1. The Expert's Committee investigated about possible areas to be designated as Areas under intensified measures against Earthquake Disaster (hereafter referred to as "intensified area" prescribed in Article 3, Paragraph 1 of the Large-Scale Earthquake, Countermeasures Act (hereafter referred to as Countermeasures Act), based on the inquiry of "on the designation of Areas under intensified measures against Earthquake Disaster" inquired to the Chairman of the Central Disaster Prevention Council by dated December 28, 1978. The process and results of the investigation are as follows.

2. First, the Expert's Committee investigated about the range of the crustal area judged as significant potential area for occurrence of large-scale earthquakes, and concluded that areas to be designated as 'intensified area' related to the postulated so called 'the Tokai Earthquake' should be indicated as soon as possible.

3. Judging from the results of various observations, surveys, and researches, and from the facts known by the historical earthquake records, the dislocation model of the Tokai Earthquake is postulated that the fault would be of the size of 100-120km south to north, 50 km east to west, and dipping 20° to 30° reversely. The location of the dislocation is postulated in where along the Suruga Trough line in the eastern edge, and up to the end point of Suruga Bay in the western edge, even it is very hard to postulate. The area to the west of the western edge already released its strain energy in the event of the Tonankai Earthquake in 1944, therefore the potential for its expansion to the south of the Enshunada offshore area like in the case of the Ansei Tokai Earthquake, is quite small. A possible magnitude of the earthquake is assumed as around 8, and destruction possibly starts from the southern end of the fault plane .

4. Upon receipt of this dislocation model, the Committee investigated on areas which would possibly suffer significant damage in case such predicted earthquake occurs. There are many kinds of disasters relating to earthquakes, primary disasters directly caused by the motion and subsequent disasters. It is very difficult to investigate all possibilities in a short time, because such primary disasters sometimes introduce various kinds of secondary disasters. Therefore, the Committee decided to investigate disasters directly caused by earthquake motion, concentrating mainly on disasters regarding wooden constructions and low buildings (hereafter referred to as "wooden constructions").

It is reasonable to judge the degrees of damage of wooden constructions by intensity of earthquake motion (generally present by the Meteorological Agency's Scale of Seismic Intensity or maximum acceleration). For this reason, the Expert's Committee studied geology and the state of the ground in the related areas first, then analyzed their specific properties of earthquake motion, and interpreted how the intensity of earthquake motion in the basement ground decreased depending upon distance and direction from the hypocenter.

Subsequently, concerning the fault model built up previously, the Committee judged intensity of earthquakes giving damage to wooden constructions in various areas based on the integrated interrelations of the results of intensify decrease, and geology and the state of ground in the areas.

In this case, from the view point of serious damages for wooden constructions, earthquakes with stronger motion acceleration than those corresponding to seismic intensity VI were taken up for the investigation.

5. As the results of the above mentioned investigations, it is assumed that wooden constructions in the areas shown in the following map will be seriously damaged by earthquakes exceeding seismic intensity VI, and municipalities within those areas are described in the following table.

All these areas need measures of earthquake disaster prevention, concerning with their states of social and economical condensity. This judgement seems to be reasonable comparing with the record of the historical large-scale earthquake disasters.

6. The Committee studied on tsunami Potential based on the fault model mentioned in item 3, and concluded that the coastal area facing the Pacific Ocean from the southern part of the Izu Peninsula to the southern end of the Kii Peninsula is a hazardous area for tsunamis, and especially the area from the southern part of the Izu Peninsula to the inside of Suruga Bay envisages large-scale tsunamis. Among them, the areas corresponding to "hazardous areas for possible gigantic earthquake disasters" and to be designated as intensified areas are judged as possible large-scale tsunami area, and are included in the areas mentioned in item 5.

7. In addition to that, the areas which are surrounding such designated intensified areas, and in which some disasters by landslides and collapses in natural slopes, and liquefaction of the ground, or long periodical earthquake waves are postulated, are judged as target areas for investigations based on detail ground and deep geological structural data.

Map of Areas under intensified measures against Earthquake Disaster

The latest gigantic earthquake which occurred in the Tokai area is the Tonankai EarthQuake (M 8.0) in 1944, and the previous one is the Ansei Tokai Earthquake (M 8.4) in 1854. The latter is of larger scale than the former, and is thought to have extended from the Tokai Offshore to the inside of Suruga Bay. On the other hand, the hypocenter of the former is in the western part of the Tokai Offshore, nearby the Kii Peninsula, and the eastern part of the Tokai Offshore including Suruga Bay still remains as a non-destroyed area for about 130 years since the Ansei Earthquake.

