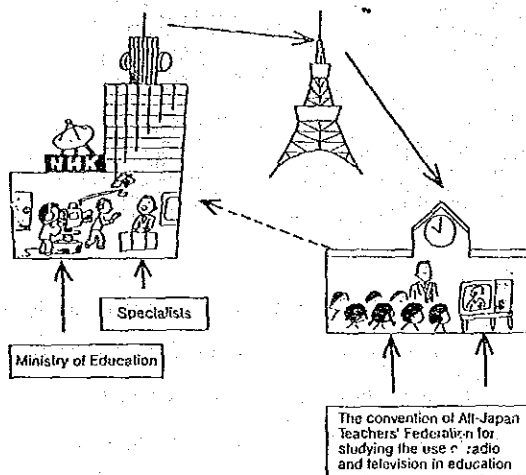
On the basis of these provisions of the Broadcast Law, NHK has established the following standards:

Standards for Educational Programs in General

1. The contents of the programs shall be appropriate and beneficial for a clearly defined target audience.
2. For the best educational results, programs shall be well organized, with continuity as series.
3. Equal opportunity in education shall be promoted through broadcasting.

Standards for School Programs

1. Every effort shall be made to prepare educational material that can be best presented only through broadcasting, in line with the basic national principles of education.
2. Priority shall be given to presenting material in accord with good study attitudes, and the healthy development of children's minds and bodies.
3. Models for classroom teaching shall be presented in the broadcasts.



Standards for Children's Programs

1. With the greatest concern for influence on children, programs shall aim at promoting a rich variety of wholesome sentiments.
2. Programs shall avoid elements that could be imitated by children to their detriment or that could be easily misinterpreted.
3. Programs shall avoid causing abnormal fear in children.
4. No reference shall be made to superstitions that might be harmful to children.

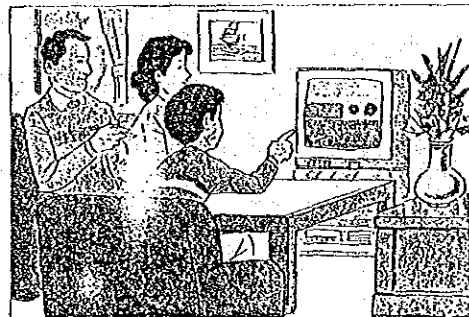
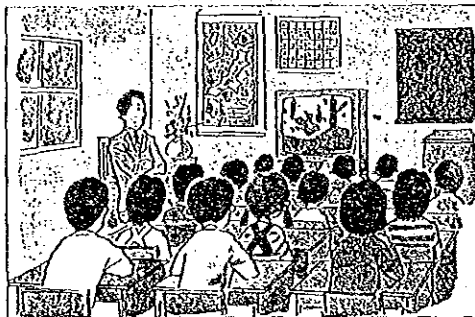
NHK's educational broadcasts can be broadly classified into the following two categories:

1. School Broadcast Programs

Intended for use in classes at kindergartens, nursery and primary schools, and junior and senior high schools, these cover a wide variety of subjects, including science, social studies, arithmetic, Japanese language, music, ethics and so on. In addition, programs designed for teachers and parents provide information on the contents and methods of school education.

2. Life-long Education Programs

Programs for adults promote continued learning in a wide range of subjects, including current affairs, arts and literature, and hobbies.



School programs, in particular, constitute the core of educational broadcasts. NHK's first school radio programs were started in 1935, and now NHK is making every possible effort to improve its school broadcasts in this multimedia age.

School broadcasts are characterized by presentation of teaching materials not available for ordinary classroom lessons. These are compiled under NHK's own curriculum, to make the best use of the audio-visual nature of radio and television. The main goals of school broadcasts are:

1. To arouse children's intellectual interest;
2. To help knowledge sink into children's minds;
3. To help children understand things they have not experienced; and
4. To develop on-going study, linked to subsequent learning activities.

PREPARING PROGRAMS FOR SCHOOLS

Program Planning

Every autumn, broadcasting plans for the coming year are drafted in the School Education Division, after careful study of programs to be newly inaugurated, programs to be revised or discontinued, and means of improving presentation. NHK maintains a number of advisory systems in order to review and improve its plans. In particular, there are the advisory committee system and the program planning committee system.

The advisory committee system is indispensable in finalizing program plans for the coming year and preparing the broadcasting schedules. Every year, school teachers are invited to NHK's local stations, at some 50 different sites throughout Japan, to hold meetings of local advisory committees. At these committee meetings, requests relevant to programs and opinions on the draft plans are presented and discussed.

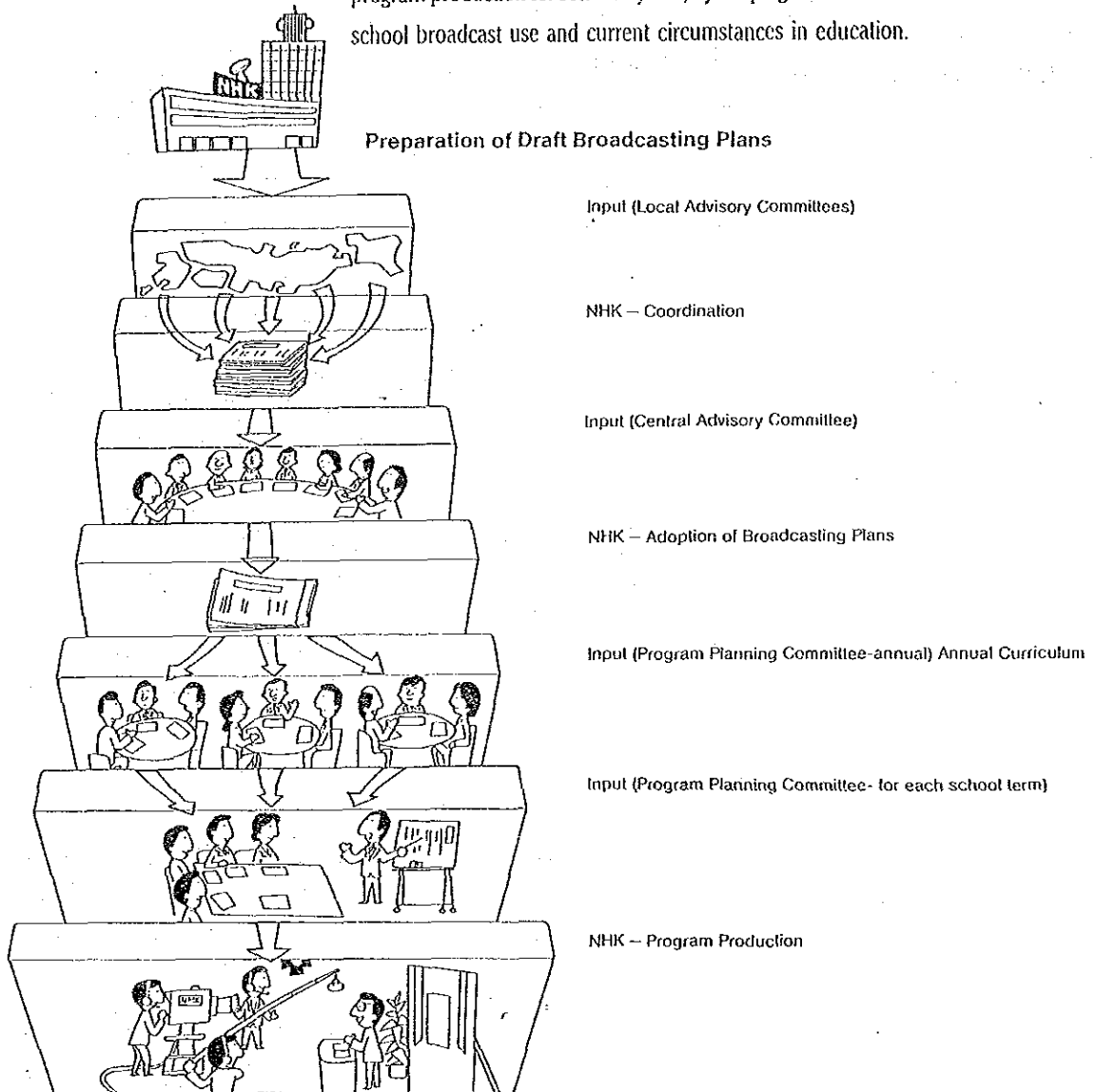
Next, in the School Education Division, written documents containing modifications of the original plans and advisory opinions are prepared on the basis of the views of the local advisory committees. These documents are then presented at the Central Advisory Committee meeting held in Tokyo. This meeting is attended by certain Education Ministry officials in charge of school education, university professors specializing in education through broadcasts, and teachers representing kindergartens, nursery schools, primary schools, and junior and senior high schools. Further opinions and requests are presented and discussed at this meeting.

Broadcasting plans for the following year are thus determined through the local and central advisory committees. While programs have undergone broad changes in the past fifty years, this advisory committee system has remained unchanged throughout the entire period.

For preparing individual programs in line with the broadcasting plans, further advice is obtained from the Program Planning Committee. This committee meets from one to four times a year, attended by teachers making use of school programs who have been appointed as committee members. If the committee meets four times a year, one meeting is held each autumn to discuss the broadcast curriculum for the coming year. At this meeting are discussed problems relevant to program themes, and compilation appropriate to classroom teaching schedules. Then the committee meets again three times during the school year, just before the start of each school term. (In Japan, primary and secondary school terms begin in April, September, and January.)

At these committee meetings, detailed discussions are held on each individual program. The discussions cover selection of concrete program materials, the development and goals of each series, and the method of presentation best adapted for the target age.

This advisory system, original with NHK, has been a main factor in successful program production for some 50 years, by keeping in close touch with the realities of school broadcast use and current circumstances in education.

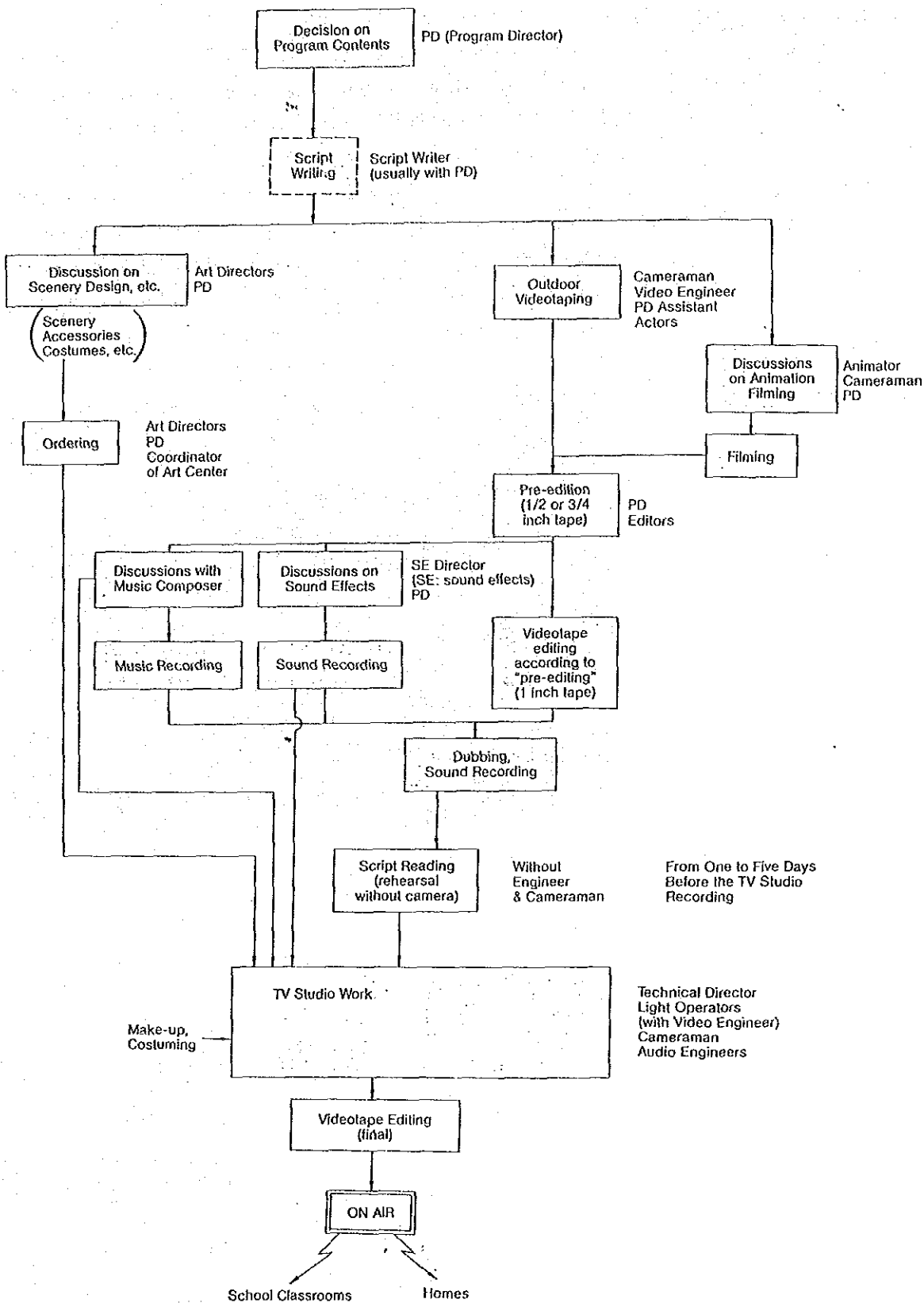


The Production Process

The program production schedule is adopted in line with the broadcasting curriculum determined from input by the advisory committees. While the production period and nature of the work differ according to the program format and the production method, one 15-minute program generally requires from two to four weeks to produce. The number of production staff members also differs depending on the programs; the staff includes from about 10 to 50 persons, in addition to the actual performers. At NHK, full-time personnel serve as directors, technical staff, art directors and the like; and large numbers of production personnel from outside NHK are also employed as musicians, producers of sound effects, art directors, continuity writers, performers, puppet manipulators and handlers of stage scenery and properties. The diagram shows the process of producing a typical school broadcast program.



