

Extract of the 2022 White Paper on Fire Service

Materials created by the Fire and Disaster Management Agency were
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**The Fire and Disaster Management Agency
(FDMA)**

Extract of the 2022 White Paper on Fire Service

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Section 1 Fire Prevention

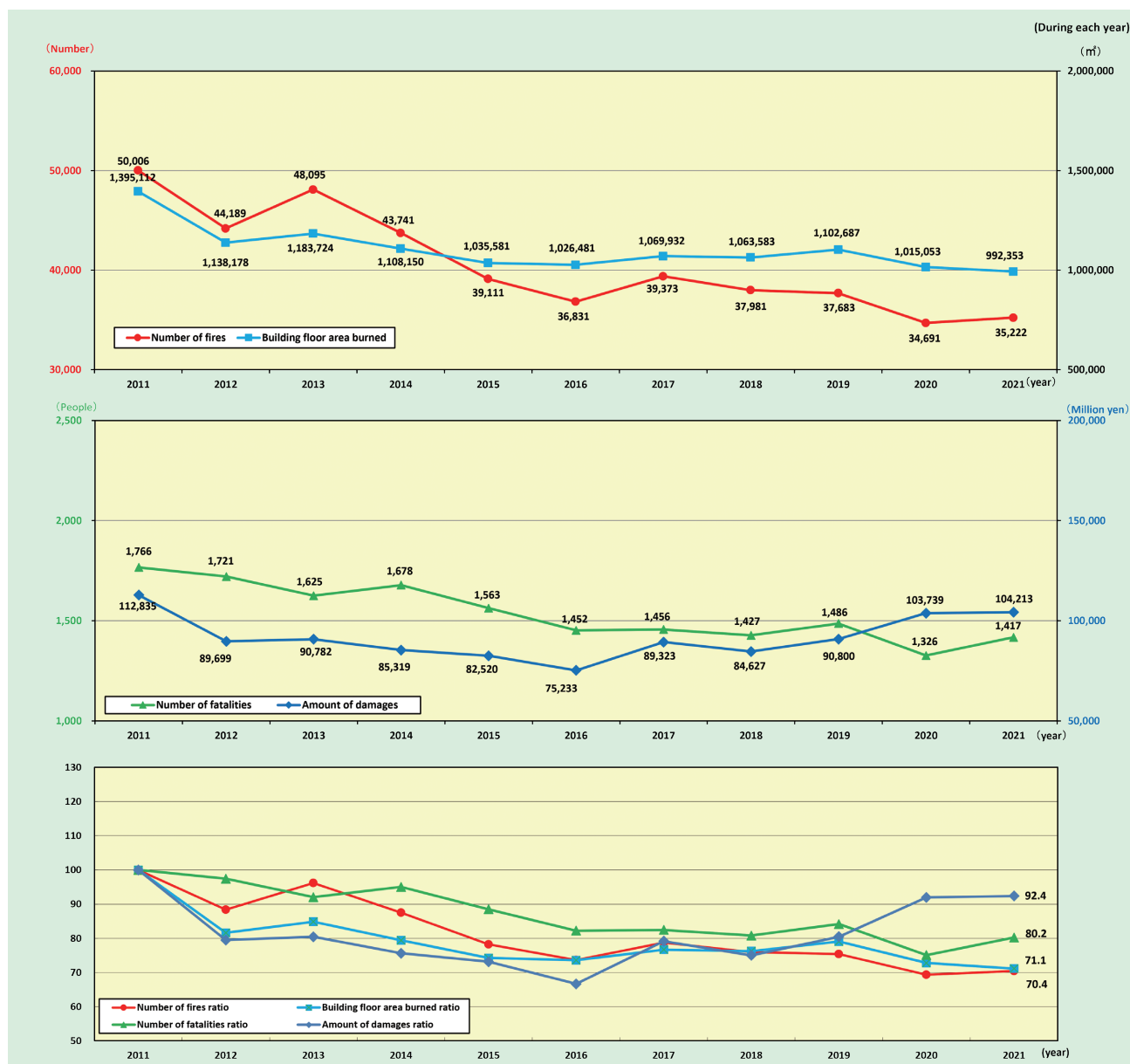
📖 Japanese Original P.49

Current Status and Recent Trends with Fires

Looking at the number of fires since 2011, there has been a downward trend. The number of fires that occurred in 2021 totaled 35,222 (an increase of 531, or 1.5%, from

the previous year), or 70.4% of the 50,006 fires that occurred ten years prior (2011). Furthermore, the number of fatalities from fires has also largely been trending downward since 2011. The number of fatalities from fires in 2021 was 1,417 (an increase of 91, or 6.9%, from the previous year), or 80.2% of the 1,766 fatalities of ten years ago (2011). (Fig.1-1-1, Attachment 1-1-54, untranslated)

Fig. 1-1-1 Changes in the number of fires and their trends



- (Notes)
- 1 Prepared based on "Fire Reports".
 - 2 The figures for each year are calculated from fires that occurred between January and December. The same holds true in this section hereinafter unless otherwise noted.
 - 3 See the left axis for the number of fires, number of fatalities, number of fires ratio, building floor area burned ratio, number of fatalities ratio, and amount of damages ratio, and the right axis for the building floor area burned and the amount of damages.
 - 4 The number of fires ratio, building floor area burned ratio, number of fatalities ratio, and amount of damages ratio are ratios found by taking the values from 2011 to be 100.

—omitted—

Current Status of Fire Prevention Administration

1. Current Status of Residential Fire Alarm Installation

The Fire Service Act and municipal ordinances require the installation of residential fire alarms, and fire departments nationwide are working with volunteer fire corps, women's (female) firefighting clubs, voluntary disaster prevention organizations to ensure that they are installed and maintained. As of June 1, 2022, the nationwide installation rate*¹ was 84.0% and the ordinance compliance rate*² was 67.4%. When viewed by prefecture, Fukui Prefecture had the highest installation rate, and the highest ordinance compliance rate. (**Attachment 1-1-54**, untranslated).

2. Fire Prevention Properties

The Fire Service Act defines the primary properties that are subject to fire prevention administration, such as architectural structures, as “fire prevention properties.” It also mandates the establishment of personnel structures for fire prevention, the installation of fire protection equipment, etc.*³ and the use of flame retardant materials at those fire prevention properties listed in Appended Table I of the Order of Enforcement for the Fire Service Act according to their purpose, size, and so forth.

As of March 31, 2022, the number of fire prevention properties throughout Japan totaled 4,247,828 (this number is from the Survey on the Actual Conditions of Fire Prevention Properties (targeting those fire prevention properties listed in Appended Table I of the Order of Enforcement for the Fire Service Act that are listed in (1) through (16-3) and have a total area of 150m² or larger, and those listed in (17) through (19)); the same hereinafter).

Moreover, the number of fire prevention properties in the 21 major cities (special wards of Tokyo and ordinance-designated cities) was 1,219,223, accounting for 28.7% of the total number of fire prevention properties throughout Japan. Those properties that are particularly concentrated in urban areas include underground malls (86.7% of the national total), semi-underground malls*⁴ (85.7% of the national total), stores engaged in sex-related businesses, etc. (55.7% of the national total). (**Table 1-1-1**)

3. Fire Prevention Management System

(1) Fire Prevention Managers

The Fire Service Act requires that people with management authority for fire prevention properties that contain large numbers of people (hereinafter referred to as “management officials”) appoint fire prevention managers*⁵ who form the core of voluntary fire prevention management structures, and to have them perform operations necessary for fire prevention management that stipulate the implementation of firefighting, reporting, and evacuation drills.

As of March 31, 2022, the number of fire prevention properties that were legally required to establish fire prevention management structures and appoint fire prevention managers totaled 1,079,288 nationwide. Of these, 896,597 properties, which corresponds to 83.1%, have appointed fire prevention managers and notified firefighting agencies to this effect.

Additionally, the number of fire prevention properties where the fire prevention manager has prepared a fire prevention plan for fire prevention management*⁶ in order to carry out proper fire prevention management operations at their own office and notified firefighting agencies to this effect was 847,507, or 78.5% of the total number of properties. (**Attachment 1-1-55**, untranslated)

(2) Supervisors of Fire Prevention Management

For properties like high-rise buildings (buildings that are taller than 31m high), underground malls, semi-underground malls, and other specified properties subject to fire prevention measures*⁷ at or above a certain size where management authority has been divided up, the Fire Service Act stipulates that fire prevention managers are to be appointed to carry out fire prevention management for each area where management authority exists. At the same time, it also states that supervisors of fire prevention management are to be appointed in consultation with fire prevention managers in order to carry out fire prevention management for the building as a whole in an integrated manner. It also mandates that each management official is obligated to ensure the safety of the entire fire prevention property by preparing firefighting plans for fire prevention management for said property as a whole, and by conducting firefighting, reporting, and evacuation drills.

As of March 31, 2022, the number of fire prevention properties that were required to appoint supervisors of fire prevention management totaled 89,772 nationwide. Of these, 57,940, or 64.5%, have appointed supervisors of fire

*¹ The installation rate: The share of households that have installed residential fire alarms in at least one location of the sections of their home in which they are obligated to do so by municipal fire prevention ordinances (including households that are exempt from installing residential fire alarms on account of having installed fire alarm systems, etc.) out of the total number of households.

*² The ordinance compliance rate: The share of households that have installed residential fire alarms in every section of their home in which they are obligated to do so by municipal fire prevention ordinances (including households that are exempt from installing residential fire alarms on account of having installed fire alarm systems, etc.) out of the total number of households.

*³ Fire protection equipment, etc.: Equipment for extinguishing fires, evacuation, and other fire prevention activities (fire extinguishers, sprinkler systems, automatic fire alarms, fire escape equipment, guide lamps, etc.)

*⁴ Semi-underground mall: A combination of an underground passage and shops established in the basement of a building that stand in a row facing this underground passage.

*⁵ Fire prevention managers: People who have been appointed from among those management officials who have certain qualifications, such as having completed a training course on fire prevention management for fire prevention properties, and who are in a managerial or supervisory position where they can appropriately carry out the operations necessary for fire prevention management at said properties.

*⁶ Fire prevention plan for fire prevention management: These are plans that establish matters which are necessary for fire prevention management. Said plans are prepared by fire prevention managers, with fire prevention management operations carried out on the basis of said plans.

*⁷ Specified properties subject to fire prevention measures: Certain properties under fire prevention measures that include department stores, restaurants, and other properties that can accommodate large numbers of people, as well as hospitals, nursing homes for the elderly, kindergartens, and other properties used by people who would require assistance during a disaster.

Table 1-1-1 Number of fire prevention properties

(As of March 31, 2022)

Classification of fire prevention properties			Nationwide	21 major cities	Percentage (%)	Classification of fire prevention properties			Nationwide	21 major cities	Percentage (%)
(1)	a	Theaters, etc.	4,532	650	14.3	(6)	c	(3) Nursery schools, etc.	38,526	8,701	22.6
	b	Public halls, etc.	64,311	6,253	9.7			(4) Child development support centers, etc.	4,397	707	16.1
(2)	a	Cabarets, etc.	1,379	126	9.1			(5) Welfare centers for disabled persons, etc.	24,069	4,080	17.0
	b	Game centers, etc.	8,496	1,608	18.9		Subtotal		90,230	17,559	19.5
	c	Stores engaged in sex-related businesses, etc.	174	97	55.7		d	Kindergartens, etc.	15,433	3,857	25.0
(3)	a	Restaurants, etc.	2,426	431	17.8	(7)	Schools	124,538	28,213	22.7	
	b	Eating and drinking houses	86,598	17,906	20.7	(8)	Libraries, etc.	7,640	862	11.3	
(4)	Department stores, etc.		157,056	28,485	18.1	(9)	a	Special bathhouses	1,732	626	36.1
(5)	a	Hotels, etc.	59,945	8,188	13.7		b	General bathhouses	3,969	868	21.9
	b	Apartment houses, etc.	1,387,512	538,917	38.8	(10)	Railroad depots	3,989	1,423	35.7	
(6)	a	(1) Hospitals that require patient assistance for evacuation	5,722	1,053	18.4	(11)	Temples and shrines, etc.	58,918	12,388	21.0	
		(12)	a	Factories, etc.	484,014		71,340	14.7			
			(2) Clinics with 19 beds or less that need patient assistance for evacuation	2,875	576	20.0	b	Studios	407	148	36.4
		(3) Hospitals(not including those listed in (1)), Clinics with 19 beds or less(not including those listed in (2)) and maternity homes with beds	9,278	2,323	25.0	(13)	a	Parking lots, etc.	52,239	13,950	26.7
	(4) Clinics with no in-patient capacity, maternity homes without beds	45,723	8,575	18.8	b		Aircraft hangars	702	86	12.3	
	Subtotal		63,598	12,527	19.7	(14)	Warehouses	336,405	53,613	15.9	
	b	(1) Short-term welfare facilities for the elderly	45,708	8,854	19.4	(15)	Offices, etc.	496,580	110,560	22.3	
		(2) Shelters	221	36	16.3	(16)	a	Specified multipurpose fire prevention properties	385,715	146,649	38.0
(3) Nurseries		133	31	23.3	b		Unspecified multipurpose fire prevention properties	281,620	128,925	45.8	
(4) Welfare facilities for disabled children		530	76	14.3	(16-2)	Underground malls	60	52	86.7		
(5) Support facilities for the disabled		7,832	1,336	17.1	(16-3)	Semi-underground malls	7	6	85.7		
Subtotal		54,424	10,333	19.0	(17)	Cultural properties	9,648	1,533	15.9		
c	(1) Elderly daycare centers, etc.	23,012	4,029	17.5	(18)	Arcades	1,260	470	37.3		
	(2) Rehabilitation facilities	226	42	18.6	(19)	Mountain forests	0	0	—		
						Total		4,247,828	1,219,223	28.7	

(Notes) 1 Prepared based on the Survey on the Actual Conditions of Fire Prevention Properties (targeting those fire prevention properties listed in Appended Table I of the Ordinance of Enforcement for the Fire Service Act that are listed in (1) through (16-3) and have a total area of 150m² or larger, and those listed in (17) through (19); the same hereafter).