Furthermore, according to the results of the geodetic surveys, the west coast at Suruga Bay subsided about 40 cm in the period of 73 years since 1900 which is the year conducted the first survey, and is still subsiding at a speed of several millimeters per year. Also according to the results of the triangulation, etc., it was made clear that the distance between the Izu Peninsula and the west coast of Suruga Bay was shortened about one meter since the early years of this century. Therefore, it is assumed that the strain have possibly been accumulating in the area around Suruga Bay, and the volume of such strain would be significant.

Outline of the municipalities within the intensified areas

Prefecture	City	Town	Village	Population	Area (km^2)
Kanagawa	8	11	-	1,320,804	1,056.77
Yamanashi	7	32	17	793,694	3,588.83
Nagano	3	5	9	287,129	1,836.22
Gifu	1	-	-	53,528	275.93
Shizuoka	21	49	5	3,563,156	7,324.52
Aichi	1	-	-	35,674	117.60
Total	41	97	31	6,053,985	14,857.77

Note 1: Population; as a March 31, 1985
Note 2: Area, the total area of 657.90 km^2 in the Fujiyoshida City and Narusawa Village in Minamitsuru-gun, Yamanashi Pref., and Fujinomiya City and Koyama Town in Shunto-gun, Shizuoka Pref. are included in the total figure of the six prefectures, but not included in the figures in each prefecture, because those boundaries are not clearly decided.

Judging from those evidences and data, the eastern part of the Tokai Offshore including Suruga Bay seems to be a possible area for a large-scale earthquake, and the scale of the postulated fault is 100-120 km north to south, 50 km

east to west, dipping 20 to 30 degrees to the west in the reverse from along the Suruga Trough Line reaching inside of Suruga Bay in the north.

It is estimated that the fault dislocation is about 3 meters and the scale of the earthquake would be about Magnitude 8. If it occurred, it is envisaged that the intensity of the earthquake would exceed "6" in the Areas under intensified measures against Earthquake Disaster, and a tsunami would attack the coast area from the Southern part of the Izu Peninsula to the southern part of the Kii Peninsula.

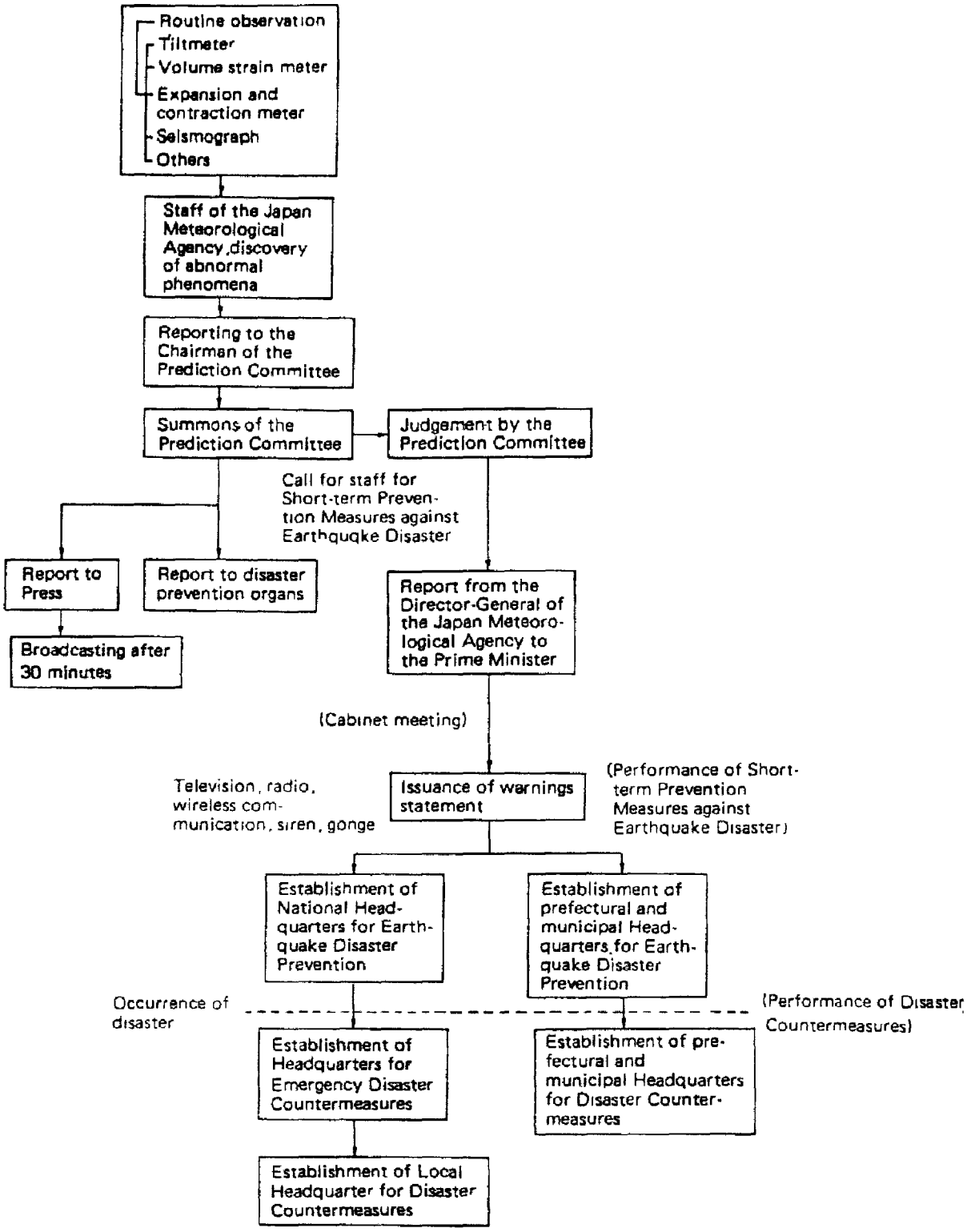
3.3 In case a Warnings Statement is issued