Dubbing — sound recording in a studio —



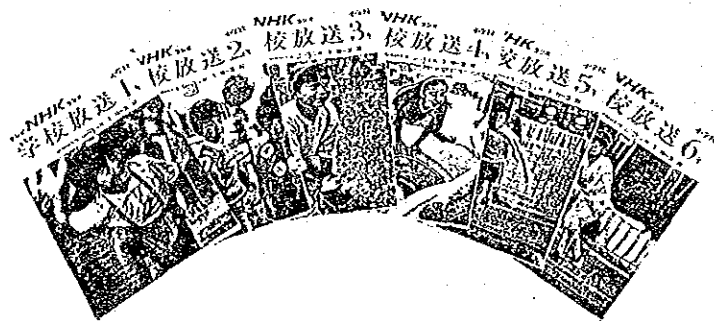
Textbooks

To promote the effective use of school broadcasts, NHK offers two types of reference books for classroom teachers; the first are general manuals for the year, called "planning tables", and the second are texts explaining the contents of the program series in detail.

The general manuals outline the broadcasting curriculum for the year. Preparations for compiling these manuals begin around six months before the programs are to be broadcast, as soon as the broadcasting curriculum plan for the next year is adopted at the Program Planning Committee. The manuals are issued from three to five months before the broadcasts, in order to be ready for use in working out teaching plans before the new school year starts in April.

The texts for individual program series are issued three times a year, before the start of each of the three school terms. These texts provide materials which teachers can use to work out in advance the best ways of using school broadcasts in their classroom lessons. The texts contain the broadcasting schedule for each program, its main themes, a summary of its contents and other points useful to guiding children's learning. They also include photographs, diagrams and other relevant data which allow the teachers to study the program contents in advance from many different angles.

The general manuals are issued in three categories, one for kindergarten, one for primary school, and one for junior and senior high school levels. Texts are issued in nine categories, one for kindergartens, one for each of the six grades of primary school and one each for junior and senior high schools. These books are printed by contracted publishers working closely with NHK. The texts are written by NHK's program directors, school teachers from the Program Planning Committee and professional writers, who share the work as decided through joint consultations. All these reference books are sold at reasonable prices at bookstores throughout Japan.



Textbooks for school broadcasts

Educational TV School Broadcast Schedule for 1987

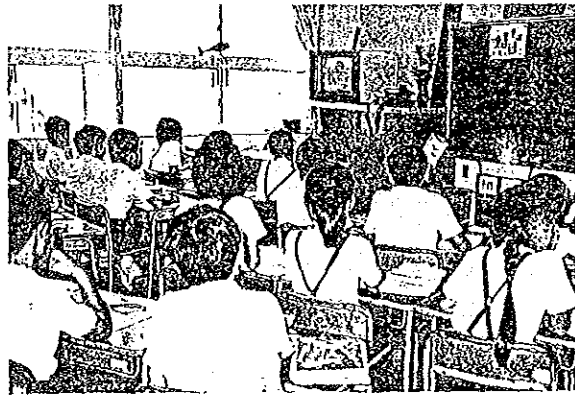
Day Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Day Time	
A.M. 9 15 30 45	Science (P ₃ -2)	Science (P ₃ -1)	The Story Room (P ₃ -L)	Social Studies (P ₃ -1)*	Ethics (P ₃ -L)	Music (P ₃ -1)	A.M. 15 9 30 45	
	Piko-piko-pon (K)*	Puppet Show (K)*	Can You Do It? (K)*	Hey, Hanimarui! (K)*	Friendly Rhythm (K)*	Look at That! (K)*		
	Social Studies (P ₃ -1)	Ethics (P ₃ -L)	Social Studies (P ₃ -2)*	Science (P ₃ -2)*	Music (P ₃ -2)*	Safety Education (P ₃ -L)*		
	Social Studies (P ₃ -4)	Science (P ₃ -3)	Ethics (P ₃ -L)	Music (P ₃ -3)*	Social Studies (P ₃ -3)*	Science (P ₃ -3)*		
10 15 30 45	Music (P ₃ -3)	Japanese Language (P ₃ -1)	Mathematics (P ₃ -1)	Let's All Go For It! (P ₃ -L)	Science (P ₃ -1)*	Mathematics (P ₃ -2)*	10 15 30 45	
	Happy Classroom (For the Handicapped) (P ₃)	Try It Yourself! (For the Handicapped) (P ₃)	Happy Classroom (For the Handicapped) (P ₃)*	Try It Yourself! (For the Handicapped) (P ₃)*	Music (P ₃ -4)*	Japanese Language (P ₃ -1)*		
	Puppet Show (K)	Can You Do It? (K)	Hey, Hanimarui! (K)	Friendly Rhythm (K)	Look at That! (K)	Piko-piko-pon (K)		
	Science (P ₃ -4)	Social Studies (P ₃ -4)	Social Studies (P ₃ -5)*	Science (P ₃ -5)*	Science (P ₃ -6)*	The Human Family (P ₃ -1)*		
11 15 30 45	Music (P ₃ -1)	The Story Room (P ₃ -L)	Music (P ₃ -2)	Mathematics (P ₃ -1)*	Japanese Language (P ₃ -2)*	Let's All Go For It! (P ₃ -L)	11 15 30 45	
	Social Studies (P ₃ -2)	Mathematics (P ₃ -2)	Safety Education (P ₃ -L)	Japanese Language (P ₃ -2)	Social Studies (P ₃ -6)*	We're All Citizens of Earth (P ₃ -H)		
	Social Studies (P ₃ -3)	The Human Family (P ₃ -L)	Science (P ₃ -4)*	Science (P ₃ -3)*	Ethics (P ₃ -L)*	Making the Most of Your Junior High School Days		
	Social Studies (P ₃ -6)	Science (P ₃ -5)	Science (P ₃ -6)*	Ethics (P ₃ -H)*	Social Studies (P ₃ -5)*			
P.M. 0 20	Special Series for Junior High Schools					Notes on My Youth	P.M. 20	
	World Geography	Geography of Japan	Science Div. 1*	Science Div. 1*	Science Div. 2*			
40	Special Series for Senior High Schools						40	
	Biology	Physics	Geology	Geography	Japanese, English and Ethics.			
1 10 30	Special Series for Junior High Schools						1 10 30	
	Science Div. 1	Science Div. 1	Science Div. 2*	Science Div. 2	Computers			
35	The Micro-World						35	
55	Special Series for Junior High Schools						55	
	History I	History II	World Geography*	Geography of Japan*	Citizenship			
Five-minute Dictionary (Mon., Wed., Fri.) Children's Pictures (Tues., Thurs.)								
2 15 30	Ethics (P ₃ -H)	Music (P ₃ -4)	Science (P ₃ -5)	Social Studies (P ₃ -4)	Science (P ₃ -4)		2 15 30	
	Science (P ₃ -6)	Social Studies (P ₃ -5)	Social Studies (P ₃ -6)	The Green Earth (P ₃ -H)	The Human Family (P ₃ -L)			
	Senior High School Course							
History of Japan					World History	Introduction to the Classics	Science in Our World	How People Live around the World
3 15	Friendly Rhythm (K)*	Look at That! (K)*	Puppet Show (K)*	Can You Do It? (K)*	Hey, Hanimarui! (K)*		3 15	
P.M. 7~7.30	Senior High School Course						P.M. 7~7.30	
11~11.30	Senior High School Course						11~11.30	

NOTE: K For Kindergarten and Nursery School
P₃ For Primary School
P₃-L For Primary Lower Grades
P₃-I For Primary Intermediate Grades

P₃-H For Primary Higher Grades
J For Junior High School
1~6 Grade of School
* Rebroadcast

Radio II Network School Broadcast Schedule for 1987

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Day
Time								Time
A.M.							High School Course	A.M. 5.30 6.10
9								9
45	Come Out Stories! (Kindergartens, nurseries)							45
	For older children	For older children	For younger children	For younger children	Intermediate	Intermediate		
10	Japanese Language (P _s -1)	Japanese Language (P _s -2)	Japanese Language (P _s -3)	Japanese Language (P _s -4)	Japanese Language (P _s -5)	Japanese Language (P _s -6)		10
15	Ethics (J)	Music (P _s -5)	Music (P _s -6)	Ethics (J)	Ethics (J)	Music (P _s -5)		15
30	Senior High School Course							30
50	English II	Mathematics II	English II	Mathematics II	English II	Mathematics II		50
	School Music Contest Hour							
11								11
P.M.							Time for Teachers	P.M. 1 2.30
1								4.20
						High School Course	High School Courses	
6						Part-Time High School		6
8								20
8	Senior High School Course							8
9								9

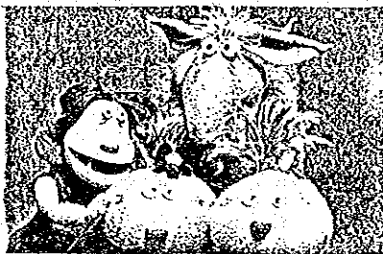


PROGRAMS FOR PRESCHOOL CHILDREN



"Hey, Hanimaru!"

The choice of characters to play leading roles is very important in preparing programs for small children, especially when the programs have definite educational objectives, since the children think and learn along with the main characters. The NHK staff in charge of preschool children's programs have always devoted much time to creating appealing characters. For example, the hero of NHK's program for preschool children titled "Hey, Hanimaru!" is inspired by the charming clay images called haniwa, made in Japan around the beginning of the fourth century A.D. The first part of the hero's name "Hani-maru" is taken from the haniwa, while the last part "maru" was often used in boys' names in old Japan. The premise of the program is that Hanimaru has come by accident from the past to modern times, so he has trouble understanding present-day life and language. In the program, a good-natured middle-aged man and a cheerful young woman try hard to teach Hanimaru how to talk properly, speaking slowly to let him understand. Small children watching this program learn to use more words and correct ways of speaking while enjoying the exploits and games of Hanimaru and his friends. The children also hear explanations of current customs and manners along with the leading character.



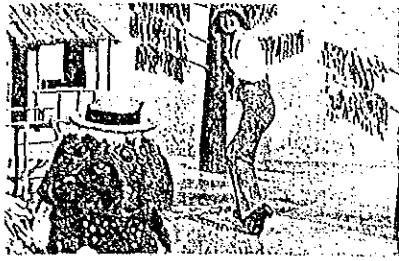
"Piko-piko-pon"

"Piko-piko-pon" is designed to help children improve basic perception of numbers, quantities and diagrams.

The program makes full use of charming dolls assigned specific characters. Because children can identify with the characters, they naturally become familiar with the concepts presented.

Ideally, programs for young children should avoid a rigid learning atmosphere, so the creation of charming characters is especially important.

Fortunately, NHK receives pertinent advice and criticism on its programs from committees of kindergarten teachers and other experts at meetings held several times each year.



Can You Do It?

Besides the above programs, "Can You Do It?" features a young man doing pantomime and a strange hairy being creating various types of plastic arts, and "Friendly Rhythms" is a music program hosted by a prominent Japanese musician. A regular series titled "Puppet Show" presents stories from both Japan and other countries. "Look at That!" helps expand children's minds by drawing their attention to animals, insects, and other common things around them. All these programs are familiar to children throughout Japan.

The programs introduced so far are intended for children between the ages of three and five. A program intended for even smaller children is titled "With Mother," presenting simple stories, songs and exercises. This program is distinctive for being an audience-participation program, in which preschool children are invited into the studio to sing songs and do exercises together. (Applications to participate are flooding into NHK's office, to the gratification of those in charge of this program.)

On radio, a program titled "Come Out, Stories" presents not only folk tales but also original modern children's stories from all parts of the world.

ETV	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
9:15~ 9:30	Piko-piko -pon (Nature)	Puppet Show (Language)	Can You Do It? (Plastic Arts)	Hey, Hanamaru! (Daily Life)	Friendly Rhythms (Music)	Look at That!
10:30~ 10:45	Puppet Show	Can You Do It?	Hey, Hanamaru!	Friendly Rythms	Look at that!	Piko-piko -pon
15:00~ 15:15	Friendly Rhythms	Look at That!	Puppet Show	Can You Do It?	Hey, Hanamaru!	

"WITH MOTHER" (Monday through Saturday)

GTV 9:30~9:55

Rebroadcast

ETV 17:00~17:25



With Mother

PROGRAMS FOR PRIMARY SCHOOLS



About half of NHK's school programs are intended for primary schools. These programs cover the Japanese language, mathematics, science, social studies, ethics, music, and some general subjects not specifically included in the school curriculum. School programs that enjoy the most popularity are those on science, social studies and ethics.

Science programs are presented in six series, for primary grades one through six. Programs for lower primary grades, in particular, are used for classroom work at more than 90% of Japan's primary schools. These programs display rarely obtainable microscopic scenes, show plant growth through time-lapse film, and present experiments that can hardly be undertaken in the classroom. But perhaps a more important reason for their popularity is the fact that, for many years, the NHK staff members have developed approaches which fit in with children's ways of thinking. Exploring what children really want to learn is the starting point of each program. The next task is to work out a sequence of events that will make children wonder what is going to happen next. Each step is translated into an image on the TV screen. But, while each step may be plausible, inconsistencies may arise. Then, efforts are made to adopt a new way of thinking. Thus children can cultivate better approaches to learning. Needless to say, this process must not be contrary to the children's natural thinking process, and the program must be organized to encourage children to want to undertake checking and thinking at each consecutive step.

Programs for primary schools take a wide range of approaches. NHK's "Science Classes for Primary Schools" are presented in six series, for primary grades one through six. These have a history of more than 20 years, and now they are used by almost all the primary schools in Japan. Of course, an enormous amount of data and knowhow has been accumulated over the years, and these are adapted to current needs in program production.

Program about ethical problems, presented in a dramatic form, provide material for class discussions on themes such as friendship, parent-child relations and so forth. Rather than simply laying down rules about right and wrong, such programs are intended to cultivate a proper sense of human relations in society. Social studies programs present facts about the social structure, geographic features and industries of many regions. In particular, documentaries portray field trips to different towns and villages throughout Japan. Programs on history for upper grades use mini-dramas to illustrate major issues in Japanese history. In music programs, first-class artists present performances, to enhance the children's ability to appreciate good music. In mathematics programs, a leading character tries to solve problems on the basis of childish logic. While making blunders, he still improves his ability to work out problems.



Music Program

For the lower grades, a program titled "The Story Room" presents puppet plays based on folk tales and original modern children's stories from all over the world. These aim at enriching the children's emotional sensitivity.