2 The 21 major cities refer to the 23 wards of Tokyo and 20 ordinance-designated cities (Sapporo City, Sendai City, Saitama City, Chiba City, Yokohama City, Kawasaki City, Sagami-hara City, Niigata City, Shizuoka City, Hamamatsu City, Nagoya City, Kyoto City, Osaka City, Sakai City, Kobe City, Okayama City, Hiroshima City, Kitakyushu City, Fukuoka City, and Kumamoto City).

prevention management and notified firefighting agencies to this effect.

Furthermore, the number of fire prevention properties that have prepared overall fire prevention plans in order to carry out fire prevention management for the building as a whole in an integrated manner, and that have notified firefighting agencies to this effect was 56,273, or 62.7% of the total number of properties. (**Attachment 1-1-56**, untranslated)

(3) Periodic Inspection and Reporting System for Fire Prevention Properties

The Fire Service Act mandates that management officials at fire prevention properties with certain purposes

or structures have people with expertise in fire prevention (hereinafter referred to as “qualified inspectors of fire prevention properties”) perform inspections and report the inspection results to firefighting agencies once a year.

These qualified inspectors of fire prevention properties consist of people with a certain level of fire prevention knowledge, such as fire protection equipment engineers*⁸ with three or more years of practical experience in construction work for fire protection equipment, etc., or people with three or more years of practical experience as fire prevention managers. They must also complete a training course offered by a corporation that has been registered by the Minister of Internal Affairs and Communications, and have been issued a certificate

*⁸ Fire protection equipment engineer: A person with expert knowledge of fire protection equipment etc. who has been issued a fire protection equipment engineer certification.

attesting that they have acquired the necessary knowledge and skills regarding inspections for fire prevention properties.

As of March 31, 2022, the number of such inspectors totaled 34,282.

In addition, fire prevention properties for which periodic inspection reports have been mandated and for which three years have passed since the start of management are exempted from the obligation of inspections and reports for three years if they are certified as being in good compliance with the standards of the Fire Service Act through an inspection conducted by a firefighting agency on the basis of an application from the management officials from said fire prevention property.

Fire prevention properties that have been acknowledged as being in compliance with the inspection standards by a qualified inspector of fire prevention properties may display a “Fire Prevention Standard Inspection Certificate of Completion.” Those that have been acknowledged as having excellent compliance with the standards in fire prevention laws and ordinances by firefighting agencies may display a “Fire Prevention Certificate of Excellence.”

4. Disaster Prevention Management System

(1) Disaster Prevention Managers

In order to handle imminent threats such as major earthquakes, the Fire Service Act mandates that those people with authority for the management of large-scale and high-rise buildings and the like (hereinafter referred to as “management officials”) are to prepare fire prevention plans for disaster prevention management*⁹ suited to earthquakes and other disasters, appoint disaster prevention managers*¹⁰ responsible for emergency preparedness and evacuation drills related to damage specific to earthquakes, and establish fire defense organizations for self-protection*¹¹ to carry out the necessary operations in order to mitigate damage from fires and other disasters.

As of March 31, 2022, the number of properties under disaster prevention measures that were legally required to establish disaster prevention management systems and appoint disaster prevention managers totaled 10,171 throughout Japan. Of these, 8,746, or 86.0%, have appointed disaster prevention managers and notified firefighting agencies to this effect.

Furthermore, the number of properties under disaster prevention measures at which the disaster prevention manager has prepared firefighting plans for disaster prevention management, in order to carry out the appropriate disaster prevention management operations at their own offices and other establishments, and notified firefighting agencies to this effect was 8,340, or 82.0% of the total. The number of said properties that have established fire defense organizations for self-protection

came to 9,269, or 91.1% of the total. (Attachment 1-1-57, untranslated)

(2) Supervisors of Disaster Prevention Management

For those properties that require disaster prevention management where management authority has been divided up, the Fire Service Act stipulates that disaster prevention managers are to be appointed to carry out disaster prevention. At the same time, it also stipulates that supervisors of disaster prevention management are to be appointed in consultation with disaster prevention managers in order to carry out disaster prevention management for the building as a whole in an integrated manner. Each management official is obligated to ensure fire and disaster safety for the disaster prevention property as a whole.

As of March 31, 2022, the number of fire prevention properties that were required to appoint supervisors of disaster prevention management totaled 3,184 nationwide. Of these, 2,747, or 86.3%, have appointed supervisors of disaster prevention management and notified firefighting agencies to this effect. Furthermore, the number of disaster prevention properties that have prepared firefighting plans for the whole building in order to carry out disaster prevention management for the building as a whole in an integrated manner, and that have notified firefighting agencies to this effect, was 2,695, or 84.6% of the total. (Attachment 1-1-58, untranslated)

5. Onsite Inspections and Corrections of Violations

(1) Current Status of Onsite Inspections and Corrections of Violations

Firefighting agencies enter fire prevention properties to perform onsite inspections pursuant to the Fire Service Act when it is necessary to do so for the sake of fire prevention.

The number of times onsite inspections were carried out by firefighting agencies throughout Japan in FY2021 totaled 684,027. (Attachment 1-1-59, untranslated)

Fire chiefs or fire station chiefs may order measures that must be taken with respect to deficiencies in fire prevention management at fire prevention properties, such as failure to install fire protection equipment, or other problems brought to light through onsite inspections. Such measures include appointing fire prevention managers and installing fire protection equipment or special fire protection equipment, etc., pursuant to the Fire Service Act.

In addition, in cases where this is recognized as posing a hazard for fire prevention, necessary measures such as repairs, relocation, elimination of hazards, as well as prohibition or restriction of use of the relevant fire prevention property may be ordered pursuant to the Fire

*⁹ Fire prevention plans for disaster prevention management: These are plans that establish matters which are necessary for disaster prevention management.

*¹⁰ Disaster prevention managers: People who have been appointed from among those management officials who have certain qualifications, such as having completed a training course on disaster prevention management, and who are in a managerial or supervisory position where they can appropriately carry out the operations necessary for disaster prevention management at disaster prevention properties.

*¹¹ Fire defense organizations for self-protection: These are personal organizations comprised of people like employees at properties under fire prevention measures. They carry out the operations necessary in order to mitigate the damage from fires and other disasters when they occur based on the roles established in the firefighting plan.

Service Act. The act also states that in the event that such an order is issued, public notice shall be given.

In cases where violations of fire prevention laws or ordinances are discovered as a result of such onsite inspections, the fire chief or fire station chief works to redress these violations to bring them back into legal compliance, such as by issuing warnings or other remedial instructions, orders, etc. (Attachment 1-1-60, 61, 62, 63, untranslated)

Particularly for properties with serious violations (buildings that are required to have indoor fire hydrant systems, sprinkler systems, or automatic fire alarm systems installed but do not have any such fire protection equipment installed or are in a state where the original function of such equipment is impaired), because of the high risk of fire, the fire chief or fire station chief provides focused corrective guidance based on the seriousness of the violation, and if the corrective guidance is not followed, implements measures such as warnings and orders to have the violation corrected as soon as possible. (Attachment 1-1-64, untranslated)

(2) Fire Safety Certification Mark System

This system provides users with information on a building's compliance with laws and ordinances related to fire prevention and construction and hotels, Japanese-style hotels, and other facilities that conform to the standards are allowed to display the mark (silver).

In addition, those hotels and other facilities that have been issued silver display marks for three years in a row and which meet the standards related to laws and ordinances on fire prevention and construction are allowed to display a gold display mark.

Visitors to the FDMA's website can check to confirm hotels that have been issued the Fire Safety Certification Mark throughout Japan (reference URL: https://www.fdma.go.jp/relocation/kasai_yobo/hyoujiseido/).

(3) Initiation of a System for Publicly Announcing Violating Properties

The System for Publicly Announcing Violating Properties is a system for announcing the details of legal violations on the websites of municipal governments based on the ordinances of said municipalities. This is aimed at specified properties under fire prevention measures that have not yet installed indoor fire hydrants, sprinkler systems, or fire alarm systems, despite being obligated to do so. This announcement system has been initiated at fire departments nationwide.

Information on things like the implementation status of the public announcement system and its scheduled implementation period for municipalities throughout Japan can be confirmed via the FDMA's website (reference URL: <https://www.fdma.go.jp/relocation/publication/index.html>).

6. Fire Protection Equipment, etc.

(1) Current Status of Fire Prevention Consent

Fire prevention consent is a system that was established with the goal of boosting the safety of buildings by having personnel from firefighting agencies get involved in fire prevention for buildings starting from the design stage in their capacity as experts on fire prevention.

The number of cases processed regarding fire prevention

consent work throughout Japan in FY2021 totaled 207,611, with only 13 of these failing to receive consent. (Attachment 1-1-65, untranslated)

(2) Current Status of the Installation of Fire Protection Equipment, etc.

The Fire Service Act states that the relevant personnel from fire prevention properties must install and properly maintain the necessary fire protection equipment, etc. according to the purpose, size, structure, and capacity of the property in question.

A look at the installation status of primary fire protection equipment, etc. in specified fire prevention properties throughout Japan reveals that, as of March 31, 2022, the installation rate for sprinkler systems (number installed vs. number that need to be installed) was 99.9%, while the rate for automatic fire alarms was 99.6%. (Attachment 1-1-66, untranslated)

With respect to the technical standards pertaining to fire protection equipment, etc., regulations are being successively set in place in accordance with technological progress and societal demands.

Moreover, regarding properties that violate the Fire Service Act, such as a violation of the obligation to install fire protection equipment, etc., the government will proactively issue administrative orders and other measures based on the Fire Service Act to further promote prompt and effective handling of violations.

(3) Fire Protection Equipment Engineers and Fire Protection Equipment Inspectors

Efforts are made to ensure the performance of fire protection equipment, etc. via the inspector system for fire protection machinery and tools. However, if there are deficiencies or defects at the installation stage, then such equipment will be rendered incapable of performing properly when a fire does occur. To prevent such circumstances, the installation and maintenance of certain fire protection equipment, etc. can only be performed by fire protection equipment engineers.

Furthermore, fire protection equipment, etc. must be properly maintained on a daily basis to ensure that it is capable of performing at any time. As a result, it has been mandated that periodic inspections be performed and the inspection results be reported. These inspections, which are a prerequisite for maintenance, require knowledge and skills with regard to fire protection equipment, etc. Therefore, the relevant personnel from fire prevention properties must have fire protection equipment engineers or fire protection equipment inspectors (people who have completed certain training courses offered by corporations that have been registered by the Commissioner of the FDMA and been issued a fire protection equipment inspector certificate) perform the inspections on the fire protection equipment, etc.

Efforts are made to improve the quality of these fire protection equipment engineers and fire protection equipment inspectors by mandating that they undergo re-training at certain fixed intervals after they have received their license in order for them to acquire new knowledge and skills concerning the fire protection equipment, etc. Moreover, these people will be ordered to return their license or face a similar punishment in the event that they violate any of the fire prevention laws or ordinances.

As of March 31, 2022, the total number of fire

protection equipment engineers came to 1,288,864 (Attachment 1-1-67, untranslated). In addition, the number of fire protection equipment inspectors totaled 762 special inspectors (for special fire protection equipment, etc.), 166,549 Class 1 inspectors (for mechanical systems) and 156,861 Class 2 inspectors (for electrical systems).

(4) Flame Retardancy Regulations

A. Usage Status of Flame Retardant Materials

Fire prevention properties that must give forethought to fire prevention due to their structural features or configuration, such as high-rise buildings and underground malls, as well as fire prevention properties like theaters, hotels, and hospitals that are used by large unspecified numbers of people and people requiring special consideration have been designated as “flame retardancy and fire prevention properties.” In these properties, the use of flame-retardant materials for various items that are likely to become ignition sources is very effective in preventing fires from starting and also in controlling the spread of fires in their initial stages. Therefore, the Fire Service Act mandates that these properties use materials with the prescribed flame retardant performance (hereinafter referred to as “flame retardant materials”) for curtains, stage curtains, plywood display boards, carpets, and other goods used (hereinafter referred to as “goods under the flame retardancy requirement”).