When some abnormal phenomena are detected in the observation data in intensified areas, and the Prediction Committee for Areas under intensified measures against Earthquake Disaster judges that the possibility of occurrence of a large-scale earthquake is high, the Director-General of the Meteorological Agency should report such information to the Prime Minister.

When the Prime Minister, upon receipt of earthquake prediction information, recognizes that the implementation of short-term measures against earthquake disaster is in urgent need, he will, upon consultation with the Cabinet, issue an earthquake warnings statement, and notify publicly the residents, and public and private bodies within the intensified area that they must be prepared for the emergency.

An earthquake warnings statement or a prediction information will be transmitted to the residents in the areas promptly through national, prefectural and municipal organs, and broadcast services such as radio and television. Municipalities are promoting upgrading of transmitting systems by setting earthquake disaster signals such as sirens and gouges, public announcing cars, wireless communication, etc.

Prediction Committee's room in the Japan Meteorological Agency. They will judge whether the Tokai Earthquake will occur or not, but the Committee has never been held yet.



Process from the discovery of abnormal phenomena to Issuance of Warnings Statement

Training - Earthquake Disaster Warnings Statement for the Tokai Earthquake -

Based on the Large-Scale Earthquake Countermeasures Act, the Prime Minister will issue an earthquake warnings statement.

Today, the Minister received an information from the Director-General of the Japan Meteorological Agency, said that the possibility of occurrence of a large-scale earthquake, within two or three days, whose hypocenter is in Suruga Bay and its southern offshore area, is judged as high from the abnormalities found in the observation data in the Tokai District.

If it occurred, it is envisaged that its seismic intensity would be larger than 6 in the areas under intensified measures against the Tokai Earthquake disaster, and about 5 in the vicinity areas.

The southern part of the Izu Peninsula and the coast of Suruga Bay also would envisage a large-scale tsunami.

The public corporations within the intensified areas are required to implement the short-term measures against earthquake disaster.

Residents and sojourners in the intensified areas are required to prepare for emergency, and behave calm in accordance with instructions of the related disaster prevention organs.

Furthermore, it is required to stop making phone calls and travel into the intensified areas. The Director-General of the Japan Meteorological Agency will announce detail earthquake prediction information, therefore, please pay attention to radio and television broadcast.

September 1st, 1985

the Prime Minister, Yasuhiro Nakasone

Holiday and night time liaison staff in the National Land Agency. Waiting in the watching room. In case the Prediction Committee is called in night time, they will contact with staffs of the National Land Agency and related administrative organs.

Comparison of short-term countermeasures in the intensified and vicinity areas when a Tokai Earthquake Warnings Statement is Issued.