Four series of school programs now being broadcast are not related to specific school subjects. Three of these are documentaries: "Let's All Go For It!" (for lower grades), showing good ways to associate with people and other living creatures; "The Human Family" (for intermediate grades), which takes a scientific approach to the question, "What is a human being?"; and "We're All Citizens of Earth" (for higher grades), taking up broad issues related to nature, society and culture. The fourth series, "Safety Education", presents practical rules for safety, centering on traffic safety rules. In addition, special feature programs not related to school classes are broadcast in large numbers during the summer and other vacation times.

Two series, titled "Happy Classroom" and "Try It Yourself!", are presented for the mentally and physically handicapped. The former tries to stimulate the will to achieve general self-sufficiency in everyday life, while the latter aims at providing children with motivation for solving specific problems with their own hands.

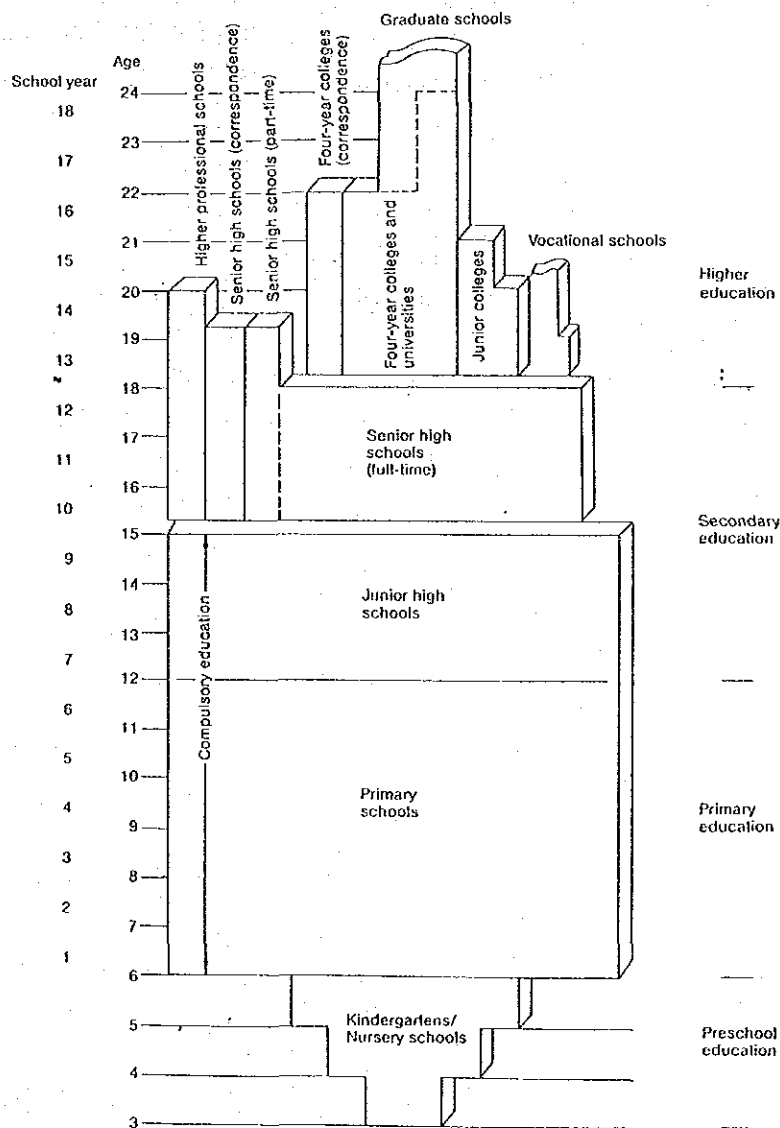
Radio programs for primary schools are Japanese language programs for each of the six primary grades, and music programs for the fifth and sixth grades.

Types of Primary School TV Programs

1. Science: Six series; "First Grade Science Class" through "Sixth Grade Science Class"
2. Social studies: "Let's Go, Nontack" (1st grade)
"Working People" (2nd grade)
"Exploring My Town" (3rd grade)
"Discoveries in Life" (4th grade)
"Reporting on Japan" (5th grade)
"The History of Ways of Life" (6th grade)
3. Music: "One, Two, Bang!" (1st grade)
"Let's Sing!" (2nd grade)
"The Flute Sings" (3rd grade)
"The Joyful Concert" (4th grade)
4. Mathematics: "One-Two-Three Math" (1st grade)
"Easy Math" (2nd grade)
5. Japanese Language: "A-I-U-E-O" (1st grade)
"The World of Words" (2nd grade)
6. Literature: "The Story Room" (lower grades)
7. Ethics: "Growing up" (1st & 2nd grades)
"Lively Classroom" (3rd & 4th grades)
"Jump to Tomorrow" (5th & 6th grades)
8. General subjects:
Human relations and self-discovery –
 "Let's All Go for It!" (1st & 2nd grades)
Natural environment and human relations –
 "The Human Family" (3rd & 4th grades)
Natural and cultural environment
 "We're All Citizens of Earth" (5th & 6th grades)
Safety Education – "Safety Patrol"
9. Programs for the mentally and physically Handicapped Children:
 "Happy Classroom"
 "Try It Yourself"



The Educational System in Japan



PROGRAMS FOR JUNIOR AND SENIOR HIGH SCHOOLS

TV Series

Almost all of the programs for junior and senior high schools are compiled as short series with from four to six programs, each 20 minutes long. These programs do not cover every educational area, since they deal only with subjects and themes that allow full use of the distinctive advantages of television. However, these programs enjoy a high reputation for their quality and depth.

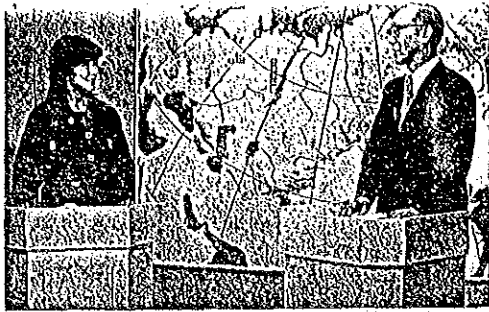
In junior and senior high schools, a teacher generally makes a video recording of a certain program in advance, and this is later used for classroom work, even for two to three years in some cases. This series system allows convenient filing of recorded cassette tapes and retrieving them later as needed.

Science programs in particular fully exploit the characteristics of television by presenting large-scale experiments not feasible in classroom work, special scenes of natural phenomena, and animation and computer graphics to explain basic principles. NHK is preparing fifteen series of science programs for junior high schools in 1986. Their titles include "Motion and Energy," "Power", "Taking Measurements" "The World of Electricity", "Chemical Reactions", "Atoms and Molecules", "Changes in Matter", "Ions", "Exploration of Matter", "The World of Animals", "Exploration of Forests", "Exploration of the Earth", "The World of Plants", "How the Body is Made", "Exploration of the Heavens" and "Changes in Weather".

NHK is also preparing nine series of science programs for senior high schools, chemistry, biology and earth science: "The Science of Motion", "The Science of Waves", "Carbon Compounds", "The Science of the Atmosphere", "The Science of the Ocean", "Exploration of the Japanese Islands", "Brains and Nerves", "How Life Begins" and "The Community of Living Things".



Science Program

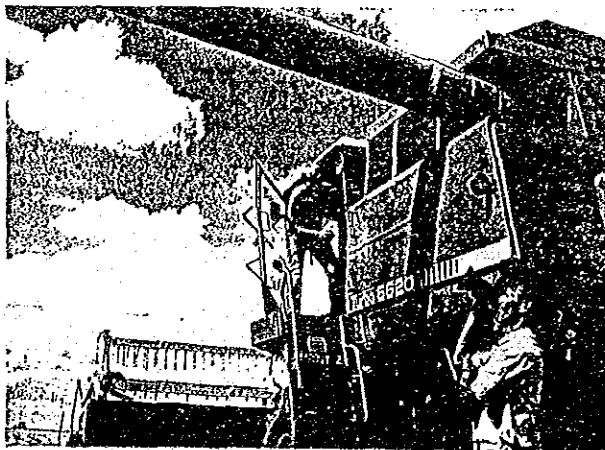


Social studies programs feature presentation of pictorial data and materials on natural features, industries, living conditions, social phenomena and historic relics in various parts of the world. For lessons on the history and geography of Japan, modern society, and some features of world geography, videotaping crews go out to collect the latest illustrative materials. For other purposes, pictorial materials are taken from the NHK Data Center.

The Japanese history series in 1987 for junior high schools consists of 14 programs "Primeval Life", "Ancient Japan in East Asia", "The Heian Capital", "Turbulent Times", "International Trade in the middle Ages", "Men of Culture in the Edo Period", "The Decline of the Feudal System", "Merchant Culture in Full Bloom", "Kyoto - from the End of Shogunate into the Meiji Era", "Civilization and Enlightenment", "Men of Culture in the Meiji Era", "Taisho Democracy", "Junior High Students under Militarism" and "Postwar Development". The historical culture series for senior high schools is "Japanese Architecture".

There is also a series of fine programs on Japanese geography for junior high schools: "The Natural Environment", "City Life", "Industrial Districts", "Agricultural Districts" and "Fishing Districts Face Change".

The parallel series on world geography for junior high schools also has five programs: "Asia", "Western Europe", "The Soviet Union", "North America" and "Latin America". The geography series for senior high school students consists of three programs: "The Earth and its Environment", "The New Asia" and "The New Latin America".



Videotaping in the United States (1984)



Hello, Computers!

The modern society series for both junior and senior high schools consists of four programs: "Life of the Elderly", "Life and Economy", "Society and Environment" and "Laws in our lives".

A series entitled "Hearing a Story: Totto-chan" for both junior and senior high school students aim at improving ability to understand spoken English. This program is quite timely in view of Japan's internationalization efforts.

A series entitled "The World of Japanese Language" is intended to help students understand better the Japanese language and the cultural characteristics that have shaped it.

Finally, another culture series for both junior and senior high schools is on the theme of Noh drama, one of Japan's traditional stage arts.

New computer literacy programs, which are attracting growing attention, have been arranged in a five-part series with a total of 23 programs for junior and senior high schools. "Hello, Computers!" considers what computers can do from various angles, and "The Challenge of Personal Computers" presents practical knowhow for using a personal computer on one own.

"Messages for Your Heart" is a program series about ethical problems for junior high school students. These are presented in the form of either documentaries or dramas, stressing the importance of living one's life fully and earnestly.

In addition, two TV series (of 30-minute programs) are designed for students' extracurricular viewing. "Making the Most of Your Junior High School Days" aims at cultivating a sense of solidarity and sympathy among students. At every broadcasting session, about 50 junior high school students are invited to the studio and encouraged



Making the Most of Your Junior High School Days

to exchange their opinions freely. In between discussions at the studio, there are recorded scenes related to the life of junior high school students in various parts of Japan. The themes for the various sessions include such subjects as personal grooming, pocket money, and social contact between boys and girls. In 1985, this series enjoyed a good reputation as being in tune with the real needs and interests of junior high school students. Beginning in 1986, this series will be re-broadcast on NHK's General TV service, so that the whole family can watch together.

In the series "Notes on My Youth," for senior high schools, people from all walks of life talk about their younger days or develop their own ideas on youth. The aim is to help senior high school students consider their choice of future paths.

Radio Programs on Ethics

One series for each of the three levels of junior high school is presented through the school year. The basic theme, presented in plays 15 minutes long, is how we should make judgments and behave in communities while respecting the rights of others.

The series' titles are "Outdoor Group Notes" (for first-year students), "Akio's Diary" (for second-year students) and "We Do Our Own Thinking" (for third year students).

Senior High School Courses

These made their start as programs for correspondence courses, presented either early in the morning or late at night, but today some of these series are being presented at regular high schools. These are continuous longer series geared to the curriculum for one year. The TV programs (each 30 minutes long) are "Invitation to the Classics," "Mathematics I," "English I," "History of Japan," "History of the World," "The World - Peoples and Their Living Conditions," "Biology," "Physics," "Chemistry" and "Science and Man." The radio programs (each 20 minutes long) are "Introduction to High School Mathematics," "Mathematics II," "English II," "Modern Society," "Ethics," "Music I," "Modern Writing," "Japanese Language I," and "Japanese Language II."

PROGRAMS FOR PARENTS AND TEACHERS

NHK compiles home education programs to help parents bring up healthy, well-adjusted children and guide their studies. For example, the "Mothers' Classroom" series is broadcast daily from Monday through Friday on the Educational Television channel (ETV) from 4:00 to 4:25 p.m., then repeated the following day on the General Television channel (GTV) from 11:15 to 11:40 a.m.

This "Mothers' Classroom" series is intended mainly for mothers with children up through junior high school age. The program aims at providing positive guidelines, and the latest educational information directly usable for child-rearing is offered in detail.

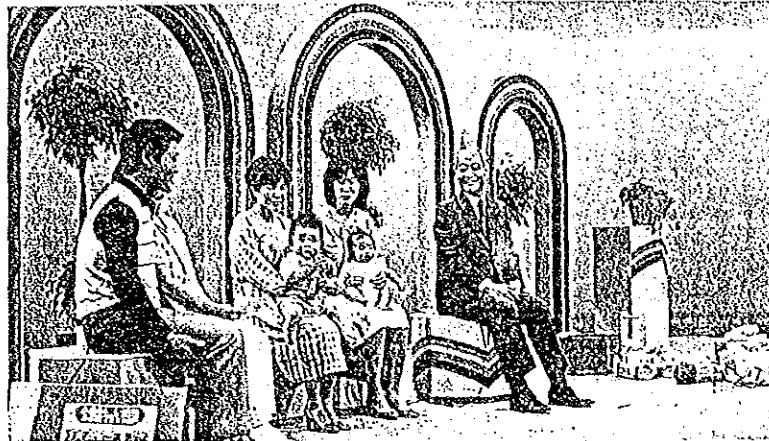
ETV (Time Schedule)

	Mon.	Tues.	Wed.	Thurs.	Fri.
1st week	General information on education			Panel and audience participation	Baby care
2nd week	Practical information on child-rearing			Panel and audience participation	Baby care
3rd week	Examples of family life			Panel and audience participation	Baby care
4th week	Counselling			Panel and audience participation	Baby care

Contents of "Mothers' Classroom"

- First week: Social and educational problems, especially those involving family relationships, are the main subject.
- Second week: Information directly useful in child-rearing is offered, with special emphasis on improving scholastic ability and children's living environment.
- Third week: Through interviews with noted personalities, examples are presented of parent-child, marital and other family relationships.
- Fourth week: In counselling offered by psychologists, problems relevant to child psychology and children's health are considered one by one, and questions from the audience are answered.