As of March 31, 2022, the number of flame retardancy and fire prevention properties totaled 996,820. The conformance rate (share of the flame retardancy and fire prevention properties where flame retardant materials are used for all of the goods under the flame retardancy requirements at said properties) at flame retardancy and fire prevention properties using curtains and stage curtains was 88.2%, while it was 88.2% at those using carpets, and 85.3% at those using plywood display boards. (Attachment 1-1-68, untranslated)

B. Public Awareness of Flame Retardant Materials for Bedding and Other Goods

Aside from those goods under the flame retardancy requirement stipulated in the Fire Service Act such as curtains and carpets, the use of fireproof materials for futons, pajamas, automobile and motorcycle body covers, etc. is also extremely effective at preventing fires. Therefore, the FDMA spreads public awareness of these by uploading videos detailing their effects to its website (reference URL: https://www.fdma.go.jp/relocation/html/life/yobou_contents/fire_retardant/).

(5) Regulations for Equipment and Tools that Use Fire

From the perspective of fire prevention, the location, construction, management, and handling of equipment and tools that use fire, including home gas burners, stoves, hot-water heaters, fireplaces, kitchen equipment, and sauna equipment, are regulated via the fire prevention ordinances established by each municipality. These are established pursuant to the Ministerial Ordinance Establishing Standards for Enacting Ordinances on the Location, Construction, and Management of Eligible Equipment that Uses Fire and the Handling of Eligible Tools that Use Fire.

7. Inspection System for Fire Protection Machinery and Tools, etc.

(1) Inspections

According to the Fire Service Act, fire protection machinery or tools that are subject to inspection (hereinafter referred to as “machinery and tools subject to inspection”) are prohibited from being sold, displayed for commercial purposes, and so forth unless they pass inspections and include a label indicating this.

The machinery and tools subject to inspection include the 12 items stipulated in the Order for Enforcement of the Fire Service Act, including fire extinguishers and enclosed sprinkler heads.

These inspections consist of “model approvals” (approval by the Minister of Internal Affairs and Communications indicating that the shape and other factors of the machinery and tools conform with the technical specifications established in ministerial ordinances) and “model compliance inspections” (inspections conducted by Japan Fire Equipment Inspection Institute or registered certification body to confirm that the shape and other factors of the individual machinery and tools subject to inspection are identical to the shape, etc. for models of said equipment that have received model approval).

Moreover, for machinery and tools subject to inspection with regard to the development of new technologies, inspections can be carried out via the technical specifications established by the Minister of Internal Affairs and Communications for those items that conform to the technical standards established by said ministerial ordinance in terms of their shape, etc. or those acknowledged as having performance that meets or exceeds this level. Through this, the aim is to enhance the inspection system so as to promote technological innovation with machinery and tools subject to inspection.

Based on past cases of misconduct, the Fire Service Act stipulated collection orders by the Minister of Internal Affairs and Communications and penalties within the verification system for the distribution of nonconforming products or machinery and tools subject to verification without conformity marking in the market.

Type approvals in FY2021 included 11 fire extinguishers, 3 fire extinguishing agent for fire extinguishers, 1 fire-extinguishing foams, 41 detectors or transmitters for fire alarm systems, 9 repeaters, 18 receivers, 11 residential fire smoke detectors, 7 enclosed-type sprinkler heads, 4 water flow detecting devices, 20 deluge valves, 6 metallic escape ladders, and 0 descending devices. The total number of products that have passed compliance inspection is 23,732,354. (Attachment 1-1-69, untranslated)

(2) Self-labeling

According to the Fire Service Act, manufacturers of machinery and tools that are subject to self-labeling (hereinafter referred to as “machinery and tools subject to self-labeling”) are the responsibility of manufacturers to confirm their compliance with the specifications on their own. The system also gives approval for labeling that have been reported to the Minister of Internal Affairs and Communications in advance. And they are prohibited from being sold, displayed for commercial purposes, and so forth unless they include a label.

Similar to machinery and tools subject to inspection,

the Fire Service Act stipulates collection orders via the Minister of Internal Affairs and Communications and penal provisions for machinery and tools subject to self-labeling which are not in compliance with the standards, or which lack labels indicating their compliance.

The machinery and tools subject to self-labeling are six items specified in the Order for Enforcement of the Fire Service Act, including power fire pumps and fire hoses.

The number of reports from manufacturers in FY2021 totaled 7 for power fire pumps, 25 for fire hoses, 0 for fire suction hose, 16 for couplers, 0 for disposable aerosol fire extinguishers, and 2 for electric leak alarms.

8. Performance Inspections of Technical Standards for Fire Protection Equipment, etc.

When it comes to the technical standards for fire protection equipment, etc., technical development in the fields of fire and other disaster prevention is promoted, and performance regulations are adopted to ensure that even more effective fire prevention and safety measures can be established.

The basic philosophy behind this is to judge whether equipment offers performance that is at or above the level of performance of the installed fire protection equipment, etc. based on the conventional technical standards. Equipment that has been confirmed to be at or above the conventional performance level is approved for installation in place of existing fire protection equipment, etc.

The performance demanded of fire protection equipment, etc. is divided up into three categories. These are “initial spread inhibition performance,” which is performance for inhibiting the spread of fires during their initial stages, “evacuation safety support performance,” which is performance that supports safe evacuating during fires, and “firefighting activity support performance,” which is performance that supports the activities of firefighting teams. For those for which a certain level of knowledge has been obtained, equivalence will be assessed by objective verification methods (methods of objectively and impartially verifying newly developed technologies and technical innovations).

At the same time, a certification system via the Minister of Internal Affairs and Communications has been established aimed at equipment for which evaluations

of its equivalence cannot be performed solely through the existing objective verification methods (such as special fire protection equipment, etc.). Under this system, applications are made for each property under fire prevention measures regarding special fire protection equipment, etc. for which general inspection standards have not been established. The Minister of Internal Affairs and Communications will then perform an examination based on the evaluation results from a performance evaluation agency (the Japan Fire Equipment Inspection Institute or a registered inspection body), and equipment that has been acknowledged as having the necessary level of performance can be installed. As of March 31, 2022, 75 cases of special fire protection equipment, etc. have been approved. (Attachment 1-1-70, untranslated)

9. Current Status of Investigations into the Causes of Fires

Investigating the causes of fires is unequivocally the role of local governments, but it is the duty of the national government to complement them in this. In cases where there has been a request from a firefighting agency, or the Commissioner of the FDMA has deemed that there is a particular necessity in doing so, an investigation into the causes of a fire can be carried out by the Commissioner of the FDMA. (see Chap. 6 “Responses to Investigations into the Causes of Fires, etc. and Disaster Accidents”)

Investigation teams formed from personnel from the FDMA according to the type of fire carry out the investigations into the causes of the fire through this system in coordination with firefighting agencies. The knowledge and data obtained from the investigations is reflected in policies for fire prevention administration as necessary. Cases where responses such as the revision of fire prevention laws and ordinances were carried out based on the results of investigations into the causes of fires conducted by the Commissioner of the FDMA since 2012 are shown in Table 1-1-2.

10. Promoting Countermeasures to Product Fires

In recent years, as the causes of fires have grown extremely diverse, products close to the general public in their daily lives have begun causing fires as well,

Table 1-1-2 Revisions to the fire prevention laws and ordinances based on investigations into the causes of fires conducted by the Commissioner of the FDMA since 2012

No.	Date of fire	Location	Building purpose, etc.	Responses by the FDMA
1	May 13, 2012	Fukuyama City, Hiroshima Prefecture	Hotel (10 casualties)	Revised the Order for Enforcement of the Fire Service Act and other legislation, and strengthened installation standards for automatic fire alarms. Also restructured and began applying a labeling system that provides users with information on buildings that conform to fire prevention standards.
2	February 8, 2013	Nagasaki City, Nagasaki Prefecture	Group home (12 casualties)	Revised the Order for Enforcement of the Fire Service Act and other legislation. Strengthened installation standards for sprinkler systems and mandated that automatic fire alarms and fire notification alarms be interlinked.
3	August 15, 2013	Fukuchiyama City, Kyoto Prefecture	Fireworks festival (59 casualties)	Revised the Order for Enforcement of the Fire Service Act and the Fire Prevention Ordinance (Example). Mandated the submission of plans related to operations necessary for fire prevention at outdoor event venues at or above a certain size, and mandated that fire extinguishers be prepared.
4	October 11, 2013	Fukuoka City, Fukuoka Prefecture	Medical clinic (15 casualties)	Revised the Order for Enforcement of the Fire Service Act and other legislation. Reassessed the installation standards for fire extinguishing equipment, indoor fire hydrants, sprinkler systems, power fire pump equipment, and fire alarms that notify firefighting agencies.

including automobiles and other vehicles, electronic appliances, and burning appliances. Given strong demand to ensure consumer safety and peace of mind, the FDMA has been strengthening its initiatives to combat these product fires.

For such fires, the FDMA has established a structure whereby it collects fire information from firefighting agencies in a comprehensive manner and aggregates the number of fires for each type of product which serves as an ignition source. It then provides the public with warnings and alerts quickly and effectively by announcing information like the names of faulty products and their manufacturers every quarter.

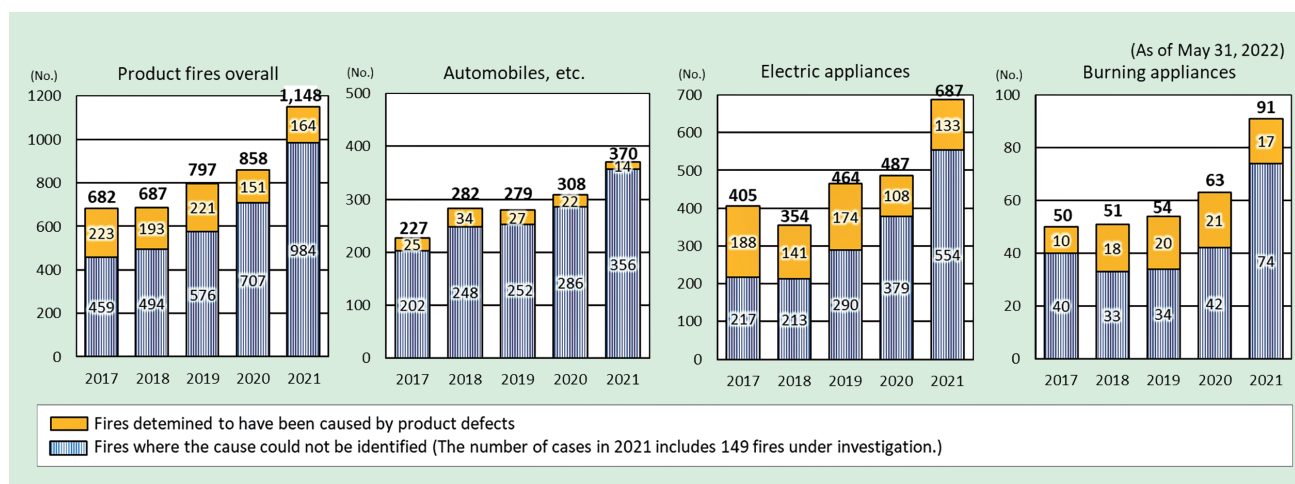
Fires that occurred in FY2021 which firefighting agencies deemed to have been caused by defects in automobiles and other vehicles, as well as electronic appliances and burning appliances were aggregated. From this, it was discovered that of the total of 1,148 product fires, 164 were fires deemed to have been caused by product defects, 984 were fires (including under investigation) that could not be determined to have occurred from a defect in a specified product as the direct cause. (Fig. 1-1-19)

The results of these investigations are reported to

firefighting agencies throughout Japan. Furthermore, the collected fire information is shared between the Consumer Affairs Agency, the Ministry of Economy, Trade and Industry, the Ministry of Land, Infrastructure, Transport and Tourism, and the National Institute of Technology and Evaluation (NITE), which work together to promote countermeasures to product fires.

With respect to investigations into the causes of fires carried out by firefighting agencies throughout Japan, efforts are also being made to improve the investigation skills of firefighting agencies. Examples of this include providing them with technical support such as scientific investigation based on the expert knowledge, equipment, and materials of the National Research Institute of Fire and Disaster, etc. In addition to working to enhance investigations into the causes of fires and the structures for this, the FDMA also strives to proactively collect information on product fires and strengthen collaborations with relevant agencies. Through this, it is moving forward with ensuring consumer safety and peace of mind, while preventing fire accidents caused by products.

Fig. 1-1-19 Trends in the survey results on product fires over the past five years



(Note) See the FDMA website for details (URL : <https://www.fdma.go.jp/mission/prevention/cause/34530.html>).