Facility \ Area and Seismic-intensity	Within intensified area (over 6)	Metropolitan Tokyo (below 5)
1 Electric Power	Supply	Supply
2 Gas	Supply (prepare for emergency stop)	Supply
3 Water supply	Supply	Supply
4 Telephone	Call restricted (blue, yellow, green, for disaster prevention are in operation)	Call restricted (blue, yellow, green, for disaster prevention are in operation)
5 National Railways and private railway services	All cars will stop in the nearest safe stations. Prohibit inflow from outside areas	According to the local circumstances, operate as much as possible (basically slow operation 40 km/h)
6 Bus and Taxi	Operation stop	According to the local circumstances, operate as much as possible
7 Ships	Operation stop	Operate (except vessels toward intensifeid areas)
8 Road	Prohibit inflow from outside areas as much as possible, evacuation route and urgent transportation route stop or restricted to slow driving (general road 20 km/h, express way 40 km/h)	Prohibit inflow from non-intensified areas into Metropolitan Area as much as possible, limited speed driving (general and metropolitan express road 20 km/h, express way 40 km/h.) After reached the first aiming point, then give up cars.
9 Bank and Post	Operation stop (serve withdrawal of ordinary account for cliants who are in the banks when a warnings statement is issued)	Operate as much as possible
10 Department store Super market	Lead shoppers to out	Operate as much as possible (terminal department stores close)
11 Hospital	Operation for outpatients stop	Operate as much as possible
12 Theater	Operation stop	Operation self restraint
13 High-rise building	—	Operation self restraint
14 School	Hand off students to guardians, back home	Hand offs students to guardians, back home
15 Office	Leave office at different time	Leave office at different time

On the formulation of Earthquake Disaster Prevention Plan

In case an area is designated as an intensified area, the national administrative organs, designated public corporations, local public bodies, and managers of important privately owned facilities ought to formulate concrete conduct plans for prevention of postulated primary and secondary disasters from earthquakes, and expansion of those disasters (Earthquake Disaster Prevention Plan), to prepare in case of an issuance of Earthquake prediction. Contents of plans are as follows.

1. Basic Plan of Earthquake Disaster Prevention

The National Central Disaster Prevention Council formulates this plan which determines a national basic policy regarding earthquake disaster prevention following an issuance of an earthquake warnings statement, and basic items

for an intensified plan of earthquake disaster prevention and a short-term plan of earthquake disaster prevention The basic plan regarding Areas under intensified measures against Earthquake Disaster for the Tokai Earthquake was decided in September 1979, and its outline is as follows.

(1) National basic plan regarding earthquake disaster prevention in case an earthquake warnings statement is issued.

Smooth transmission of earthquake prediction information, mutual cooperation of relating disaster prevention organs, implementation of short-term measures giving the first priority to the safety of people, accurate management of the National Headquarters for Earthquake Disaster Prevention, and cooperative measures with local residents are settled as basic guidelines, and specially following items are emphasized.

a) To make smooth and accurate transmission of information by securing broadcasting service routes through radio and television settling formulated transmission words in advance.

b) To make tight cooperation system between the disaster prevention organs and local residents through routine educational training programs to let people be able to behave calmly and orderly in case a warnings statement is issued.

(2) Basic items for intensified plan of Earthquake Disaster Prevention

a) In this plan, relating disaster prevention organs should settle improvement of systems of disaster prevention organs, transmission of earthquake prediction information to residents, measures for evacuation, drinking water, electric power, telephone, broadcasting, financing, traffic, and urgent transportation, and despatching concerning organs for rescue, as short-term measures against earthquake disaster. Main items for that are as follows.

(i) To perform evacuation for people in areas such as predicted tsunami hazard and land slide hazard areas, which are judged as very dangerous to people's life.

(ii) To secure supply of drinking water and electric power.

(iii) To restrict making telephone call to secure concerning disaster prevention organ's use.

(iv) To broadcast accurate and prompt earthquake prediction information.

(v) In traffic facilities, to restrict driving vehicles in intensified areas, and inflow of vehicles from outside. To restrict inflow from outside and getting off from interchange areas in express ways To allow railway cars to move to the nearest stations at safe speed. To restrict water traffic in predicted hazardous areas by tsunamis.

(vi) The Defence Force will dispatch its staff for urgent transportation of people and material, collection of information, and transmission of necessary information for evacuation, in case the General Director of the National Headquarters for Earthquake Disaster Prevention requires.

b) Urgent improvement of places of refuge, evacuation routes, fire fighting facilities shall be done in 10 years.