Thursday, as a rule, is reserved for presenting an audience-participation talk program. Friday is used for showing young mothers how to care for babies. The feeding, discipline, play and development of typical babies are presented in video recordings, while an obstetrician, a child psychologist and a nursery teacher provide advice on good child-rearing methods.



Mother's Classroom - Baby Care -

Time for Teachers

A refresher course for teachers is presented every Sunday from 1:00 to 2:30 p.m. on the Radio II network. Titled "Time for Teachers," it presents examples of outstanding teaching practices undertaken by teachers in various parts of Japan, information on curriculum and guidance methods useful to teachers, the latest educational news, and reports on seminars sponsored by the Education Ministry and other educational institutions.

USE OF NHK'S TV SCHOOL BROADCASTS: 1953-1987

Start of Educational TV Service

When NHK began public TV broadcasting in Tokyo in February, 1953, programs intended for primary and secondary schools were broadcast at the rate of one a day, for a total of six each week. As such broadcasting developed from 1953 to 1955, priority was given to finding out how television could best be used for subjects in school education; many types of programs were tried, including those involving music, puppet plays, field trips, laboratory experiments, picture drawing and physical education.

In March, 1954, television service was begun also in Osaka, then Japan's second largest city, and next in Nagoya, the third largest city. However, a whole year after its start, schools making use of TV school broadcasting totaled no more than 250, and even after two years, the number was no more than about 1,000. But by 1986, 98% of the 25,000 primary schools in Japan were making use of NHK's TV school broadcasting regularly, working the programs into their own educational plans. The year 1956 saw the start of educational TV programs intended for kindergartens, in addition to the existing programs for primary and secondary schools.

NHK's Four Opinion Survey Networks

Since school broadcasts are intended for specific audiences, NHK is able to survey trends in program use and the reactions of viewers. Giving priority to reflecting the opinions of both teachers and children in its program production, NHK began in 1950 four major approaches for surveying opinions, and these efforts have been continued in essentially the same way up to the present.

The first approach is through the Central Advisory Committee on School Broadcasting. This committee meets regularly every year, attended by the responsible officials of the Education Ministry, specialists in education and psychology, some NHK staff, and school teachers representing kindergartens, primary schools, and junior and senior high schools from eight regional divisions of Japan. Before the meeting of the Central Advisory Committee held in Tokyo, meetings of local (prefectural) advisory committees on school broadcasting are held regularly. The views of teachers in various parts of the country and various categories of schools, summarized at the local committee meetings, are then presented at the Central Advisory Committee meeting, so that the views of local school teachers can be reflected there.

Expansion of Educational Broadcasts

The second approach is the system of commissioning some schools as "school broadcast study schools." This system was first applied to TV programs in 1956; now about 100 schools and kindergartens are commissioned to monitor school TV programs. These schools provide NHK with feedback on the teachers' views and children's reactions. These schools also hold TV-aided classroom seminars, open to the public, once a year. Local school teachers, local education administrators and NHK program producers attend such seminars and exchange opinions on classroom work using TV programs.

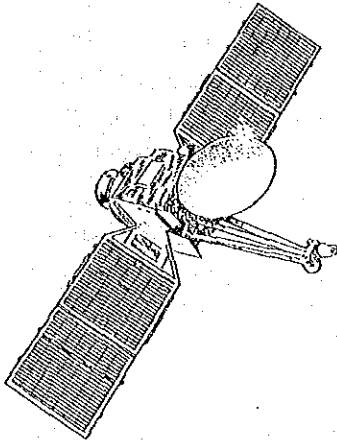
The third approach is nationwide questionnaire surveys covering kindergartens, primary schools, and secondary schools and schools for handicapped children. The first such survey was undertaken in 1950, and they have been conducted annually ever since. (Partial results of these surveys are shown on page 31.) In addition to such nationwide surveys, smaller-scale surveys on school broadcasting are undertaken from time to time to elicit teachers' view on particular topics.

These surveys obtain data on program ratings of radio and television school broadcasting, television receiver, VTR and micro-computer dissemination rates, and reactions to specific programs.

The fourth approach is the National Conference on Educational Broadcasts, held once every year since 1950. Several thousand school teachers come together in this Conference to discuss the contents of school TV programs and exchange opinions on the effective use of school broadcasting.

Two-way communication between the broadcaster and the educators is thus maintained, drawing the two sides closer together in working for common goals.

A number of commercial television services made their start soon after the inauguration of the NHK TV Station in 1953. As commercial television programs – even programs intended for children – contained few if any educational elements, concern began to spread over the possibly harmful effects of such programs on children. Responding to public needs, NHK began in 1959 its channel devoted entirely to educational programs. All school programs were subsequently transferred to this Educational Television channel (ETV).



School broadcasting on the ETV channel is obliged to observe certain rules and conditions. For instance, it must be in accord with the goals of education specified in the Fundamental Law of Education; its programs must be produced in line with the Course of Study prescribed in the School Education Law Enforcement Regulations, and they must be compiled for a specific target audience; the contents must be made public in advance; and, to promote equal opportunity in education, broadcasting must be available everywhere in the country.

On the basis of such guidelines, NHK's school programs have come to be presented as series closely geared to school teaching materials and targeted at specific school grades or levels. NHK's school broadcasts are distinguished by the fact that they are compiled as course programs by groups of specialists, in ways that use to the full the advantages of broadcasting media. In addition, NHK has worked out its own broadcasting curriculum for presenting year-long series. NHK's high-quality course programs have been honored with the grand prize a number of times at the Japan Prize International Educational Program Contest. (See p.34)

Using the Advantages of Broadcasting Media in School Programs

Now school programs must make full use of broadcast media advantages. For instance, they should take advantage of modern media's ability to report events on the scene, even while these are underway. School radio programs included one titled "Events of Our Times," a news feature intended for ten-to-twelve-year old children. School TV programs include "Reports on Japan," a social studies program, also for children age ten to twelve. Every effort is made to include the latest information in these programs. NHK also presents six year-long radio series of Japanese language programs titled "How to Speak Our Language," intended for primary schools. These programs have contributed much to helping children speak standard Japanese correctly throughout the country.

School broadcasting requires the preparation of audio-visual teaching materials in forms easy to understand. This can be especially helpful for teachers of science and arithmetic. In 1959, TV science programs were started for primary grades one through six and for the three years of junior high school. These have contributed greatly to upgrading children's learning ability in science, and they have also proved highly useful in improving science teaching methods. Other programs -- such as the more than ten series on social studies intended for primary and junior high school and three series on ethics for primary grades -- have been used at about 50 to 60 percent of all primary schools in Japan. Thus broadcasts are helping to maintain and boost the educational level throughout the country.

While broadcasting TV programs directly linked to existing school courses, such as those described above, NHK also presents large numbers of programs aimed at opening up new fields. For example, in the 1970's, pollution of air and water by exhaust fumes and industrial wastes became a major social concern. To draw children's attention to such problems, so that they are encouraged to think of solutions at their own level, a TV series titled "The Green Earth" was started in 1975. Other programs help children take a general interest in the world around them, such as "Watching World," which leads children of age six to seven to look more closely at nature and their neighborhood; and "The Human Family," which encourages children age eight to nine to think broadly about human beings and other living things.

Effect of VTR Popularization on School Broadcasting

(N.B. In U.S., VTR = VCR)

The use of videotape recorders or VTRs, starting in Japan in the latter part of the 1950's, greatly altered TV program production methods. In 1963, compact VTRs made their appearance on the general market, so that schools were able to purchase them. VTRs began to be used more widely in secondary schools from around 1980, and the rapid increase in the number of VTRs used in schools is shown in Figure B. As of 1986, more than 98% of Japan's secondary schools owned VTRs, as well as 93% of the primary schools. This has greatly expanded the possibilities for broadcast education.

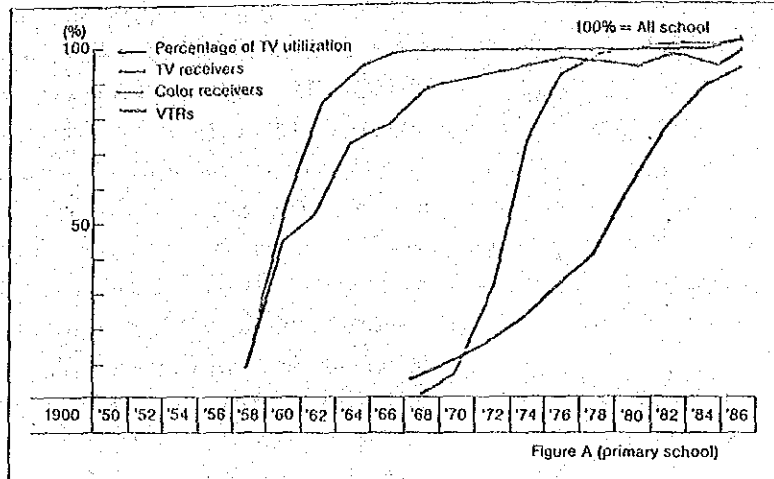
On the basis of surveys, NHK had previously identified four major obstacles to the use of school broadcasts. The first was a shortage of TV receivers and VTRs available at schools. The second was the lack of ways to obtain detailed information in advance on program contents. (NHK has published teacher's manuals and teacher's notes since 1935, when school radio broadcasts were first started, but it has proved impractical to include all the pictorial contents of TV broadcasts.) The third obstacle was conflict between the broadcasting schedule and the individual school schedule. NHK undertakes periodic school schedule surveys to work out the best possible broadcasting schedule, but this schedule cannot meet the needs of all schools. The fourth obstacle was the discrepancy between the annual broadcasting plans worked out by NHK and the teaching plans worked out independently by the schools.

These four factors hampered the use of school broadcasts for many years. But, as shown in Figure A, more than 90% of all Japan's primary schools owned TV receivers by 1975, so that use of TV broadcasts in primary schools notably increased. Then VTRs began to spread among secondary schools, thus eliminating the second, third and fourth obstacles. With the aid of VTRs, secondary schools now show a growing rate of TV broadcast use.

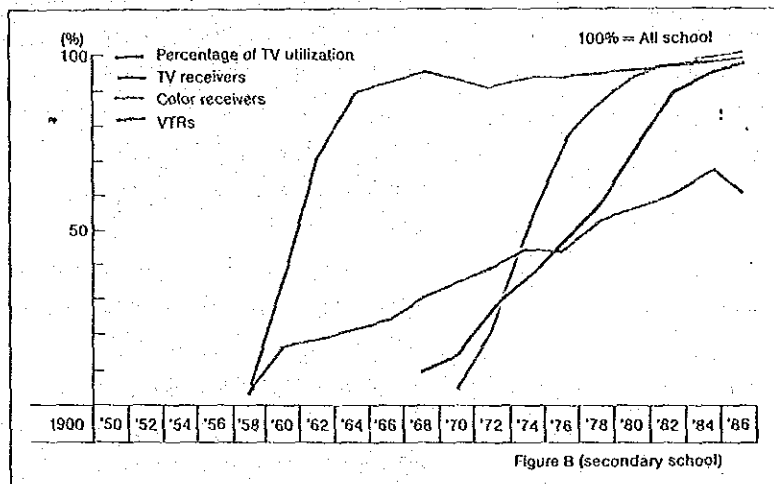
Since 1980, when VTRs came to be owned by more secondary schools, NHK has changed its approach to preparing TV programs for these schools. Rather than long-term series containing more than 30 programs, running from April through March of the following year, NHK now prepares short series of four or five programs on specific topics. Junior high schools can make videotape recordings of such TV programs and then use them whenever needed.

Now teaching materials using video packages, video discs, and computer software are beginning to gain popularity in Japan. With the emergence of such rival teaching materials, NHK is using the results of its surveys and other studies to work out plans for educational TV broadcasting which can meet the challenges of the future.

Use of TV Programs in Primary Schools



Use of TV Programs in Secondary Schools



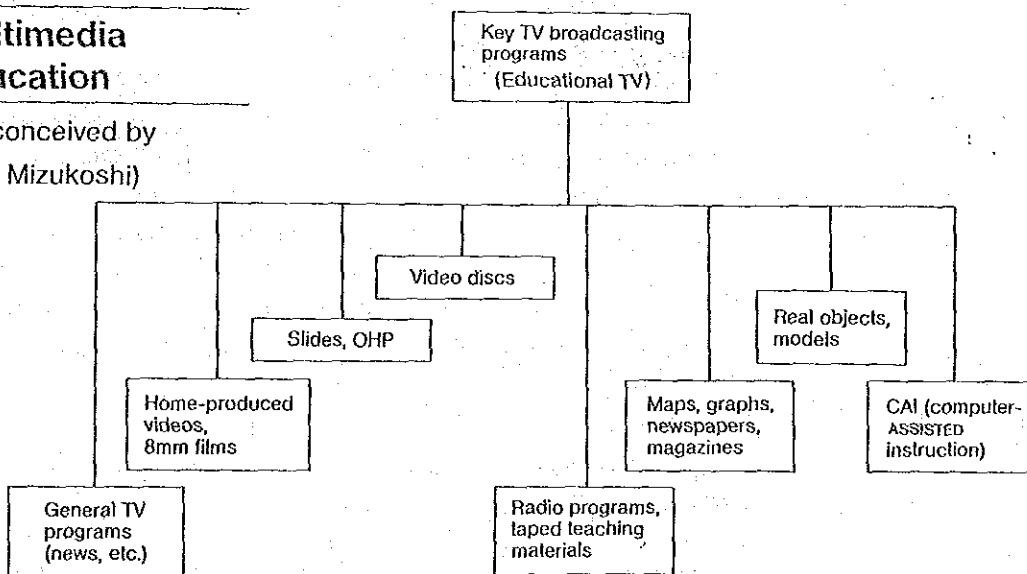
THE MULTIMEDIA FUTURE: TECHNOLOGICAL INNOVATIONS AND EDUCATION THROUGH BROADCASTS

Now, in addition to the existing radio and TV systems, technological innovations have brought various new media such as the satellite broadcasting system, high-definition TV with superior picture quality, cable television, video discs, PCM recorders and CAI (computer-assisted instruction) systems using microcomputers.