—omitted—

Section 2 Countermeasures to Disasters at Facilities for Hazardous Materials

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Current Status and Recent Trends in Disasters at Facilities for Hazardous Materials

Accidents at facilities for hazardous materials*¹ are broadly classified into fires (including explosions) and spills of hazardous materials*². The number of fire and spillage accidents at facilities for hazardous materials has been trending upward since 1994. In 2021, there were 224 fires and 422 spills for a total of 646 accidents. This represents an increase of 84 accidents compared with the previous year. (Fig. 1-2-1)

1. Fire Accidents

The number of fire accidents that occurred at facilities for hazardous materials in 2021 was 224. This is an increase of roughly 2.1-times compared with the 107 such accidents in 1993, which had the lowest number of fire accidents since 1989, despite the fact that the number

of facilities for hazardous materials has decreased. Accidents attributable to human factors such as inadequate maintenance and inadequate operating checks account for the majority of the primary causes for these fires.

(1) Number of Fire Accidents at Facilities for Hazardous Materials and their Damage

The number of fire accidents that occurred at facilities for hazardous materials in 2021 was 224 (37 more than the previous year). The amount of damages totaled 7,046.92 million yen (an increase of 5,956.57 million yen year-on-year), and they resulted in 0 deaths (a decrease of 2 year-on-year) and 36 people injured (an increase of 3 people year-on-year). (Fig. 1-2-2)

Moreover, looking at the number of fire accidents that occurred by type of facility for hazardous materials reveals that the majority occurred at general outlets, followed by manufacturing facilities, and fuel supply depots, in that order. The sum of these 3 facility classifications accounts for 95.1% of the total accidents. (Fig. 1-2-3)

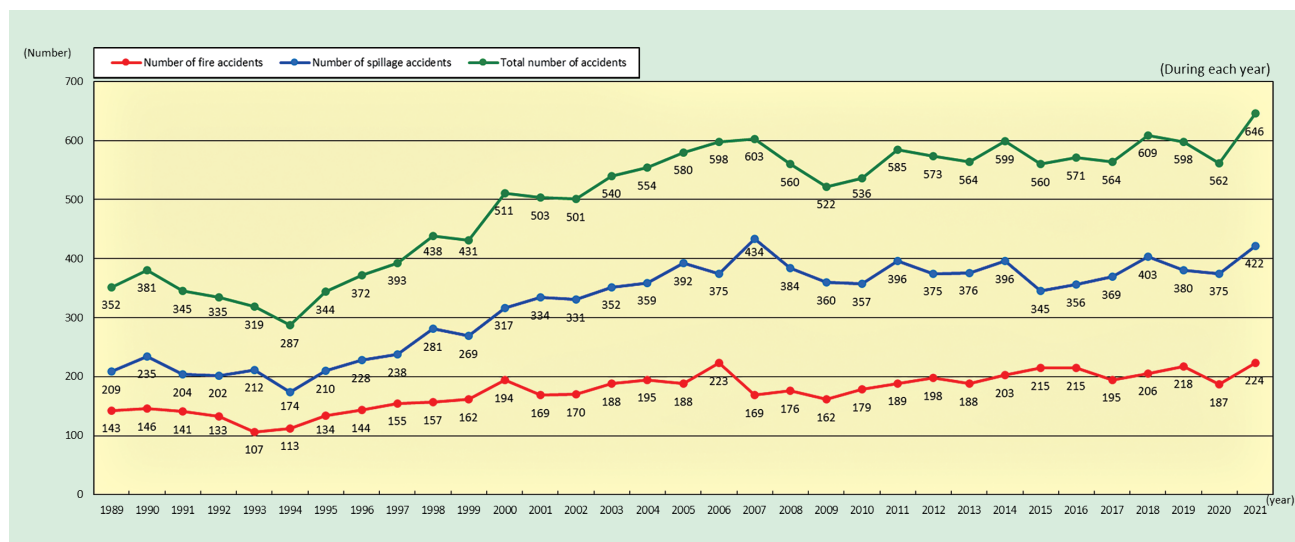
*1 Facilities for hazardous materials: These are facilities that have received authorization from municipal mayors and similar officials as facilities that store or handle hazardous materials at or above the quantities specified in the Fire Service Act. As described below, they are classified into three types: manufacturing facilities, storage facilities, and handling facilities

Classification		Details
Manufacturing facilities		Facilities that manufacture hazardous materials
Storage facilities	Indoor storage facilities	Store hazardous materials inside buildings
	Outdoor storage tanks	Store hazardous materials in tanks located outdoors
	Indoor storage tanks	Store hazardous materials in tanks located indoors
	Underground storage tanks	Store hazardous materials in tanks located below the ground's surface
	Simple storage tanks	Stores hazardous materials in small tanks less than 600 L
	Transfer storage tanks	Store hazardous materials in tanks that have been affixed to vehicles
Handling facilities	Outdoor storage facilities	Store certain hazardous materials in containers in outdoor locations
	Fuel supply depots	Handling facilities that fuel vehicles and the like
	Sales handling facilities	Stores that sell containers full of hazardous materials
	Transfer handling facilities	Handling facilities that transfer hazardous materials through pipes
General outlets		Handling facilities other than the above three types of handling facilities

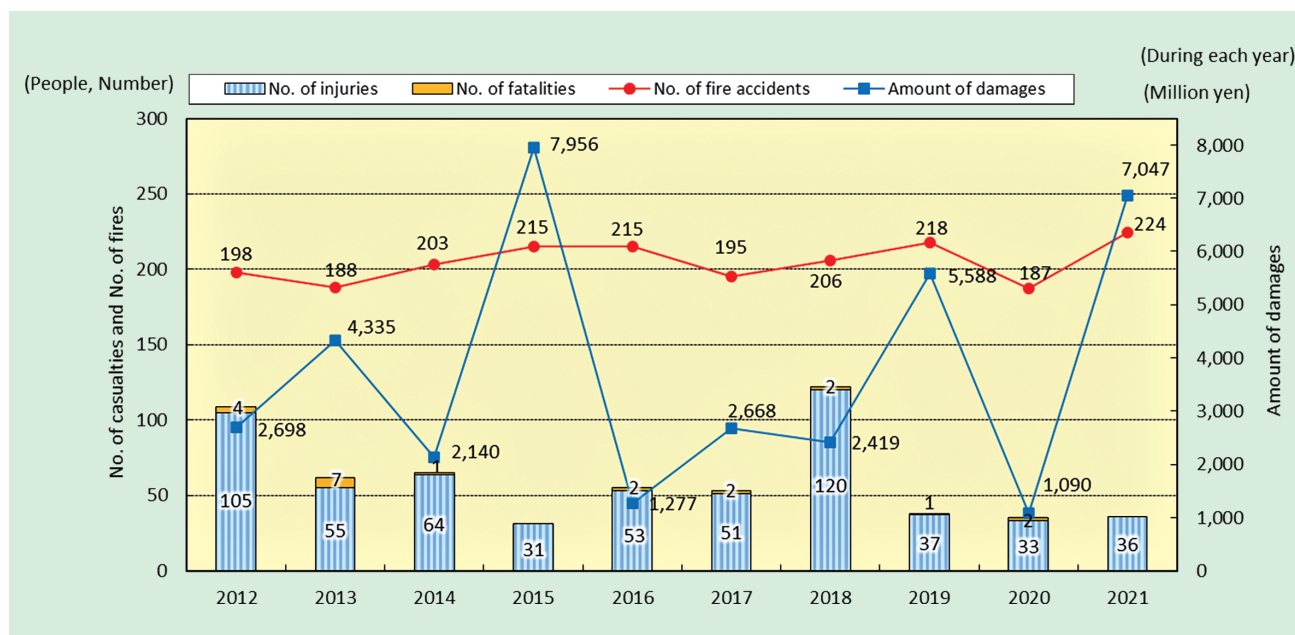
*2 Hazardous materials: The Fire Service Act (Article 2-7) defines them as such: "The term 'hazardous materials' means the materials listed in the Names of Items column of Appended Table 1, which have the properties listed in the Nature column of said table according to the Categories specified in said table." Moreover, the properties of each hazardous material are defined for each type in the "Remarks" to Appended Table I of the Fire Service Act.

[Hazardous materials listed in Appended Table I and their characteristics]

Category	Nature	Properties	Representative substances
Category 1	Oxidizing solids	These are solids that do not burn themselves, but which have the property of causing other substances to oxidize powerfully. When mixed with inflammable materials, they degrade as a result of heat, impacts, or friction, and give rise to extremely intense combustion.	Sodium chlorate, potassium nitrate, ammonium nitrate
Category 2	Combustible solids	These are solids that easily ignite from fire or solids that easily catch fire at relatively low temperatures (less than 40°C). They easily catch fire, are quick to combust, and are difficult to extinguish.	Red phosphorous, sulfur, iron powder, solid alcohol, lacquer putty
Category 3	Spontaneously combustible substances and water-reactive substances	These substances spontaneously combust when exposed to air, or either combust or generate combustible gasses when they come into contact with water.	Sodium, alkyl aluminum, yellow phosphorous
Category 4	Inflammable liquids	These are liquids that are inflammable.	Gasoline, kerosene, light oil, heavy oil, acetone, ethanol
Category 5	Self-reactive substances	These are solids or liquids that generate large quantities of heat at relatively low temperatures or promote explosive reactions as a result of thermolysis and other reactions.	Nitroglycerin, trinitrotoluene, hydroxylamine
Category 6	Oxidizing liquids	These are liquids that do not burn themselves, but which have the property of promoting the combustion of other flammable substances they are mixed with.	Perchloric acid, hydrogen peroxide, nitric acid

Fig. 1-2-1 Trends in the number of fire and spillage accidents at facilities for hazardous materials

- (Notes) 1 Prepared based on "Overview of the Accident Reports on Hazardous Materials".
 2 In order to get a grasp of trends regarding the number of accidents that occur in each year, the number of accidents caused by earthquakes with a seismic intensity of six-lower or greater (since September 1996 this was changed to a seismic intensity of six or greater) is excluded.

Fig. 1-2-2 Number of fire accidents at facilities for hazardous materials and their damage

(Note) Prepared based on "Overview of the Accident Reports on Hazardous Materials".

At the same time, 110 of the 224 fire accidents (or 49.1% of the total) were cases where a hazardous material served as the causative agent for the fire. (Fig. 1-2-4)

(2) Causative Factors behind the Fire Accidents at Facilities for Hazardous Materials

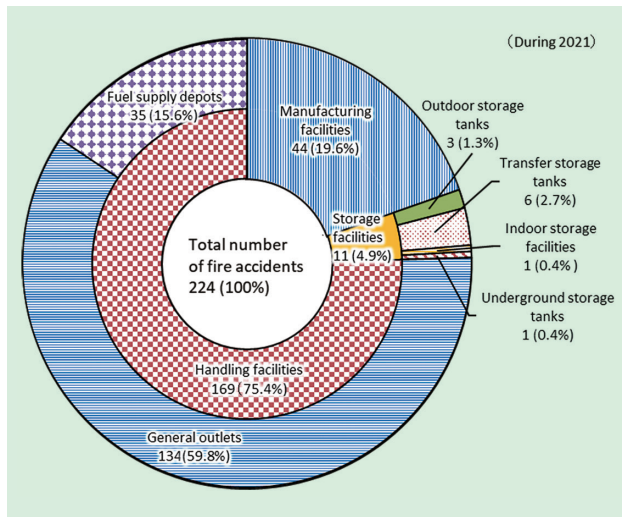
A look at the causative factors behind the fire accidents at facilities for hazardous materials that occurred in 2021 reveals that human factors accounted for 53.6%, physical factors accounted for 27.2%, and the total for other causes, unknown, and under investigation came to 19.2%. (Fig. 1-2-5)

When viewed by ignition source, those ignited by static electricity sparks were the most common at 50 (an increase

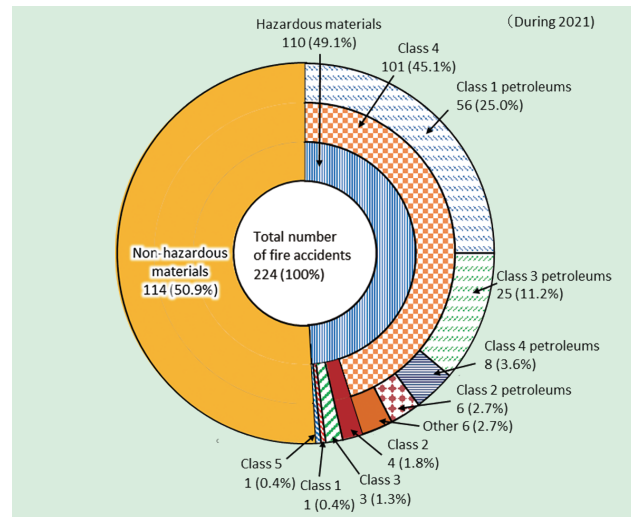
of 19 year-on-year), followed by 26 from overheating (a decrease of 3 year-on-year), 23 from high temperature surface heat (a decrease of 4 year-on-year) and 23 from electrical sparks (an increase of 14 year-on-year). (Fig. 1-2-6)

(3) Fire Accidents at Unauthorized Facilities

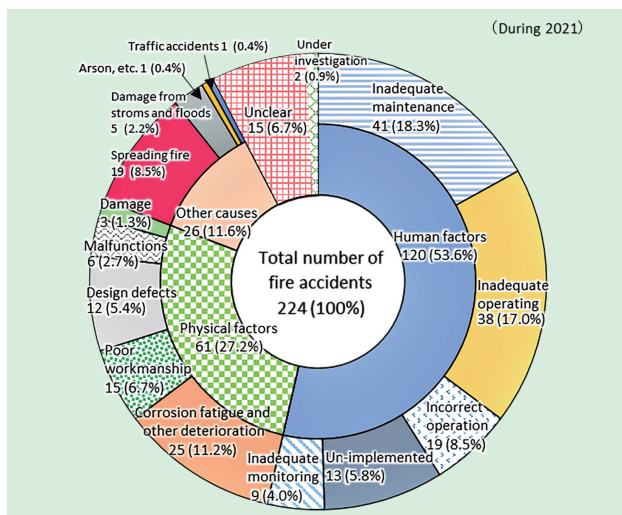
The number of fire accidents that occurred at facilities which were supposed to receive authorization as facilities for hazardous materials yet which failed to do so (hereinafter referred to as "unauthorized facilities") in 2021 was 7 (an increase of 4 year-on-year), leaving 0 people dead (the same as the previous year) and 3 injured (an increase of 1 year-on-year).