(3) Basic items for short-term plan of earthquake disaster prevention

Specific private bodies should establish systems for short-term measures in Short-term Plans of Earthquake Disaster Prevention. Important items for that are as follows.

a) Theaters, department stores, to conduct audiences or shoppers evacuation.

b) Manufacture of kerosene, explosives, etc.; to perform necessary short-term safety measures to prevent disasters of surrounding areas.

c) Primary and secondary schools, social welfare facilities; to settle way to guard pupils or people there, and way to hand-off them to their guardians upon receipt their opinions.

d) Gas; to continue supply, in case an earthquake occurs, to prepare urgent stop.

(4) Concerning disaster prevention organs will perform integrated training programs regarding various kinds of short-term measures of earthquake disaster prevention with cooperative participation of residents more than once a year.

2. Intensified Plan of Earthquake Disaster Prevention

This plan is formulated by designated administrative organs, designated public corporations, and local public bodies, in terms of an operational plan for disaster prevention and a local plan for disaster prevention, etc.

In this plan, following items are formulated. (i) items regarding measures in connection with short-term measures of earthquake disaster prevention, in case a warnings statement is issued. (ii) items regarding facilities to be urgently improved for earthquake disaster prevention such as places of refuge, evacuation routes, and fire fighting facilities. and (iii) items regarding disaster prevention training programs and other important measures.

3. Short-term Plan of Earthquake Disaster Prevention

This plan regulates items regarding measures of earthquake disaster prevention in case a warnings statement is issued, and education and public relations for the people who control and manage important facilities in intensified areas of disaster prevention such as hospitals, theaters, department stores, hotels, manufacture-storage-treatment facilities for kerosine, explosives, high pressured gas, and other dangerous materials, and local transportation service facilities for local people such as railways and bases in which many unspecific people would gather there.

Furthermore, in intensified plans of earthquake disaster prevention and short-term plans of earthquake disaster prevention, each responsible staff is proceeding to formulated concrete plans based on the Basic Plan of Earthquake Disaster Prevention and actual circumstances at that time. Until now, all of the intensified plans have been formulated by the concerning local public bodies, and 80 percent of the short-term plans out of predicted 29,000 objective facilities have been formulated.

On arrangement and purchase of equipment which is necessary for disaster prevention to make smooth performance of short-term prevention measures of earthquake disaster prevention by private sectors, a tax privilege is applicable for such buyers to promote such arrangement.

Tax privilege for improvement of disaster prevention

1. A privilege for national and local taxes imposed on equipment for disaster prevention (in Areas under intensified measures against Earthquake Disaster).

On the national tax, persons who formulated short-term plan of earthquake disaster prevention regulated by the Large-Scale Earthquake Countermeasures Act can apply 16 percent of special depreciation for income tax and

corporate income tax, for the first year, on the equipment for disaster prevention which was bought during the two years from 1985 based on the plan. (Continuation from 1983) (The Act on Special Measures for Tax, Article 11, Paragraph 2, and Article 44).

On the local tax, persons who formulated short-term plan of earthquake disaster prevention regulated by the Large-Scale Earthquake Countermeasures Act, can apply special measures, which reduced taxation standard to 2/3 for the municipal property tax for the period of 5 years on the equipment for disaster prevention which was bought during the five years from January 2, 1982 based on the Plan. (The Local Tax Act Appendix Article 15).

Applicable areas are within areas under intensified measures against earthquake disaster, and applicable equipment is power motor pump, water filter, seismograph and emergency breaker, potable generator and illuminator.

2. On taxation treatment for expenditures of installation of glass scattering prevention films (for the whole area of Japan)

Anyone can account whole amount of such expenditures as "repairing cost", in case such expenditures are below 300,000 yens or below 10 percent of the cost of acquired fixed assets, when he files the final tax return of income tax or corporate income tax, because such expenditures are appraised as required necessary maintenance costs for disaster prevention as well as capital costs for intensification of its physical properties and for increase of heating efficiency.

Other than above mentioned cases, the lesser amount between an amount corresponding with 30 percent of its total expenditures and 10 percent of the cost of acquired fixed assets can be accounted as repairing cost, and the balance can be accounted as capital expenditure. (Income Tax Basic Circular 37-14, 15, and Corporate Income Tax Basic Circular 7-8-4, 5).