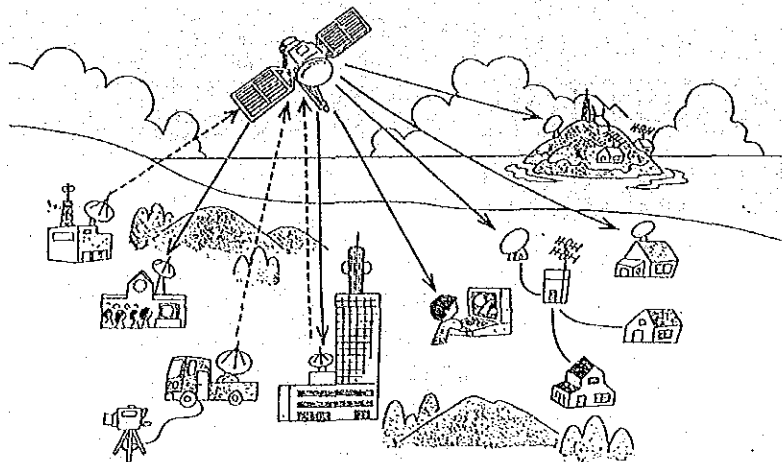
But even with growing competition from these new media, conventional TV broadcasts still have obvious advantages. According to research by Professor Toshiyuki Mizukoshi of Osaka University, broadcast education in the future is likely to use combinations of different media, by linking independent peripheral media around TV. In short, what is envisioned here is that TV school programs, compiled systematically in line with the curriculum, are to constitute the core of modern school and adult education, and general TV programs, video discs and printed media like newspapers and magazines will have a secondary role.

Multimedia Education

(as conceived by Prof. Mizukoshi)



In other words, TV school programs will retain importance as teaching materials for motivating children's learning and thinking, while the new media and printed matter will play the role of assisting concept formation, in order to help expand, fix, and assess knowledge. Prof. Mizukoshi cites, as a concrete example, the case of providing guidance in social studies through the broadcast education study group of a primary school in the city of Kanazawa. In this example, pupils first viewed "The Green Earth," an environmental conservation program intended for the fifth and sixth



Satellite Broadcasting Network

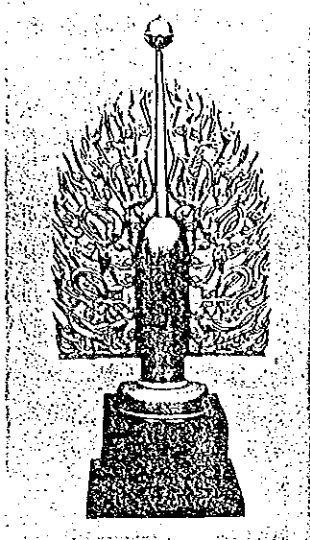
primary grades. Then such learning was reinforced by showing maps and graphs, and by presenting a TV play depicting people devoted to conservation of the environment. In addition, children throughout Japan usually keep a special notebook to record their impressions after viewing programs.

Of course, special skills need to be developed in using all types of media. Formation of viewing ability in TV-aided learning can be classified into these 12 categories:

- (1) The TV pictures can be recognized and memorized.
- (2) The purpose of the program becomes clear.
- (3) The viewer can distinguish changes in time, such as the present and the past, and distinguish a total image and partial image.
- (4) Ability is acquired to follow the steps contained in the program.
- (5) Ability is acquired to point out the most important scenes.
- (6) The organization of the program can be clearly understood.
- (7) The plot of the developing story becomes clear.
- (8) Ability is acquired to grasp the totality of the program and to reconstruct it.
- (9) The viewer becomes able to link the TV experience with experiences prior to viewing.
- (10) The images can be remembered for long periods.
- (11) The viewer can empathize with the emotions in the program.
- (12) Viewing stimulates interest and ambition.

These areas of ability have been mentioned earlier in broadcast education, but when all sorts of media come to compete, these skills assume far greater importance. By the time the children of today become adults, an incomparably greater number of new media will have emerged, and the world is likely to be flooded with information. That is why people must learn to select high-quality, accurate information from the massive quantity available, and to link such information with actual experience. Just as reading ability has been taught in language courses, systematic teaching is now vital in what may be termed visual literacy, or the ability to "read" pictures, from early childhood on. Thus it seems certain that the role of broadcast education will grow more important than ever in the information-oriented society of the future.

THE JAPAN PRIZE INTERNATIONAL EDUCATIONAL PROGRAM CONTEST



Program Categories and Conditions for Entries

The Japan Prize Contest was started in 1965, in commemoration of the fortieth anniversary of broadcasting in Japan, to help improve educational programs throughout the world and to promote international understanding and cooperation. At first the Japan Prize Contest was held every autumn, but after the tenth contest was held in March 1975 as part of functions commemorating the fiftieth anniversary of Japan's broadcasting, the rules were revised to hold the contest every other year.

The Japan Prize Contest is now the sole international contest devoted to educational programs. Every contest is entered by 80 or 90 broadcasting organizations from some 50 countries. The participation of many broadcasting organizations from developing nations is one of its distinctive features, not found in other international program contests.

The Japan Prize Contest is now held for about two weeks in the autumn of every other year at the NHK Broadcasting Center in Tokyo.

There are four divisions for radio and TV program entries; Category 4 was newly established in 1987.

1. Primary Education Category (for children up to age 11)
2. Secondary Education Category (from age 12 to 17)
3. Adult Education Category (age 18 and older)
4. General Educative Programs Category (all ages)

The basic requirements for entries include:

Programs for Categories 1, 2 and 3 must have clear-cut educational objectives, and be installments of series which are systematically organized. Category 4 is open to any type of program which, while not coming within any of Categories 1, 2, and 3, can be recognized as having a high educative value. Independent programs (i.e. these which are not installments in series) are accepted in this new category.

Highlights of the Japan Prize Contest

1965: The first contest was held with 185 programs entered by 70 organizations from 46 countries. Organizations from the developing countries accounted for more than one-third of the total. (This was unprecedented in an international program contest.) The first winning TV program was "Once Upon a Time -- The Calendar of Nature" from Finland, which quietly appealed for the conservation of nature through beautiful images.

- 1966: The winner of the Japan Prize was NHK's "Striving for Independence - The Children's World," a TV adult education program intended for mothers.
- 1967: Entries totaled 202, with a sharp increase in entries from the developing countries.
- 1968: The Jury's Prize was awarded to the entry from Independent Television, United Kingdom, which was a sex education program showing how a child is born.
- 1972: The Japan Prize went to NHK's TV science program for secondary schools titled "Twenty-One Days of an Egg," depicting the process of hatching a chick in great detail. It created a poetic impression rarely found in science programs.
- 1974: The Japan Prize Circulating Library was officially inaugurated in January, and there are now regional library centers in 15 cities in 13 countries: Tokyo, Beijing, Singapore, Bangkok, Kuala Lumpur, Teheran, Munich, Budapest, Nairobi, Honolulu, Austin (Texas), Terre Haute (Indiana), Toronto, Mexico City, and São Paulo.
- 1977: "The Queen Who Cannot Speak" from Finland was awarded The Minister of Posts and Telecommunications Prize. A TV fairy tale using sign language, the program was aimed at enhancing children's understanding of the physically handicapped. At this session, an unusually large number of entries dealt with problems of the handicapped and social welfare.
- 1981: At this 13th contest, an Australian TV entry titled "Time for a Commercial" was awarded The Minister of Posts and Telecommunications Prize. This attracted attention as a program for media education, which has begun to arouse world-wide concern in recent years.
- 1981 - 1985: In the 13th to 15th contests held during this period, we have seen an ever-growing number of excellent programs from developing nations with limited production facilities and from recently developed nations with a comparatively short history of broadcasting; many of these programs are equal in quality to those from the most advanced nations. One typical example was from Brazil, titled "Catavento" (a TV program for preschool education), which won the Hoso Bunka Foundation Prize at the 15th contest.
- 1987: Category 4 was established for general programs for educative value. Besides broadcasting organizations, all types of educational bodies, independent program producers, cable television enterprises, and similar entrants are now allowed to participate in the Contest.

HOW SCHOOL BROADCASTS AID THE DEVELOPMENT OF OBSERVATION ABILITY

By Setsuko Suzuki, Teacher at Sannou Primary School in Tokyo

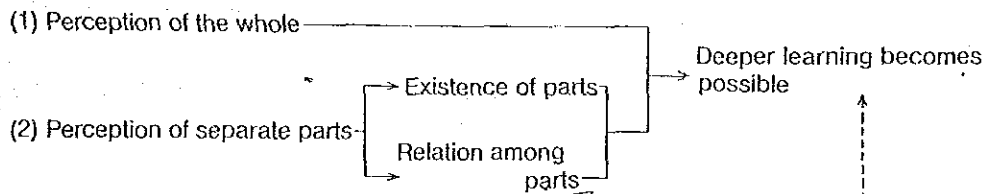
The proper study of science is said to require direct observation of nature, but it can be shown that television helps children to observe nature more carefully, and to improve their powers of observation. A study of this subject was made by comparison of (1) the degree of children's interest in nature before viewing relevant TV programs; (2) their ability to observe actual objects; and (3) the improvement of this ability after seeing relevant programs.

In one research project, first-grade children (six to seven years old) were made to study goldfish with respect to their size, color, shape and ways of swimming. The diagram below shows the development of the children's powers of observation and the effect of television images.

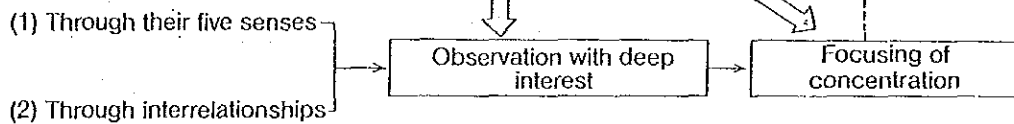
I. Children's Ways of Developing Perception

Methods of observation are developed in both temporal and spatial ways, as shown below:

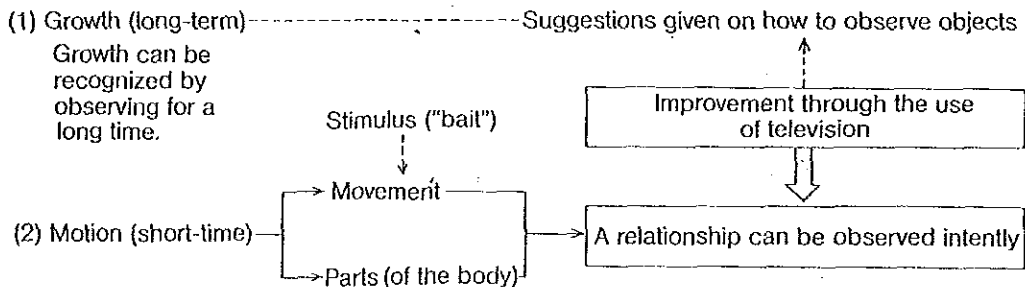
1. Children's spatial perception



II. Children's Power of Observation



III. Temporal Perception (of changes over time)



OVERSEAS COOPERATION BY THE NHK SCHOOL BROADCASTING SERVICE

The NHK School Broadcasting Service has been cooperating with developing countries since the 1960s in helping to expand and improve their educational broadcasts. Besides providing technical cooperation in connection with broadcasting facilities and equipment, NHK also cooperates in training personnel for program production. A number of staff members of the School Broadcasting Service are now engaged in such training both in Japan and abroad. Some staff members help train broadcasting personnel sent from other countries at the NHK Communications Training Institute, while other members have been sent as requested to broadcasting organizations in other countries. So far, staff members have provided training in the production of educational programs at broadcasting stations in many countries including Pakistan, Sri Lanka, Thailand, Indonesia, Singapore, Malaysia, the Republic of Korea, Panama, Paraguay, Mexico and Peru. In addition, some educational programs from Japan are being used in other countries. For example, in Panama are broadcasting NHK's "Science Classroom" for first-graders and another program for preschool children titled "Can You Do It?" Furthermore, many other countries such as Sri Lanka have expressed interested in using Japan's educational programs in the future.

USE OF BROADCAST TEACHING MATERIALS AT EDUCATIONAL FACILITIES FOR JAPANESE CITIZENS LIVING ABROAD

A total of 228,114 Japanese citizens were living abroad as of 1985, and there are now 78 schools for children of Japanese nationals abroad, as well as 109 facilities for supplementary education. These schools and educational facilities, scattered throughout the world, are attended by 38,011 children. NHK's science and social studies programs produced for school broadcasting are being provided to such overseas educational facilities at the rate of several thousand a year.

Inquiries about this manual should be made at:
Educational Program Center of NHK

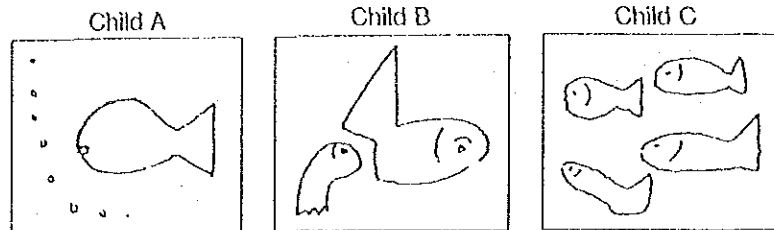
Address: NHK Broadcasting Center
Jinnan, Shibuya-ku, Tokyo 150

IV. Study of Broadcast Impact

Children were asked to draw pictures of goldfish at different stages of learning about them. Three sets of typical pictures are given below.

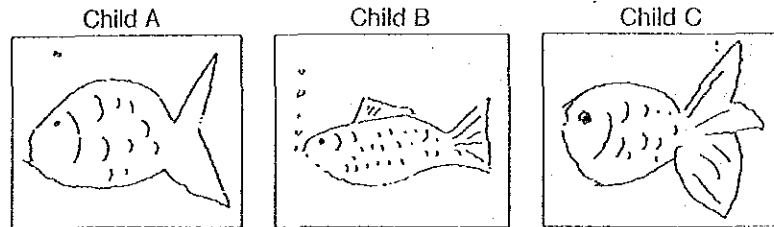
Pictures A, B and C were drawn by the same children each time.

① Before the learning session:

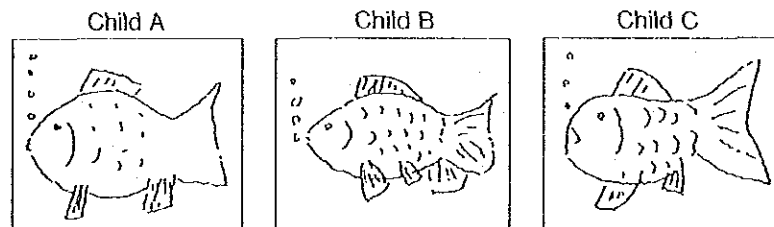


A and B show little difference. All colored the goldfish orange or red.