Fig. 1-2-3 Number of fire accidents by type of facility for hazardous materials

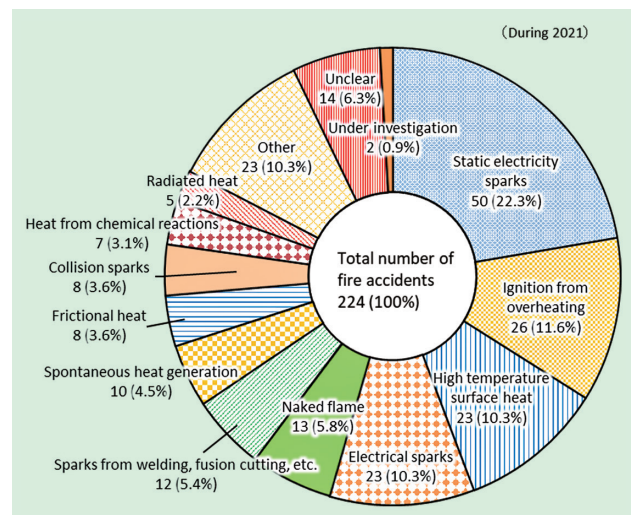
- (Notes) 1 Prepared based on "Overview of the Accident Reports on Hazardous Materials".
 2 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

Fig. 1-2-4 Number of fire accidents by causative agent for the fire

- (Notes) 1 Prepared based on "Overview of the Accident Reports on Hazardous Materials".
 2 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

Fig. 1-2-5 Number of fire accidents by causative factor

- (Notes) 1 Prepared based on "Overview of the Accident Reports on Hazardous Materials".
 2 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

Fig. 1-2-6 Number of fire accidents by ignition source

- (Notes) 1 Prepared based on "Overview of the Accident Reports on Hazardous Materials".
 2 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

(4) Fire Accidents during the Transportation of Hazardous Materials

In 2021, 1 fire accidents occurred during the transportation of hazardous materials (an increase of 1 year-on-year).

(5) Fire Accidents during the Temporary Storage or Handling

In 2021, 0 fire accident occurred during the temporary storage or handling^{*3} of hazardous materials (the same as the previous year).

^{*3} Temporary storage or handling: Temporary storage or handling of hazardous materials in excess of the quantity specified in the Fire Service Act for a period of 10 days or less at a place that has not been licensed as a facility for hazardous materials, with the approval of the competent fire chief or fire station chief.

2. Spillage Accidents

The number of spillage accidents involving hazardous materials that occurred at facilities for hazardous materials in 2021 was 422. This is an increase of roughly 2.4-times compared with the 174 such accidents in 1994 (which had the lowest number of spillage accidents since 1989), despite the fact that the number of facilities for hazardous materials has decreased. As for the primary causative factors, accidents attributable to human factors and those caused by physical factors both occur in large numbers. However, of those accidents caused by physical factors,

the number caused by age-related deterioration, such as corrosion fatigue, are on the rise.

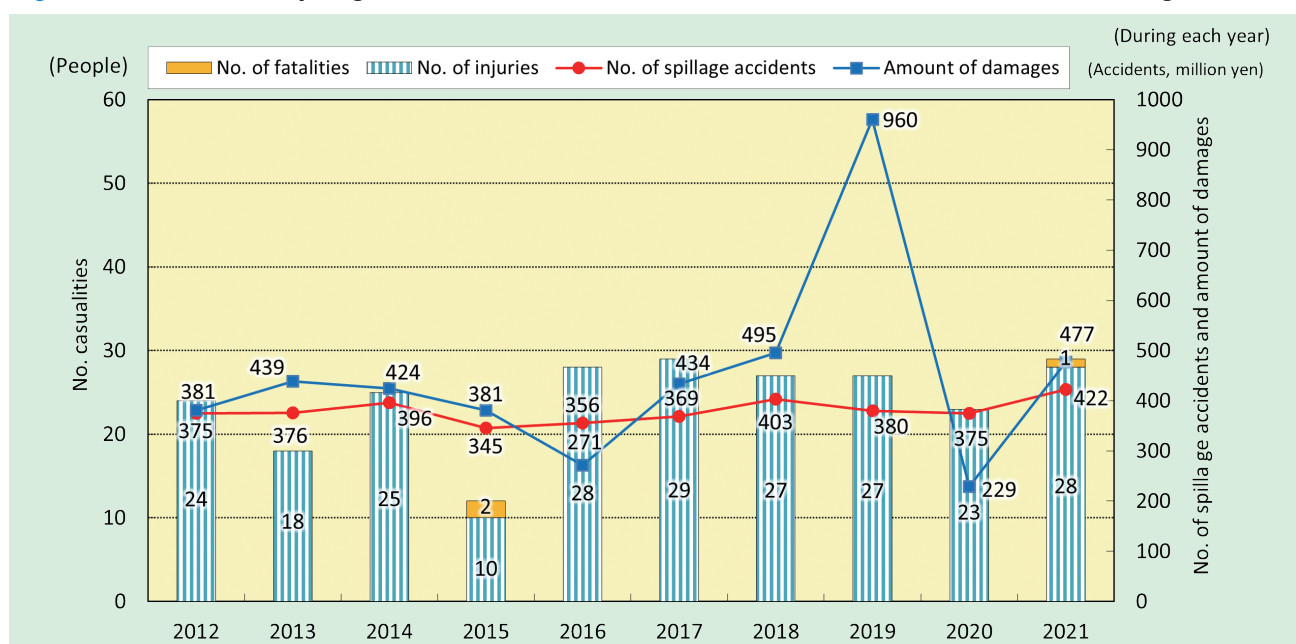
(1) Number of Spillage Accidents at Facilities for Hazardous Materials and their Damage

The number of spillage accidents involving hazardous materials that occurred at facilities for hazardous materials (and which did not turn into fires) in 2021 was 422 (an increase of 47 year-on-year). The amount of damages totaled 476.73 million yen (an increase of 247,87 million yen year-on-year), and they resulted in 1 death (an increase of 1 year-on-year), with 28 people injured (an increase of 5 year-on-year). (Fig. 1-2-7)

Moreover, looking at the number of spillage accidents that occurred by type of facility for hazardous materials reveals that the majority occurred at general outlets, followed by fuel supply depots, and outdoor storage tank facilities, in that order. (Fig. 1-2-8)

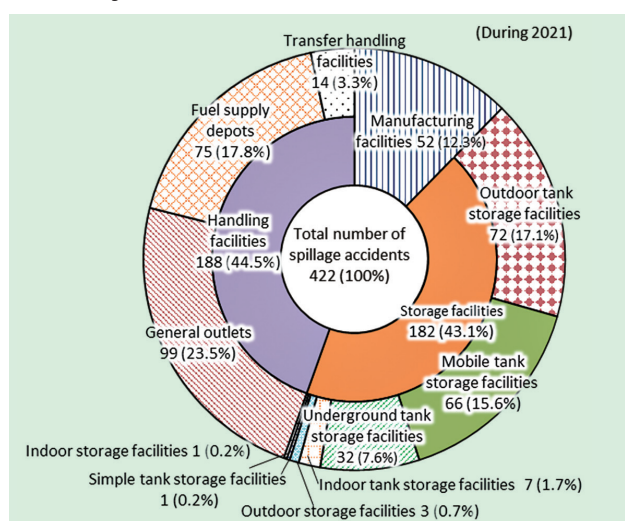
At the same time, 98.3% of the number of spillage accidents at facilities for hazardous materials involved spills of Class 4 hazardous materials, which consist primarily of petroleum products. Viewing this item type reveals that Class 2 petroleum (light oil, etc.), Class 1 petroleum (gasoline, etc.), account for most of these, followed by Class 3 petroleum (heavy oil, etc.) in that order. (Fig. 1-2-9)

Fig. 1-2-7 Number of spillage accidents at facilities for hazardous materials and their damage



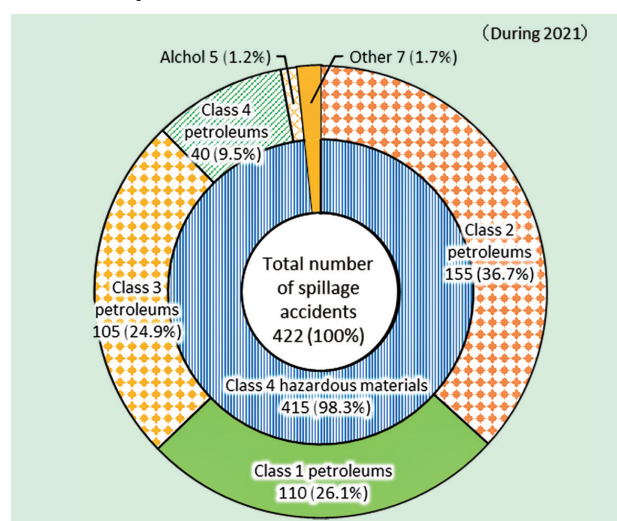
(Note) Prepared based on "Overview of the Accident Reports on Hazardous Materials".

Fig. 1-2-8 Number of spillage accidents by type of facility for hazardous materials

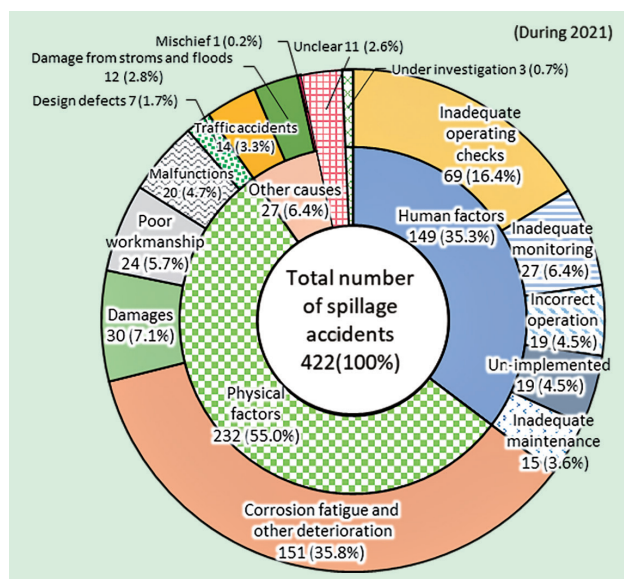


(Notes) 1 Prepared based on "Overview of the Accident Reports on Hazardous Materials".
2 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

Fig. 1-2-9 Number of spillage accidents by material spilled



(Notes) 1 Prepared based on "Overview of the Accident Reports on Hazardous Materials".
2 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

Fig. 1-2-10 Number of spillage accidents by causative factor

(Notes) 1 Prepared based on "Overview of the Accident Reports on Hazardous Materials".

2 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

(2) Causative Factors behind the Spillage Accidents at Facilities for Hazardous Materials

A look at the causative factors behind the spillage accidents at facilities for hazardous materials that occurred in 2021 reveals that human factors accounted for 35.3%, physical factors accounted for 55.0% and the total for other causes, unknown, and under investigation came to 9.7%.

When viewed by causative factor, those caused by deterioration such as corrosion fatigue were most common at 151 (an increase of 22 year-on-year), followed by 69 from inadequate operating checks (an increase of 13 year-on-year), and 30 from damages (an increase of 5 year-on-year). (Fig. 1-2-10)

(3) Spillage Accidents at Unauthorized Facilities

The number of spillage accidents that occurred at unauthorized facilities in 2021 was 7 (an increase of 5 year-on-year), leaving 0 people dead (the same as the previous year), and 2 injured (an increase of 2 year-on-year).