3.4 Performance of Earthquake Disaster Prevention Training

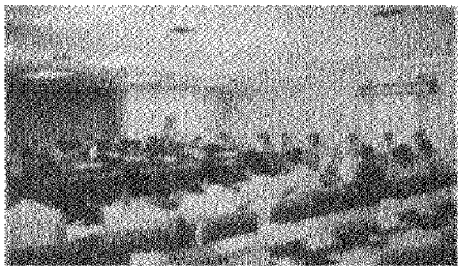
To perform various short-term prevention measures effectively and promptly when a large-scale earthquake occurs, it is necessary to make every steady effort for routine training of information collection and transmission, evacuation and leading, initial fire fighting, aid activity, etc.

In order to achieve this purpose, the national organs and local public bodies have been cooperatively performing earthquake disaster prevention training programs every year since 1971, and started practical integrated disaster prevention training programs in 1973 preparing for the postulated Tokai Earthquake.

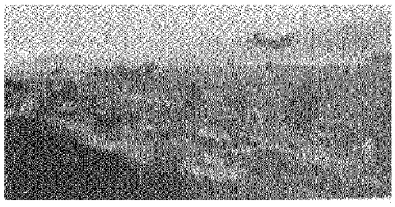
Furthermore, local public bodies have been performing their own training programs other than those cooperative with the national organs.

training programs

Year	Organs of settled headquarters for training	Numbers of participated organs			Assumed earthquake for training
		Ministries	Public corporation	Prefecture	
1971	Prime Mnister's Office	7	2	4	The Great Kanto Earthquake
1972	"	12	2	5	"
1973	"	13	2	5	"
1974	National Land Agency	13	2	5	"
1975	"	13	2	4	Kewasaki right beneath type earthquake
1976	"	17	2	1	The Geat Kanto Earthquake
1977	National Land Agency Fuji City(National Headquarters in the field)	17	2	1	Ansei Tokai Earthquake
1978	National Land Agency Chita City (National Headquarters in the Field)	18	2	2	"
1979	National Land Agency	18	7	6	Tokai Earthquake
1980	National Land Agency	20	10	10	"
1981	National Land Agency	20	10	10	"
1982	National Land Agency	All designated administrative organs	16	10	"
1983	National Land Agency	"	16	10	"
1984	National Land Agency	"	17	10	"
1985	"	"	"	"	"



The national integrated disaster prevention training is supposed to be held on September 1st every year. (Headquarters management training in the National Land Agency)



Each local p *easures against earthquake disaster performs training programs during the Disaster Prevention Week from August 30 to September 5, every year. These pictures were taken in Shizuoka Prefecture.*

4. THE ACT CONCERNING THE SPECIAL FISCAL MEASURES FOR THE PROJECT FOR URGENT IMPROVEMENT OF EARTHQUAKE COUNTERMEASURES IN AREAS UNDER INTENSIFIED MEASURES AGAINST EARTHQUAKE DISASTER

4.1 Conclusion of the Act

It was desired that facilities such as place of refuge, evacuation route, which should be urgently improved based on the Intensified Plan of Earthquake Disaster Prevention, should be supported by special fiscal measures. In May 1980, the Act (hereafter referred to as the Special Fiscal Measures Act) was concluded following a proposal from the Chairman of the Special Committee on Countermeasures against Disasters of the House of Representatives, and necessary expenditures paid by local public bodies for improvement of facilities, which should be urgently done for earthquake disaster prevention, became possible to be paid back at certain coverage or rate as subsidy from the National Government based on the Act.

This Act has a limited period of validity until March 31, 1985 (This limit was extended 5 years until March 31, 1990 in 1985).

4.2 Promotion of Projects for Urgent Improvement of Earthquake Countermeasures

The Project Plan, involving total 356.9 billion yen project cost in the period from 1980 to 1984 fiscal years, concerning six prefectures in the intensified areas was approved by the Prime Minister in December 1980.

Furthermore, regarding projects for remodeling and reinforcement of non-wooden public constructions which were not involved in the objects of the initial plan, such as buildings of public schools and social welfare facilities, a change of the plan, involving additional expenses of 61.1 billion yen, was approved in March and August 1982, and June 1983, time by time. In July 1985, a change of the plan according to the revision of the Act was approved, and, as a result, the total project cost rose up to 565 billion yen. The progress rate of the project as of the end of 1985 was estimated as about 66 percent.