② After learning to observe directly:



③ After viewing TV:



Thus it is clear that the TV broadcast helped the children to observe more details, and that TV can be an important adjunct to direct observation.

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BROADCAST
ENGINEERING

NHK

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Outline of NHK

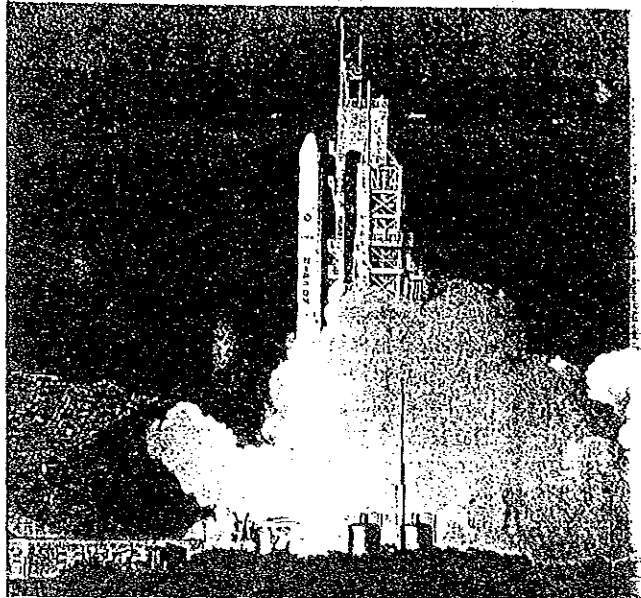
Broadcasting in Japan started on 22 March 1925 with transmissions by Tokyo Broadcasting Station, a corporate juridical person, and has continued as an unbroken activity for over 60 years. The enactment of the Broadcast Law in 1950, however, set up a dual system based on public broadcasting, by Nippon Hoso Kyokai (NHK), and private broadcasting by commercial stations.

NHK was established with the object of ensuring that its broadcasts could be received throughout the entire nation for the benefit of the public welfare. It is a public, non-profit corporation. It does not obtain any contributions from government, business, or other external bodies, but is financed by receiving fees, the burden of which is borne entirely by its audience.

The highest decision-making body in NHK is its Board of Governors, which makes decisions on the annual revenue and expenditure budget, operational plans, capital structuring plans, basic programming plans, and matters of similar importance. The Board is composed of 12 members, who are appointed by the Prime Minister with the consent of the National Diet. In the selection of its members, care is given to the representation of the various fields of social endeavor – such as education, the arts, science and industry – and the regions of the nation.



NHK Broadcasting Center



Launching the BS-2b Broadcasting Satellite. 12 February, 1986

NHK's Role

Principal among the various activities undertaken by NHK are the operation of domestic radio and television broadcasting, surveys and research that will contribute to the further development of broadcasting and reception, and the transmission of correct information about Japan to the nations of the world through its international broadcasting service Radio Japan. Of recent special note has been the implementing of test broadcasts over two television channels via broadcasting satellite and the research and development work aimed at bringing high-definition television (HDTV) into use.

NHK is active on the international scene. It is a member of the Asia-Pacific Broadcasting Union (ABU) and associated with other broadcasting unions such as the European Broadcasting Union (EBU). It exchanges programs, undertakes co-productions and cooperates in coverage, and in addition organizes courses for overseas trainees and dispatches specialists abroad at the request of broadcasting organizations in various countries.

Technical Activities of NHK

NHK transmits its domestic programs over five networks: two television networks, two radio networks and one FM network. The overall number of programs broadcast over these networks each week is approximately 1,700, and nearly all of them are produced at the Broadcasting Center in the Shibuya district of Tokyo, from where they are sent out to the whole of Japan.

Program Production and Transmission

The Broadcasting Center houses 22 television studios and 26 sound studios. The Center, its studios, and its fleet of various types of outside broadcasting vehicles are all equipped with a complete range of highly advanced technical equipment. Program production makes full and effective use of all these facilities. The allocation, linking and control of the equipment is under the automatic direction of a computerized system called TOPICS: Total On-line Program and Information Control System. To feed the huge number of programs into the correct networks, an automatic transmission system is employed, the ABCS: Automatic Broadcasting Control System.

At the same time, programs of regional interest are produced and broadcast in the 69 broadcasting stations located in the main cities of Japan. In order to increase the time allocated to regional

programs and to raise their standards, NHK is furnishing its local stations with full production facilities, including television and VTR equipment.

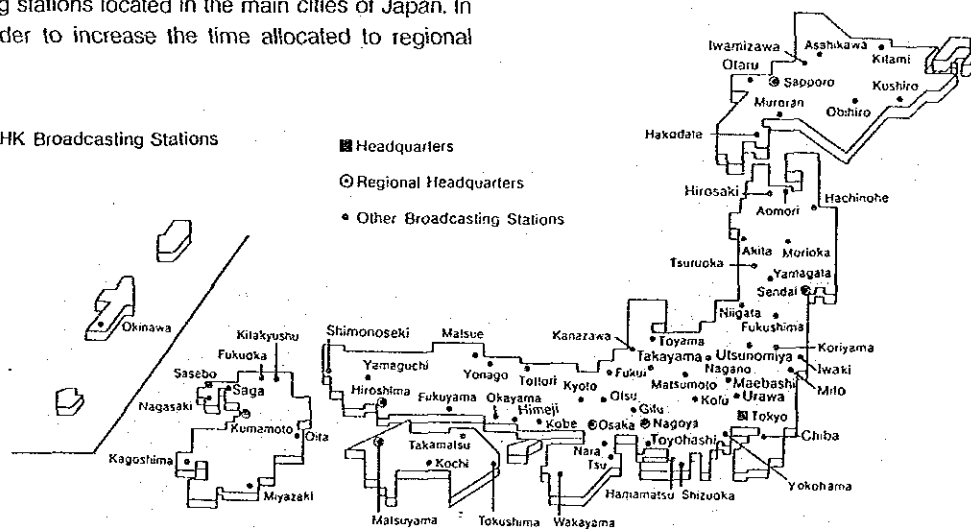
Ensuring Reception

One of NHK's principal tasks is to ensure that television and radio programs can be received by every household in Japan. For the construction, operation and maintenance of the huge number of its installations, NHK follows uniform established technical standards, and, by means of a unified system of control management, works ceaselessly to ensure that signals will be consistently stable and of good quality.

In addition, technical plans are drawn up both yearly and for longer periods of several years to make effective use of equipment, to reduce the expenses that installations require and to maintain reliability, taking into account the constraints of a limited budget.

This commitment to ensuring good reception sets NHK apart from other broadcasters. It has always been NHK's conviction that its responsibility goes beyond simply broadcasting to ensuring that its audience will be able to receive the best

NHK Broadcasting Stations



possible in images and sound.

The causes of poor reception that have accompanied the increase in high-rise city structures — noise from electrical appliances, interference, and such — which obstruct the reception of clear signals have come into being one after another. NHK works to eliminate these kinds of interference and gives advice on the most suitable methods of reception.

Research and Development

Development of and research into new technology is indispensable to the further growth of broadcasting and the enrichment of program contents. The NHK Science and Technical Research Laboratories were established in 1930, and down the years have contributed greatly to the advance of Japanese broadcasting in both aspects. Today their work in development research continues for the further evolution of broadcasting in the future.

Broadcasting is a means of conveying information through the senses of sight and hearing of the audience. That being so, if we were able to elucidate the function of these two human senses, we should be able to construct a better broadcasting system. Moreover, if new materials with outstanding capabilities and characteristics were to be dis-

covered, broadcasting equipment could be made even easier to use. NHK follows an integrated program of development and research activities that stretches from such fundamental research to applied technology. Hi-Vision, for example, into which so much effort is being put, and which is about to appear as the first HDTV in the world to be put into operation, has come as a product of this fundamental research.

International Activities

As Japan's activities on the international scene have grown, so NHK's international broadcasting service, known as Radio Japan, has increased in importance. At present its broadcasts in 21 languages reach a cumulative total of 40 hours a day, and efforts are being made to improve overseas reception by introducing new transmitting facilities and establishing overseas relays.

Moreover, participating in international broadcasting organizations such as ABU and EBU, exchanging programs, cooperating in coverage, accepting professional trainees, and dispatching technical experts abroad, NHK follows a multi-sided program of international cooperation.

These then are the principal activities that NHK's approximately 5,500 technical staff participate in.

Transmitting Stations of NHK and Commercial Companies

(as of end of March 1987)

	NHK		Commercial Companies	Total
	General	Educational		
Television	6,914	3,495	6,262 (103 companies)	13,176
	3,419			
Radio				
Medium wave	834		303 (69 companies)	1,137
	329		208 (47 companies)	537
	188	Radio 1		
	141	Radio 2		
Short wave	—		2 (1 company)	2
FM	505		93 (21 companies)	598
Radio (Overseas)				
Short wave	1		—	1
	(In 21 languages and for 40 hours a day)			

Technical Facilities of NHK

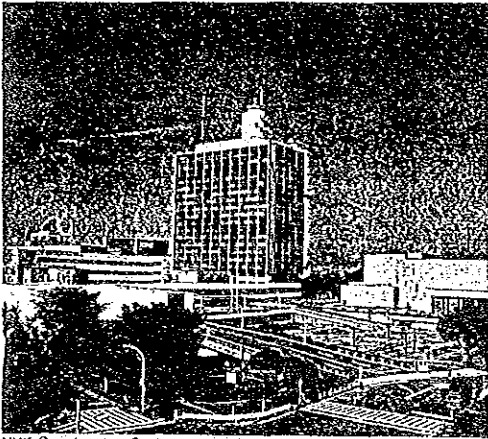
(as of end of March 1987)

	Studio		TV Camera	OB Van	VTR	
	Radio	TV			Stationary	Portable
Tokyo	23	22	234	18	267	60
Regional	77	51	485	103	394	126
Total	100	73	719	121	661	186

NHK Broadcasting Center

The Broadcasting Center, envisaged as an integrated radio and television broadcasting facility, was partly constructed on the occasion of the 18th Olympic Games in Tokyo, 1964. The whole complex was completed in the summer of 1973.

The Center consists of four major building blocks: the Main, the East, the West and the Hall. The Main block is a 23 storeyed building of which the higher storeys are administrative offices and the lower are rooms for program production, technical operation and computers. The antenna tower on the roof of the Main building receives signals from remote pickup spots and radio communication links. A tracking antenna for receiving coverage from helicopters is mounted on the very top of the tower.



NHK Broadcasting Center

Outline of NHK Broadcasting Center

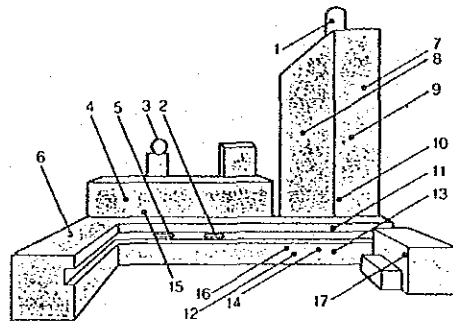
Address	2-2-1, Jinnan, Shibuya-ku, Tokyo
Site Area	82,650m ²
Buildings	East (8-storeyed, 1-basement) West (8-storeyed, 1-basement) Main (23-storeyed, 1-basement) Hall (6-storeyed, 2-basement)
Total Floor Area	Broadcasting Center 176,500m ² Hall 21,000m ²
Studios and Related Rooms (Nos.)	TV studios (22) 1st, 4th, 5th floor Radio studios (26) 4th, 5th, 6th, 13th floor Dubbing studios (8) 3rd, 8th floor Technical Operation Center 2nd, 3rd floor News Center, Overseas Broadcasting Studios (5), Sound effect and animation studios, Rehearsal Rooms
NHK Hall	Total Seating Capacity 4,000 Pipe Organ with 109 stops and 7,640 pipes
Visitors' Route	Total length of route 600m Floors of route 3rd, 4th, 6th

The East and West blocks mainly consist of radio and television studios, rehearsal rooms, related production offices and the Technical Operation Center. In the design of the studio complex, much care has been paid so that performers, production staff, engineers and other related persons have easy access to studios without being disturbed by others.

In the East block, there is a special route for visitors to view TV performances and sound studios through observation windows. Displays also introduce programs and performers.

A new, expanded News Center is now being constructed to handle news program production with a greater variety of approaches. The new facility, which will have a total floor space of 19,000 m² in two underground and three above-ground floors, is scheduled for completion in the spring of 1988.

Layout of NHK Broadcasting Centre



1. Antenna Tower Penthouse
2. Main Entrance(4F)
3. Earth Station Transmitting Antenna
4. Program Production Block
5. Entrance of Visitors' Route(4F)
6. Studio Block
7. Office Block
8. Radio Center(13F)
9. Program Production Block
10. Overseas Broadcasting(6, 7F)
11. News Center(5F)
12. Technical Operation Center(2F)
13. Library(1F)
14. Central Radio Control Room(3F)
15. Operation Center for the Broadcasting Satellite (4F)
16. Program Transmission Control Room(3F)
17. NHK Hall

NHK Hall

NHK Hall, having a total seating capacity of 4,000 persons, is located in the premises of the Broadcasting Center. It is a multipurpose hall for performances such as concerts, opera, ballet, popular music, and lecture.

The Hall is fully designed for live broadcasting or recording of radio and TV programs. The acoustic design was carried out by NHK Technical Research Laboratories, and the reverberation time at full seating is 1.6 seconds.

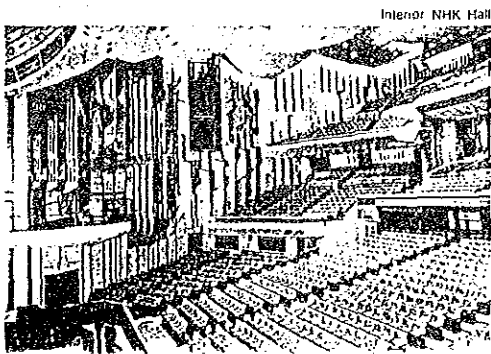
In the Hall there are side stages on both sides of the main stage which can be used to set up succeeding scenes and be easily slid over in place of the main stage. The width of the fixed proscenium is 20 m and height is 10 m. There is also an adjustable proscenium of a smaller size.