(4) Spillage Accidents during the Transportation of Hazardous Materials

The number of spillage accidents that occurred during the transportation of hazardous materials in 2021 was 6 (a decrease of 3 year-on-year), leaving 0 people dead (the same as the previous year), and 2 injured (an increase of 2 year-on-year).

(5) Spillage Accidents during the Temporary Storage or Handling

The number of spillage accidents that occurred during the temporary storage or handling of hazardous materials in 2021 was 0 (the same as the previous year).

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Current Status of Hazardous Materials Administration

1. Regulations on Hazardous Materials

(1) Regulatory Structure for Hazardous Materials

The Fire Service Act designates substances with properties such as: (1) Carrying a significant risk of causing a fire, (2) Carrying a significant risk of spreading a fire once one starts, and (3) Being difficult to extinguish when a fire does break out, as "hazardous materials." Enacting safety regulations for the storage, handling and transportation of these hazardous materials has been posited as a move that will prevent fires, protect the lives, health, and property of the public from fires, and mitigate the damage from fires.

An overview of the regulations on hazardous materials is shown below.

- Hazardous materials of volumes at or above the designated quantities (the quantity at which authorization is necessary to store or handle a material as designated by the Fire Service Act) cannot be stored or handled at locations other than facilities for hazardous materials. Persons attempting to establish a facility for hazardous materials must ensure it is in compliance with the standards regarding its location, structure, and equipment specified by law, and receive authorization from the municipal mayor for this.
- The transportation of hazardous materials must be carried out in accordance with the standards for ensuring safety specified by law, regardless of how large or small the quantity is.
- Standards for the storage and handling of hazardous materials in volumes less than the designated quantities are to be established via municipal ordinances.

(2) Current Status of Facilities for Hazardous Materials

A. Number of Facilities for Hazardous Materials

The total number of facilities for hazardous materials (number of facilities for construction permits) as of March 31, 2022 came to 388,576. (Table 1-2-1)

A look at the share of facilities by their classification reveals that storage facilities account for the majority at 68.3%, followed by handling facilities at 30.4%, and then manufacturing facilities at 1.3%. (Fig. 1-2-11)

B. Composition of Facilities for Hazardous Materials by Size

As for the number of facilities by size (according to the maximum storage quantity or the maximum handling quantity) of the total number of facilities for hazardous materials as of March 31, 2022, those facilities for hazardous materials that hold 50 times the designated quantities or less accounted for 75.2% of the total. (Fig. 1-2-12)

(3) Hazardous Material Engineers

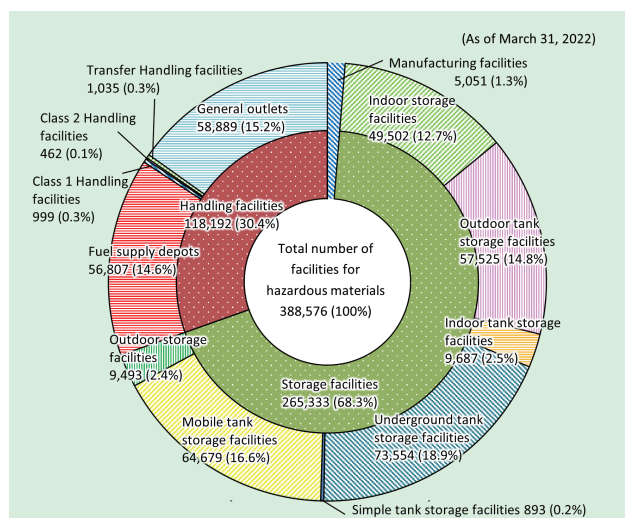
Hazardous material engineers are classified into three types: Class A, Class B, and Class C. Each class differs in the types of hazardous materials they can handle. When hazardous material engineers or someone else handles hazardous materials at facilities for hazardous materials, a Class A or Class B hazardous material engineer must be

Table 1-2-1 Trends in the number of facilities for hazardous material

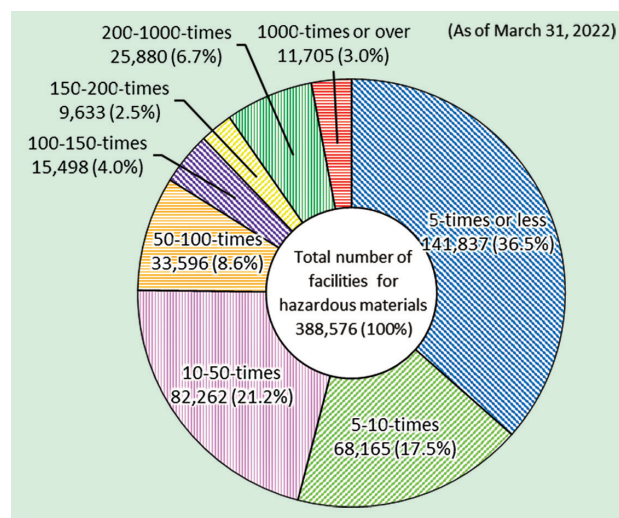
(As of March 31 of each year)

Year		2018	2019	2020	2021	2021
Facility						
Manufacturing facilities		5,093	5,098	5,077	5,045	5,051
Storage facilities	Indoor storage facilities	49,811	49,717	49,613	49,590	49,502
	Outdoor storage tanks	60,360	59,699	59,035	58,225	57,525
	Indoor storage tanks	10,386	10,170	9,988	9,837	9,687
	Underground storage tanks	79,723	77,988	76,425	74,938	73,554
	Simple storage tanks	961	940	933	908	893
	Transfer storage tanks	65,806	65,425	65,124	64,965	64,679
	Outdoor storage facilities	9,832	9,702	9,604	9,611	9,493
	Subtotal	276,879	273,641	270,722	268,074	265,333
Handling facilities	Fuel supply depots	59,715	58,865	58,124	57,497	56,807
	Class 1 sales handling facilities	1,107	1,078	1,050	1,028	999
	Class 2 sales handling facilities	493	482	474	469	462
	Transfer handling facilities	1,084	1,077	1,062	1,048	1,035
	General outlets	60,867	60,398	59,948	59,458	58,889
	Subtotal	123,266	121,900	120,658	119,500	118,192
Total		405,238	400,639	396,457	392,619	388,576

(Note) Prepared based on “The Survey on Regulation work of Hazardous Materials”.

Fig. 1-2-11 Number of facilities for hazardous materials by classification

(Notes) 1 Prepared based on “The Survey on Regulation work of Hazardous Materials”.
 2 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

Fig. 1-2-12 Composition rate of facilities for hazardous materials by size

(Notes) 1 Prepared based on “The Survey on Regulation work of Hazardous Materials”.
 2 The factors are multiples obtained from dividing the largest quantities stored or the largest quantities handled by the specified quantities stipulated in Appended Table III of the Cabinet Order on Control of Hazardous Materials.
 3 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

present to ensure safety.

As of March 31 2022, the (cumulative) total number of people who have passed the hazardous material engineer test since the hazardous material engineer system was launched came to 10,033,491 people. They play a significant role in ensuring safety at facilities for hazardous materials.

A. Hazardous Material Engineer Tests

Hazardous material engineer tests were held 4,278 times throughout Japan in FY2021 (an increase of 187 year-on-year). They were taken by 342,492 people (an increase of 50,162 people year-on-year), with 149,368 people passing (an increase of 16,331 people year-on-year) for an average pass rate of roughly 43.6% (a decrease of 1.9% year-on-

year). (Fig. 1-2-13)

Viewing the situation by test type, Class B (category 4) has the largest number of test takers, followed by Class C and Class A, with these three types accounting for approximately 80% of the total.

B. Safety Training Courses

As a general rule, the hazardous material engineers engaged in handling hazardous materials at facilities for hazardous materials must take a safety training course on handling hazardous materials offered by prefectural governors (safety training courses) every three years.

In FY2021, safety training courses were held a total of 1,853 times throughout Japan (an increase of 42 times year-on-year), and were attended by 187,837 people (an

increase of 17,063 people year-on-year). (Table 1-2-2)

(4) Safety Systems at Offices

As of March 31, 2022, the total number of business establishments that owned facilities for hazardous materials came to 175,402 throughout Japan.

In an effort to establish safety systems at business establishments, it has been mandated that the owners of facilities for hazardous materials that store or handle hazardous materials at or above certain quantities must carry out certain obligations. These include the appointment of hazardous materials security superintendents, and the selection of safety officers for facilities for hazardous materials, and the preparation of fire and disaster prevention rules. Moreover, it has been mandated that said business establishments that own certain facilities for hazardous materials and that store or handle hazardous materials at or above certain quantities must establish fire defense organizations for self-protection and appoint hazardous material safety supervising managers.

(5) Safety Inspections

It has been mandated that the owners of outdoor storage tanks and transfer handling facilities at or over a certain size must undergo inspections regarding the safety of facilities for hazardous materials performed by municipal

mayors and similar officials (safety inspections) at regular fixed intervals according to factors like the facility's size.

In FY2021, 209 safety inspections were performed, of which 207 involved outdoor storage tanks and 2 involved transfer handling facilities.

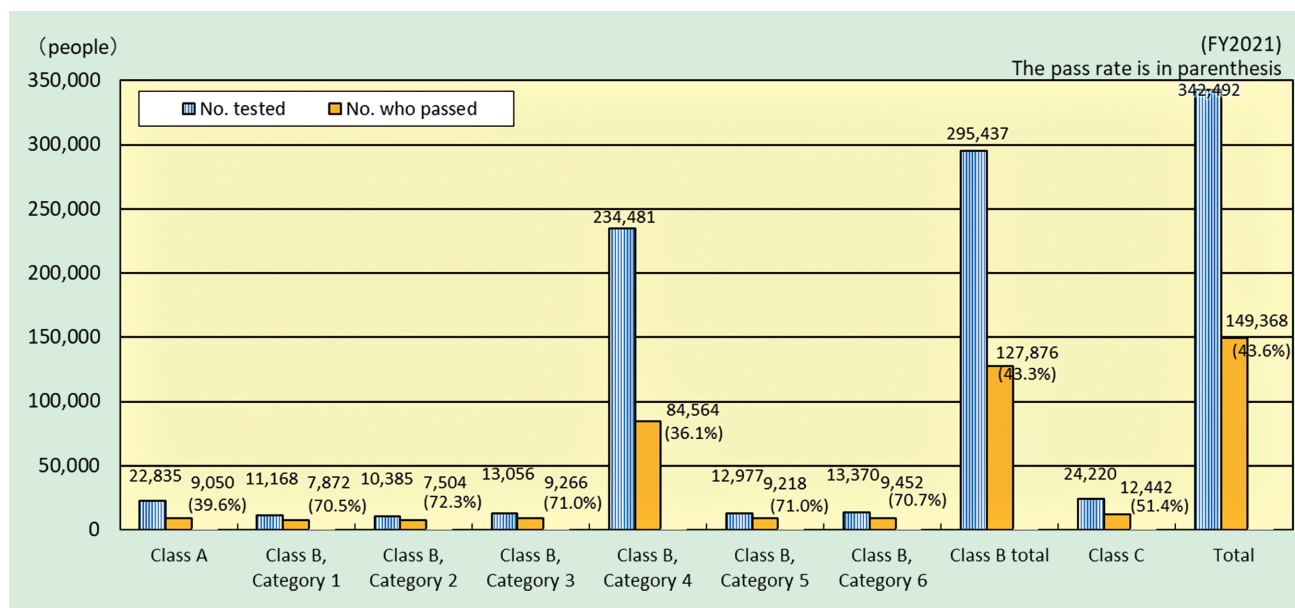
(6) Onsite Inspections and Orders

Municipal mayors and similar officials can perform onsite inspections of facilities for hazardous materials and other such facilities to ensure that their installation, construction, and establishment of equipment, as well as their storage or handling of hazardous materials, are in compliance with the standards established in the Fire Service Act. These can be carried out when said official deems it necessary to prevent fires caused by the storage or handling of hazardous materials.

In FY2021, onsite inspections were carried out a total of 156,713 times at 144,116 facilities for hazardous materials.

In cases where violations of the Fire Service Act are discovered as a result of onsite inspections, municipal mayors and other officials can issue a variety of different orders to the owners of said facilities for hazardous materials. These include orders to comply with regulations on storage and handling, orders to take measures relating to standards for installing, constructing, or establishing equipment, and more.

Fig. 1-2-13 Status of tests for hazardous material engineers

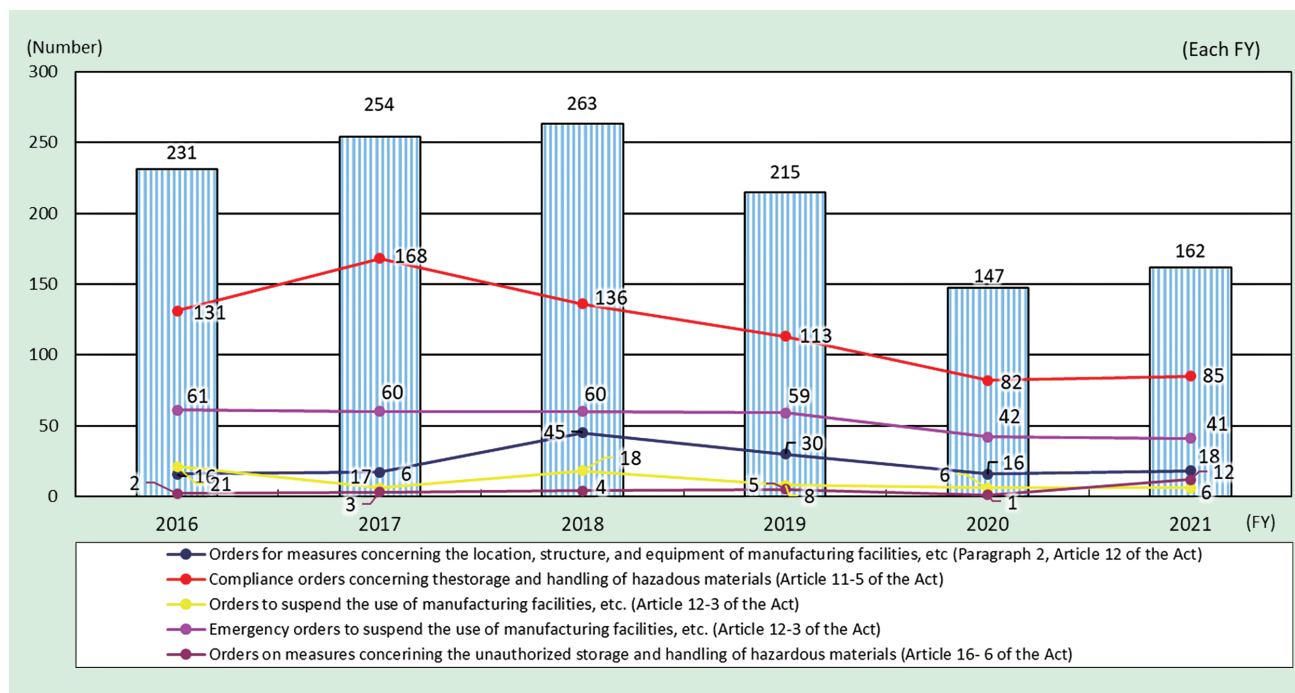


(Note) Prepared based on "The Statistical Table for the Testing and Certification of Hazardous Material Engineer" and "The Fire Protection Engineers by the Japan Fire Engineering Qualification Center".

Table 1-2-2 Number of attendees at safety training courses for hazardous material engineers and a breakdown of this by type of hazardous material engineer certification

(As of March 31 of each FY)

FY	Division	No. of attendees	Class A	Class B						Class C	Total by type	No. of training courses
				Category 1	Category 2	Category 3	Category 4	Category 5	Category 6	Subtotal		
2017		170,287	14,219	10,536	11,511	9,739	142,322	11,125	11,664	196,897	23,815	1,460
2018		182,800	14,813	11,215	11,721	10,106	153,670	11,526	12,444	210,682	24,402	1,452
2019		182,537	14,809	11,539	12,558	10,358	155,943	12,078	12,197	214,673	25,452	1,463
2020		170,774	13,740	10,667	11,769	9,969	143,669	11,261	11,458	198,793	23,242	1,811
2021		187,837	15,572	11,961	13,188	11,256	159,195	13,081	13,217	221,898	25,423	1,853

Fig. 1-2-14 Trends in orders for measures related to facilities for hazardous materials

(Note) Prepared based on "The Survey on Regulation work of Hazardous Materials".

In FY2021 municipal mayors or similar officials issued such orders in 162 cases. (Fig. 1-2-14)

2. Securing Petroleum Pipelines

(1) Safety Regulations for the Petroleum Pipeline Business

Regarding those petroleum pipelines which are used to transport petroleum in response to general demand, project licensing, construction plan approval, and safety inspections are conducted to ensure the safety of the pipeline under the Petroleum Pipeline Business Act.

The facilities to which the Petroleum Pipeline Business

Act apply currently only include the pipelines transporting airplane fuel to Narita International Airport, with other pipelines regulated as transfer handling facilities under the Fire Service Act.

(2) Ensuring the Safety of Petroleum Pipelines

Safety inspections are carried out periodically on the pipelines transporting airplane fuel to Narita International Airport pursuant to the Petroleum Pipeline Business Act. In addition, the business operators must do everything they possibly can to ensure safety, such as having maintenance and inspections carried out in accordance with the technical standards established by law.

—omitted—

Section 3 Countermeasures to Disasters at Petroleum Industrial Complexes

📖 Japanese Original P.81

Current Status and Recent Trends in Disasters at Petroleum Industrial Complexes

1. Number of Accidents and Damage

The total number of accidents that occurred at specified business establishments*¹ in petroleum industrial complexes and other special disaster prevention areas (hereinafter referred to as “special disaster prevention areas”) in 2021 came to 302, of which 293 were accidents other than caused by earthquakes and tsunamis (hereinafter referred to as “general accidents”), and 9 were accidents caused by earthquakes and tsunamis (hereinafter referred to as “earthquake-induced accidents”).

Looking at trends in the number of general accidents that have occurred reveals that the number of accidents has been on the rise since 1989, the number of accidents recorded during 2021 was 293 (an increase of 26 year-on-year), the second highest number ever. (Fig.1-3-1)

In 2021 there were 21 general accidents (an increase of 3 year-on-year) that resulted in casualties, with 1 death (the same as the previous year), and 37 injuries (an increase of 12 year-on-year). (Attachment 1-3-1, untranslated)

2. Characteristics of Accidents

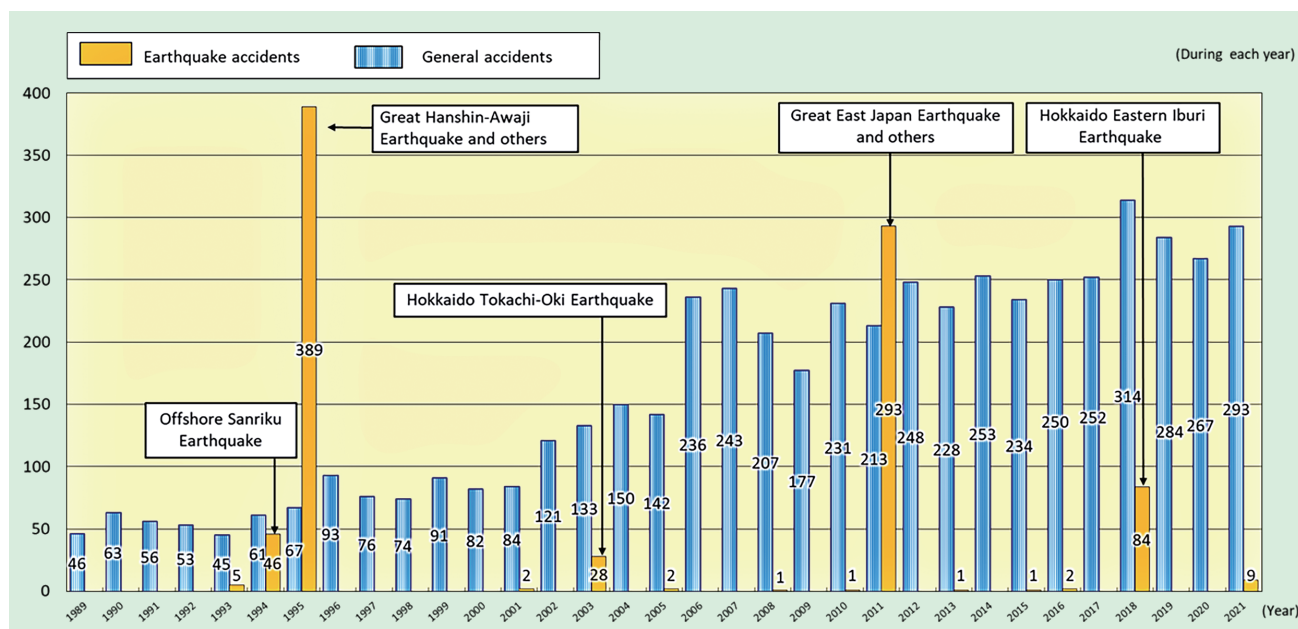
(1) Number of General Accidents by Type of Accident

Looking at the number of general accidents by type of accident, it reveals that 106 fires (an increase of 8 year-on-year), 3 explosions (the same as the previous year), 179 leaks (an increase of 24 year-on-year), and 5 other accidents (a decrease of 6 year-on-year). (Attachment 1-3-2, untranslated)

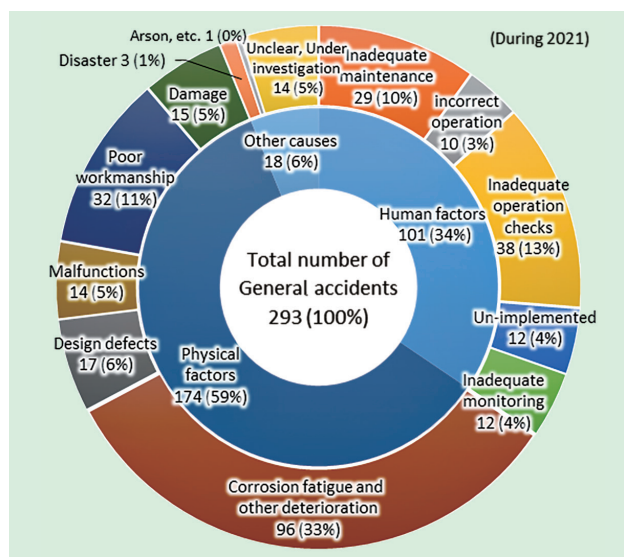
(2) Number of General Accidents by Cause of Accident

Looking at the number of general accidents by cause, it reveals that 101 accidents were caused by human factors (an increase of 2 year-on-year), 174 (an increase of 33 year-on-year) by physical factors, and 18 (a decrease of 9 year-on-year) by other factors. The main causes were 96 cases of deterioration due to corrosion and fatigue (an increase of 11 year-on-year), 38 cases of inadequate operation checks (an increase of 8 year-on-year), and 29 cases of insufficient maintenance and management (an increase of 1 year-on-year). (Fig. 1-3-2)

Fig. 1-3-1 Trends in the number of accidents that occurred at petrochemical complexes



*¹ Specified business establishments: These refer to Class 1 business establishments (business establishments where 10,000 kiloliters of petroleum or more are stored or handled, or where 2 million cubic meters of high-pressure gas or more are processed) and Class 2 business establishments (business establishments where 1,000 kiloliters of petroleum or more are stored or handled, or where 200,000 cubic meters of high-pressure gas or more are processed).

Fig. 1-3-2 Number of General Accidents by Cause of Accident

(Note) Digits in the first decimal place were rounded off, so in some cases the totals may not be consistent.

(3) Number of General Accidents by Type of Specified Business Establishment

Looking at the number of general accidents by cause, it reveals that 234 accidents, or 79.9%, were occurred at Class 1 business establishments (210 of which layout business establishments^{*2}). (Attachment 1-3-3, untranslated)

(4) Number of General Accidents at Specified Business Establishment by Type of Business Category

As for the number of general accidents by cause, there were 116 petroleum and coal product manufacturing industry-related accidents (an increase of 18 year-on-year), 98 chemical industry-related accidents (an increase of 1 year-on-year), 34 steel industry-related accidents (a decrease of 1 year-on-year), and 20 electrical industry-related accidents (an increase of 12 year-on-year). (Attachment 1-3-4, untranslated)

Japanese Original P.82

Current Status of Countermeasures to Disasters at Petroleum Industrial Complexes

In order to prevent disasters from occurring and spreading at special disaster prevention areas, where large quantities of petroleum and high-pressure gasses are concentrated, a comprehensive disaster prevention system has been established by applying the various regulations from the Fire Service Act, the High-pressure Gas Safety Act, the Industrial Safety and Health Act, the Act on Prevention of Marine Pollution and Maritime Disasters, etc., as well as by applying the regulations from the Act on the Prevention of Disasters in Petroleum Industrial

Complexes and Other Petroleum Facilities, which stipulates the layout of each facility section, disaster prevention equipment, etc.

1. Current Status of Special Disaster Prevention Areas

As of April 1, 2022, 79 areas in which large quantities of petroleum or high-pressure gas at or above certain quantities have been designated as special disaster prevention areas in 98 municipalities in 33 prefectures based on the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities. (Fig. 1-3-3) These special disaster prevention areas are under the jurisdiction of 87 fire departments.

Furthermore, 650 business establishments serve as specified business establishments subject to the regulations of the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities. Of these, 325 are Class 1 business establishments (including 148 layout business establishments) and 325 are Class 2 business establishments.

2. Disaster Prevention Systems in Prefectures and at Firefighting Agencies

(1) Establishing Disaster Prevention Schemes

The prefectures that contain special disaster prevention areas are establishing disaster prevention systems in a comprehensive and systematic manner based on the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities. This is being done through concerted efforts together with relevant agencies centering primarily on disaster prevention headquarters at petroleum industrial complexes and other locations (hereinafter referred to as “disaster prevention headquarters”).