The main stage is also equipped with a sliding stage, two kinds of lift stages, movable sound reflectors, and an apron stage which can be sunk or lifted for use as an orchestra pit or audience seating area.

Its broadcasting facilities include a total of 5 cameras, a remote controlled camera in the front part of the third floor balcony. For sound pick up, more than 200 microphone inputs are provided on the stage and in the seating area, and 10 wireless microphones of different frequencies are available.

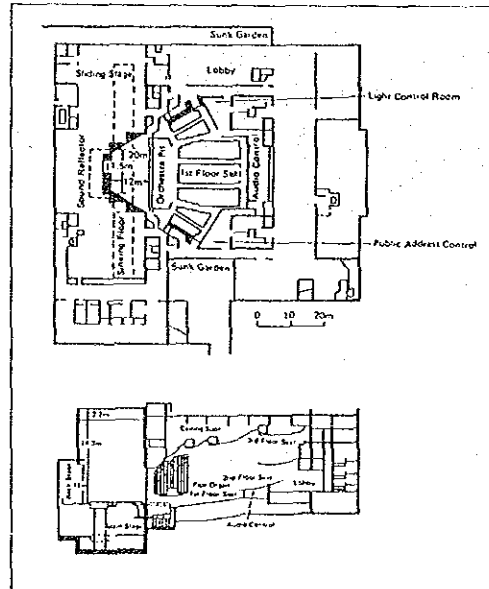
The lighting system comprises about 1,200 fixtures with a total illumination power of about 1,200 kVA.

A large pipe organ with a total 7,640 pipes, 90 registers and 109 stops is installed. The largest pipe is about 11 m long and 45 cm in diameter. The organ can be also played by separate console on the stage. The Hall is provided with several facilities for physically handicapped person.



Outline of NHK Hall

Building	Building area: 6,900m ² (90m east-west, 65m north-south, approximately 25m tall) Total floor space 21,000m ² 6-storeyed, 2-basement Steel-frame ferro-concrete and reinforced concrete structure
Audience Space	Seating capacity: Total 4,000 Maximum width: 48m Maximum depth: 48m (from proscenium) Area: 2,500m ²
Stage	Fixed proscenium: 20m wide, 10m high Movable proscenium: 20-14m wide, 10-7.5m high Height of flies: 24.3m Under stage depth: 9.5m Main stage: 25m wide, 20m deep, 500m ² in area Side stage: 800m ² Back stage: 185m ² Apron stage: 105m ² (orchestra pit) Large lift stage floor: 15m X 5.4m 1 unit Small lift stage floor: 1.8m X 1.1m 3 units Sliding stage: 40.5m X 5.4m 1 unit Lift orchestra pit floor: 18.8m X 1.8m 3 units Movable ceiling over apron stage: 1 unit Movable sound reflectors: Complete set Hangers: Complete set
Sound Equipment	Hanging microphones, wireless microphones, elevator microphones, mixing console, PA console, tape recorders, disc players, speaker units and echo room
Lighting Equipment	Light control, border lights, ceiling lights and remote-control panel
Backstage Equipment	Backstage rooms: 9 private rooms, 1 large room, 1 rehearsal room (also used as backstage room), makeup rooms, shower rooms, dressing rooms and property rooms

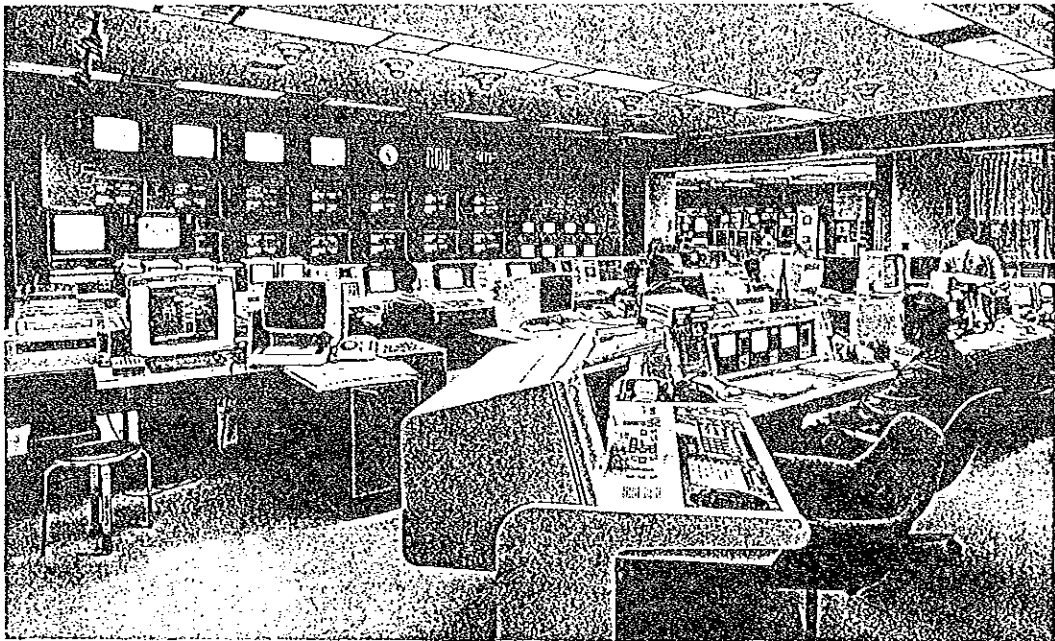


Technical Operation Center

The work of the Technical Operation Center covers the management and centralized operation of VTRs and other general-purpose program production equipment, the post-production work of video tape editing, computer graphics production, and TV standards conversion, and dispatch of completed programs throughout the country.

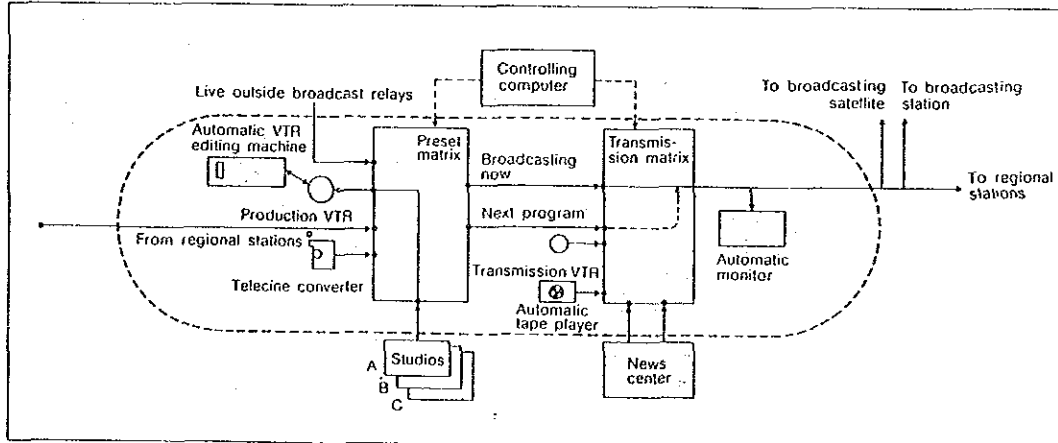
TOPICS

Since 1968 NHK has employed a computerized central management and control system, Total On-line Program and Information Control System (TOPICS) which carries out the entire range of work from program production to distribution



TOC Room

NHK-ABCS(Automatic Broadcasting Control System)



in accordance with programming plans. TOPICS uses computers to allocate usage of limited equipment and facilities, to connect equipment and switch programs automatically according to the production schedules, and to provide rapid information transmission to all those responsible for the various aspects of program production.

The Automatic Broadcasting Control System (ABCS), a subsystem of TOPICS, employs computer control to transmit programs from the Broadcast Center through NHK's broadcast network to stations throughout the country, automatically. The Program Transmission Control Room serves as a hub for these operations. It monitors the outgoing programs and can reschedule broadcasts to accommodate special announcements and last-minute programming changes. The switching functions in the control room are divided between a transmission matrix and a preset matrix. The transmission matrix selects the outgoing signals from the VTRs and studios for transmission according to the program schedule. The preset matrix handles setting up the required equipment before production or transmission occurs. It automatically connects the equipment needed for production and transmission to the studios and to the transmission matrix.

All NHK stations are linked in a program network that converges on NHK Broadcast Center in Tokyo. There, by realtime cue signals multiplexed onto incoming video signals, programs from any indi-



Post-Production Process

vidual station can be immediately selected for broadcast throughout the country.

All recorded tapes are stored in a computer-controlled storage and retrieval unit in the Broadcast Center until required. Each tape is automatically delivered before the scheduled broadcast time and an ID code at the beginning of the tape is checked to confirm the contents.

The Technical Operation Center employs primarily 1" helical VTRs, with 1/2" compact high-quality videocassette equipment also available.

Program Editing

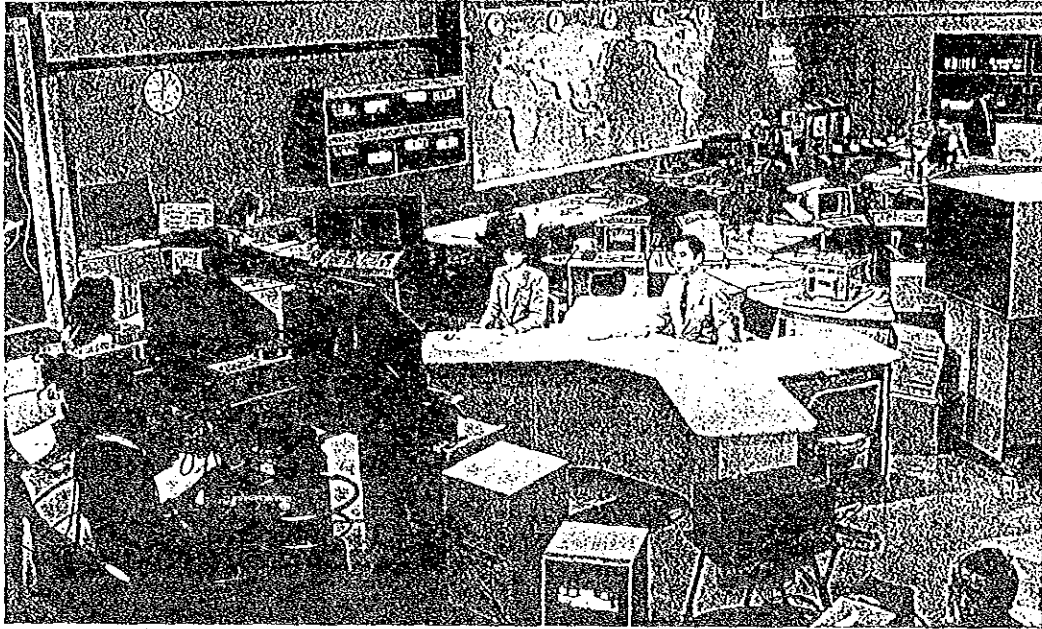
The widespread use of videocassette recorders and the improved performance of videotape has made it increasingly popular to dub all of the program material on videotape and perform an initial editing — a preproduction — using consumer model VTRs. The final editing is then performed automatically based on the preproduction. Although NHK facilities support direct electronic editing of originals, producers often prefer the greater flexibility of the preproduction process. Due to the large volume of material that must be edited to produce dramas, documentaries, and special programs, NHK has allocated 9 automatic editing systems to this purpose, while 14 simple automated editing systems are available for general programming.

Major Equipment of Technical Operation Center

Name of device	Quantity	
	General use	Program transmission*
VTRs (1- and 2-inch)	150	17
VCRs for automatic transmission	1	-
Telecine converter	-	1
Video editing systems	23	-
Computer graphics systems	3	-
TV system converters	1	-
Video timing units	-	3
Flying spot scanners	1	8
Automatic tape reproducers	2	4
Sound tape record/reproducers	8	25

*Equipment used for program transmission is installed in the Transmission Control Room

News Center



The News Center

Television news broadcasts, bringing directly to the eyes of viewers the latest developments and events from not only in Japan but from everywhere in the world, are among the programs that elicit the greatest audience interest. It is necessary, therefore, for NHK to be constantly prepared for unexpected events happening at any moment, so that news can be transmitted rapidly and correctly. At the NHK Broadcasting Center, the News Center is organized with its own studios and equipment, which are separate from those used for general programs, and it can therefore process centrally, edit and transmit all the information it receives.

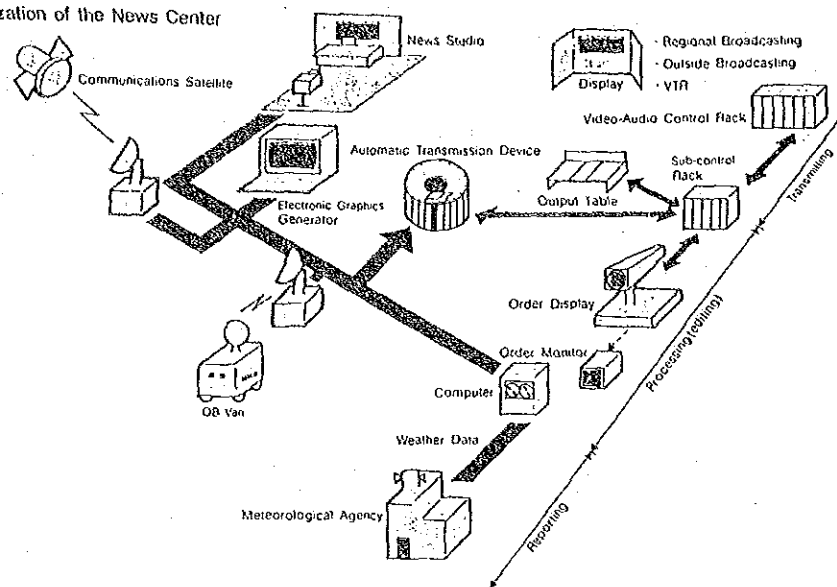
News Center System

The News Center gathers material relayed from regional stations, on-the-spot coverage, and satellite feeds from overseas, or from videotape recordings made on location. And when the material has been edited under various subject headings, the time needed for each item and the order in which the items are to be broadcast are fed into an order

display unit. The order display unit immediately calculates the total lap time required for broadcasting, and at the same time as it communicates this by display to the various relevant departments it notifies the automatic transmission control unit.

The automatic transmission control unit is used for news programs as these require complicated switching which must be carried out smoothly and without error within extremely brief periods of time. The unit switches between the cameras trained on the announcers, and sequences from videotapes shot on location, images from on-the-spot reporters, and such. For switching between text generators, studio cameras, VTRs, and regional station circuits, continuity cards are employed to indicate the various items of equipment to be used. The continuity cards are stacked in advance in order and set into the automatic transmission control unit. Then while the technical director presses a button at the switching times, the instructions on the cards will be automatically read off in order and the program transmitted as planned.

The Organization of the News Center



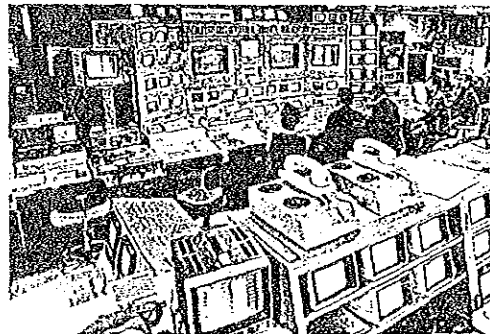
Weather Reports

NHK broadcasts prompt and accurate weather reports closely related to daily life. Data from cloud pattern images taken by the meteorological satellite Himawari are forwarded regularly from the Meteorological Satellite Center, and cloud movements up until immediately before broadcasting time can be shown. Rainfall data for the entire country obtained by a system known by the acronym AMEDAS, radar images of rain distribution, and weather forecast data for the whole country are received at fixed daily times from the Meteorological Agency. All this data is processed in the News Center, where it is translated into graphic images for broadcasting use and automatically entered into the script for the weather forecast. This weather information is distributed to the regional broadcasting stations through the NHK network, and is put to use in regional broadcasts.

In addition to this, as NHK is a publicly designated organ for service in times of emergency and disaster, it has paid considerable attention to

emergency broadcasts on the occasions of such events as earthquakes, tsunamis and typhoons. Relevant information from the Meteorological Agency and accurate reports from the scenes of disasters are also broadcast from the News Center.

Now that satellite relays have become a daily routine and studies are being made of news broadcasting on a 24-hour basis, NHK has started construction of a new news center that will be fully provided with the most up-to-date capabilities and equipment. With its completion, the production of news programs will develop in yet newer directions.



The News Center Control Room

Television Studios and Video Equipment

The 22 studios in the Broadcast Center produce about 200 programs per week. Each studio is equipped differently and is used according to the nature of the program to be recorded. The accompanying table shows the size and the camera and lighting facilities of each studio.

Leading Edge Studio

Studio CT-113 is a drama studio that incorporates the latest developments in production techniques. In a departure from the usual centralized control system, the camera-control units and VTR for this studio have been moved to the control room to join the sound equipment and lighting. This new system combined with the control room's convenient location on the same floor as the studio facilitates communications among

the broadcasting staff and raises the studio's production efficiency.

The studio's cameras are NHK's own standard lightweight, compact high-performance models based on a $\frac{3}{8}$ " tube. The quick-change adapters on these cameras mean that they can be removed from their pedestal mounts for carrying by hand in a matter of minutes. The cameras also feature auto alignment functions that reduce the alignment time and make the cameras easier to use.

The video switcher for the studio is completely digital for simple addition of special effects. This switcher also has many more functions for switching video modes and superimposing characters than were available in previous analog switchers. The digital design, more consistent in operation and less affected by the passage of years, gains in reliability, and it is significantly easier to use.

TV Studios in NHK Broadcasting Center (as of March 1987)

Studio	Studio Area (m ²)	Height of Fixed Cyclorama (m)	No. of Cameras	Computer Aided Lighting Control System	Main Usage
CT-101	1,197	9	4	○	Symphony and Musical Shows
-102	507	8	4	○	General use
-103	402	8	3	○	General use
-104	402	8	3	○	General use
-105	507	8	4	○	Dramas
-106	684	8	4	○	Dramas
-107	183	5	3		Science programs
-108	183	5	4		Science programs
-109	180	5	3	○	General use
-110	180	5	3	○	Cooking programs
-111	180	5	3		General use
-112	506	7	4	○	General use
-113	497	7	4	○	Dramas
-114	360	7	3	○	General use
-411	248	5	3	○	General use
-412	239	5	3		General use
-413	238	5	3		General use
-414	239	5	3		General use
-415	383	5	3	○	General use
-510	419	5.5	4		News programs
-511	393	7	4		General use
-512	239	5	3		General use
News Center	280	-	3	○	News and Weather Reports
NHK Hall	Stage 400	-	5	○	Symphony and Musical Shows

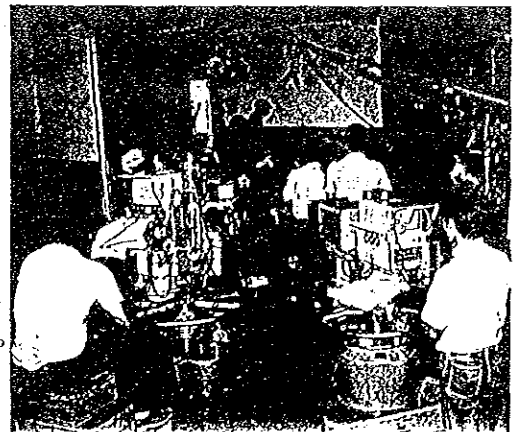
No. of cameras denotes number in ordinary operation

Studio Lighting

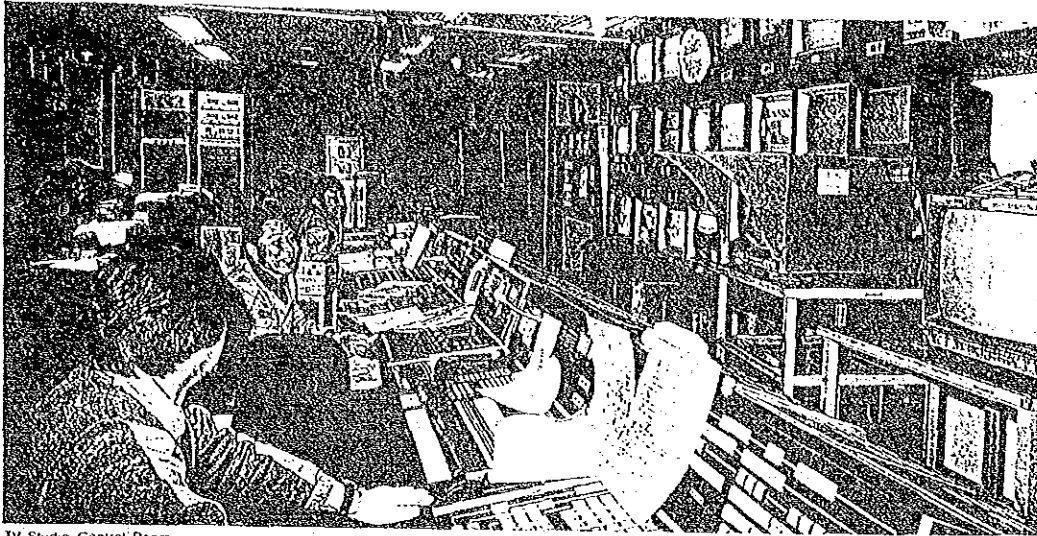
Studio lighting is another vital area. Studios producing music and variety shows must have lighting set up rapidly for their many complex scenes. To achieve the desired effects, many fixed lighting units with remote-controlled telescopic mounts are used in combination with fast-acting continuous dimmers.

Studios used for drama production are crowded with built-in sets, and movable telescopic-suspension units are used to adapt the lighting to a variety of stage positions. Lighting units in these studios also have more telescopic segments, to reduce the need for rehanging.

To provide the greater flexibility needed to illu-



Program Production in TV Studio
10



TV Studio Control Room.

minate large studios, NHK employs additional equipment, such as wireless remote-control units for pan, tilt, focus, and power, and off line computerized lighting controllers that allow lighting plans to be prepared and stored in advance for execution at a later time.

Digital Special Effects

Special effects are another important tool for the studio producer. In addition to such traditional special effects as slow motion and chroma keying, a variety of stunning new effects have been achieved by using digital video-effectors (DVE), computer-graphic, and Video Mat systems.

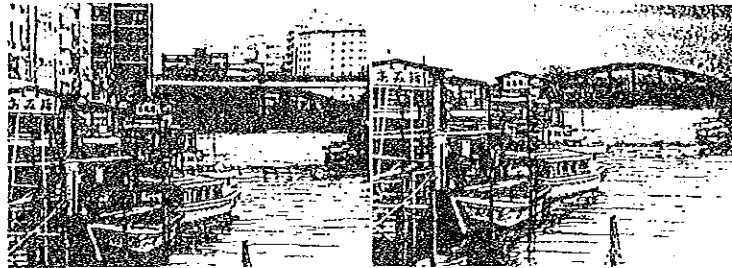
The digital video effector can squeeze, expand, and move screens at will, or compose a title screen onto a shot of a newscaster. It can also

produce a 3D effect. Computer graphics capabilities are used to create charts, graphs, and similar visual representations of meteorological data, election results, and other information. Computer graphics are also used to create visual effects for program titles.

The Video Mat system, developed by NHK, enables the program producer to combine images to transcend barriers of space and time, and to create scenery that could never be shot by actual shooting. The keying signal used to combine the images is generated by a computer and image-processing unit, eliminating the need to use colored backgrounds, as is required by chroma keying. This technique is very useful in producing dramas since it lets the producer insert outdoor scenery as a background for the studio sets.



Remote-controlled Lighting



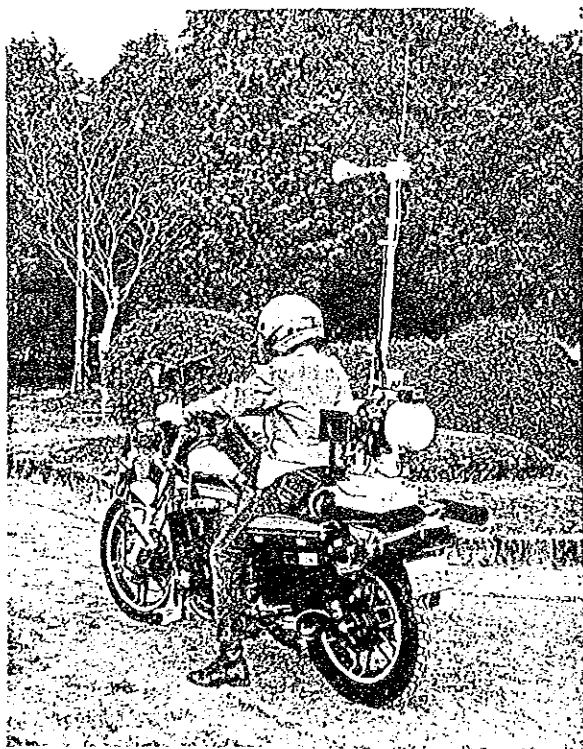
Scene Before Creating Composite with the Video Mat (left) and After (right)

Outside Broadcasts

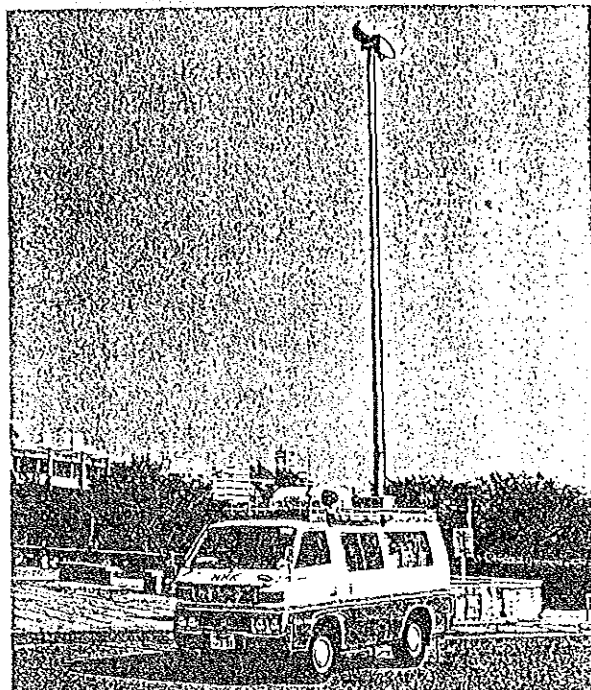
Viewers greatly appreciate live coverage of news events, disasters, sports, and other events that occur outside the television studio, and providing such on-site coverage has become an essential part of broadcasting. NHK lays great stress on live hook-ups and has worked to develop the equipment to handle them effectively.

Outside Broadcasting Vans

Outside broadcasting vans play a key role in such on-site broadcasts. Highly mobile small news broadcast vans loaded with compact equipment and news cars are essential for swift response to fast-breaking news stories such as crimes or disasters. The NHK Broadcasting Center always has eight news broadcasting vans and two news cars equipped and ready to go whenever an urgent story breaks. Live coverage of golf, baseball, and other sports events or live concerts, however, requires more sophisticated equipment. Five large television broadcasting vans loaded with high performance video and audio equipment and one audio broadcasting van stand ready to



Motorcycle Camera

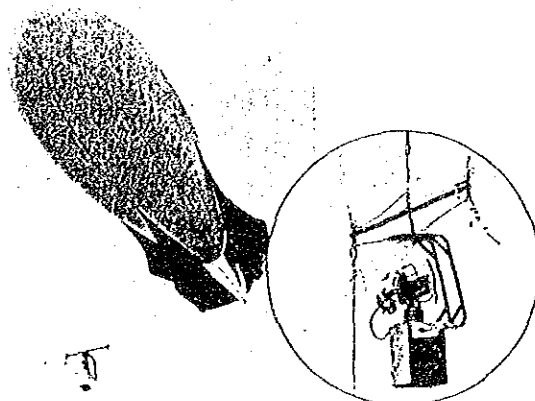


ENG Van

follow all the action without missing a thing. Marathons and boat races require that the broadcast crew move with the action to record the events; that is the job of two mobile video vans. Motorcycle camera units use a combination of still more compact wireless remote control cameras and miniature field pickup units (FPU).

Effective Camera Placement

Great ingenuity has gone into finding ways to pick up the most exciting and appealing images in making live broadcasts. The use of the motorcycle



Dingy-borne Camera