The disaster prevention headquarters carry out operations such as the preparation of disaster prevention plans for petroleum industrial complexes and other locations (hereinafter referred to as “disaster prevention plans” in this section), coordination with relevant agencies when disasters strike, and the promotion of research studies on disaster prevention.

(2) Emergency Responses when Disasters Occur

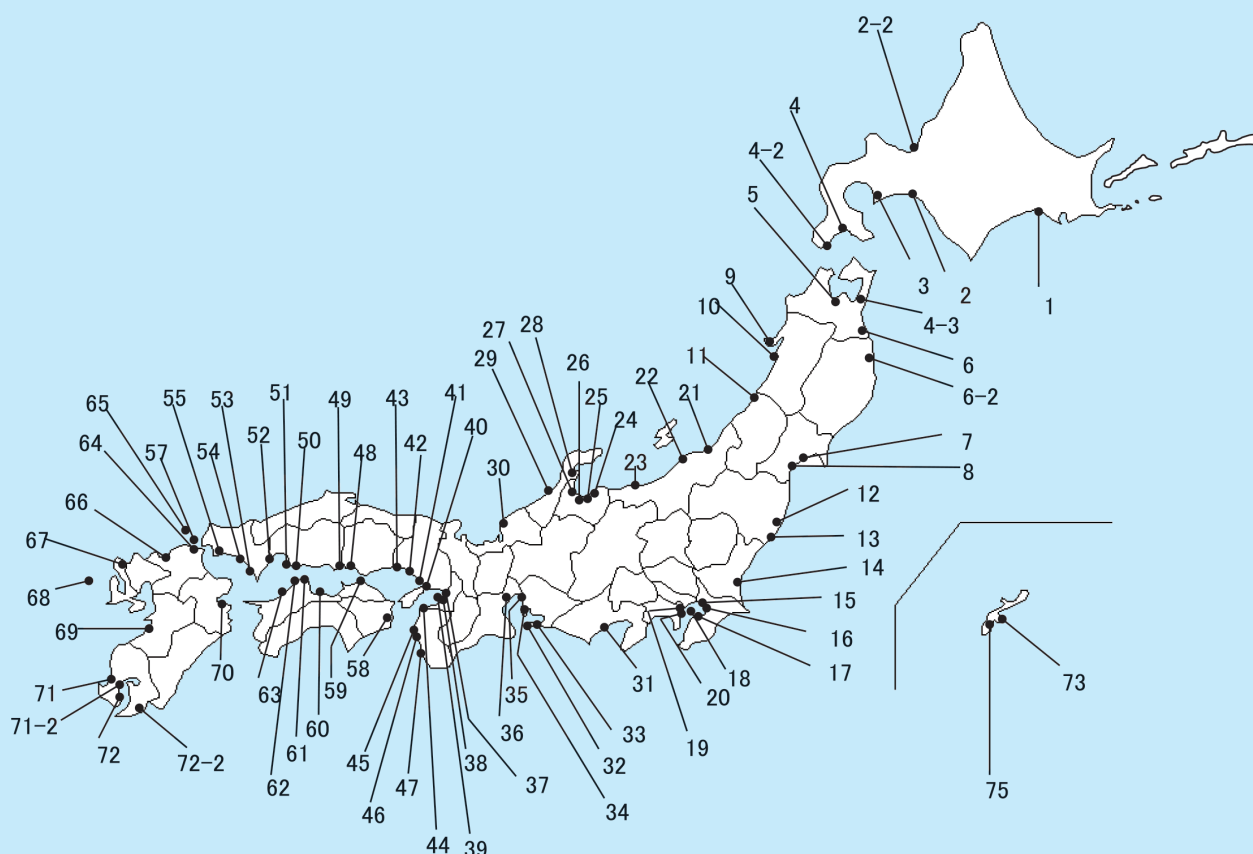
When disasters occur in special disaster prevention areas, emergency response is carried out in a concerted manner by the prefecture, municipality, related agencies, specified business operators, etc. under the leadership of the disaster prevention headquarters, as stipulated by the disaster prevention plan.

The fire department plays an important role in this process by conducting defensive activities and giving instructions to disaster prevention organizations for self-defense.

^{*2} Layout business establishments: Business establishments from among Class 1 business establishments that handle both petroleum and high-pressure gasses. Said business establishments are subject to layout regulations (see “Current Status of Damage Countermeasures at Petroleum Industrial Complexes” 4. Layout Regulations for Business Establishments) stipulating that their sites must be segmented off into six types of sections according to their purpose, with these including manufacturing facility sections and storage facility sections.

Fig. 1-3-3 Designation Status for Special Disaster Prevention Areas

(As of April 1, 2022)



No.	Special disaster prevention areas	No.	Special disaster prevention areas	No.	Special disaster prevention areas	No.	Special disaster prevention areas	No.	Special disaster prevention areas
1	Kushiro	15	North Keiyo coast	33	Tahara	51	Nomi	70	Oita
2	Tomakomai	16	Central Keiyo coast	34	Kinuura	52	Iwakuni/Otake	71	Kushikino
2-2	Ishikari	17	South Keiyo coast	35	Port of Nagoya coast	53	Kudamatsu	71-2	Kagoshima
3	Muroran	18	Tokyo International Airport	36	Yokkaichi coast	54	Shunan	72	Kiire
4	Hokuto	19	Keihin coast	37	Osaka North Port	55	Ube/Onoda	72-2	Shibushi
4-2	Shiriuchi	20	Negishi coast	38	Sakai Senboku coast	57	Mutsurejima	73	Henza
4-3	Mutsugawara	21	Port of Niigata (East)	39	Kansai International Airport	58	Anan	75	Onaha
5	Aomori	22	Port of Niigata (West)	40	Kobe	59	Bannosu		
6	Hachinohe	23	Naoetsu	41	Higashiharima	60	Niihama		
6-2	Kuji	24	Toyama	42	Himeji coast	61	Namikata		
7	Shiogama	25	Fuchu	43	Ako	62	Kikuma		
8	Sendai	26	Shinminato	44	Northern coast in north Wakayama	63	Matsuyama		
9	Oga	27	Fushiki	45	Central coast in north Wakayama	64	Kitakyushu		
10	Akita	28	Port of Nanao,Mimuro	46	Southern coast in north Wakayama	65	Shirashima		
11	Sakata	29	Kanazawa Port north	47	Gobo	66	Fukuoka		
12	Hirono	30	Fukui coast	48	Mizushima coast	67	Fukushima		
13	Iwaki	31	Shimizu	49	Fukuyama/ Sasaoka	68	Kamigoto		
14	Kashima coast	32	Atsumi	50	Etajima	69	Yatsushiro		

*79areas

(3) Maintaining the Firefighting Capabilities of Municipalities Containing Special Disaster Prevention Areas

As of April 1, 2022, 65 large chemical firetrucks, 52 large elevated water trucks, 85 foam solution transport vehicles, 32 large elevated chemical water trucks, 2,966kL of 3% fire-extinguishing foam, 651kL of 6% fire-extinguishing foam, 32 fireboats, and other such equipment had been allocated to firefighting agencies in municipalities containing special disaster prevention areas. Likewise, 19 foam solution storage facilities, 4 portable foam cannons, and other such equipment has been allocated to prefectures containing special disaster prevention areas.

The FDMA has deployed the Emergency Response Unit for Energy/Industrial Disasters (“Dragon Hyper Command Unit”), which specializes in special disasters, to 12 areas under National Fire-Service Teams, as well as firefighting robots (Scrum Force), in order to support the development of firefighting capabilities for municipalities located in special disaster prevention areas.

3. Disaster Prevention Systems at Specified Business Establishments

(1) Establishing Disaster Prevention Organizations for Self-defense

The Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities mandates that operators who establish specified business establishments located in special disaster prevention areas (specified business operators) must set up disaster prevention organizations for self-defense, prepare fire protection equipment, appoint disaster prevention managers, formulate disaster prevention regulations, and so forth. It also stipulates that they are to establish joint



The high capacity foam system

disaster prevention associations,^{*3} wide-area joint disaster prevention associations,^{*4} and special disaster prevention area councils for petroleum industrial complexes (hereinafter referred to as “area councils”)^{*5}.

As of April 1, 2022, disaster prevention organizations for self-defense had been established at every specified business establishment (650 business establishments). 71 joint disaster prevention associations, 11 wide-area joint disaster prevention associations, and 57 area councils had also been established. These disaster prevention organizations for self-defense, joint disaster prevention associations, and wide-area joint disaster prevention associations are equipped with 5,218 disaster prevention personnel, 81 large chemical fire trucks, 37 large elevated water trucks, 129 foam solution transport vehicles, 118 large elevated chemical water trucks, 24 high capacity foam cannons, 19 oil recovery vessels, and more. (Attachment 1-3-5, untranslated)

(2) Installation of High Capacity Foam Systems

High capacity foam systems are a type of firefighting equipment that consist of high capacity foam cannons, feed pumps, foam mixers, and hoses, in order to respond to fires that fully envelop floating roof outdoor storage tanks. They have the capacity to spray more than 10,000 liters of foam per minute. A single high capacity foam cannon is capable of spraying up to ten times as much foam as a conventional three-piece set (consisting of a large chemical firetruck, a large elevated water truck, and a foam solution transport vehicle).

At present, high capacity foam systems with the capacity to spray anywhere from 10,000 to 40,000 liters per minute are stationed at 12 wide-area joint disaster prevention associations throughout Japan.

(3) Enhancing Disaster Prevention Systems for Self-defense

The FDMA has issued standardized and visually easy to understand educational textbooks for disaster management personnel education and training, and has proposed a training model that can be used by both new and experienced personnel to acquire the knowledge and skills necessary for disaster management, such as initial response in the event of a disaster and cooperation with public firefighters, in order to strengthen disaster management structures.

4. Layout Regulations for Business Establishments

(1) Layout Regulations

The Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities mandates certain standards for layout establishments regarding the layout of facility areas and the securing of

^{*3} Joint disaster prevention associations: Disaster prevention associations jointly established by the specified business operators involved with specified business establishments containing a single special disaster prevention area in order to carry out some of the tasks of the disaster prevention organization for self-defense.

^{*4} Wide-area joint disaster prevention associations: Joint disaster prevention associations covering a wide area jointly established by specified business operators involved with specified business establishments containing areas in which there are two or more special disaster prevention areas to carry out tasks related to disaster prevention activities by using high capacity foam cannons and other equipment.

^{*5} Special disaster prevention area councils for petroleum industrial complexes: These are councils established with the objective of having specified business operators related to specified business establishments located in a single special disaster prevention area come together to jointly draft independent standards related to disaster prevention and to carry out joint disaster prevention drills.

passageways within the premises. It also mandates that in cases where business establishments are newly established or change their facility area layouts, they must provide notification of their plans, and after completion, they must undergo confirmation to determine whether or not the work is consistent with the relevant plans.

(2) Status of New Establishment Notifications, etc.

The total number of notifications for new establishments of or changes to layout business establishments in FY2021 came to 6, while the number of confirmations in the same year was 7. (Attachment 1-3-6, untranslated)

5. Other Disaster Countermeasures

(1) Establishing Disaster Response Systems

The Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities states that specified business operators must report to firefighting agencies or locations specified by municipal mayors immediately when any abnormal phenomena*⁶ occur. It also mandates that disaster prevention organizations for self-defense, joint disaster prevention associations, and wide-area joint disaster prevention associations must take the necessary measures in order to prevent disasters from occurring and spreading.

(2) Establishing Green Buffer Zones for Disaster Prevention

In order to prevent damage in special disaster prevention areas from spreading to surrounding regions, the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities has provisions relating to the drafting of installation plans, the share of costs to borne by business operators, and special financial measures for the establishment of green buffer zones for disaster prevention by local governments in the vicinities around said areas.

6. Recent Disaster Countermeasures at Petroleum Industrial Complexes

(1) Liaison Conferences of the FDMA and Related Ministries to Examine Disaster Prevention Measures at Petroleum Industrial Complexes, etc.

The FDMA, the Ministry of Health, Labour and Welfare, and the Ministry of Economy, Trade and Industry, which are the ministries and agency responsible for safety at petroleum industrial complexes, have held regular liaison conferences.

The purpose of these liaison conferences is to exchange information on incidents, share policy trends, promote efforts by business operators to prevent disasters, and work together to take action in the event of a disaster. The ministries and agency work together to prevent disasters at petroleum industrial complexes by promoting accident prevention efforts and publishing and sharing incident-related information on the Internet.

In FY2021, the “Guidelines for the Safe Operation of Drones at Plants” were revised and disseminated to prefectures, fire departments, and business establishments.



The poster for Skill Contest for Self-defense Disaster Prevention Organizations at Petroleum Industrial Complexes, etc.

This guideline was published in March 2019 and is intended to improve plant security and eradicate industrial accidents through the use of drones in industrial complexes such as petroleum refining and chemical industry plants. The purpose of this second revision is to improve the safety of drone utilization and to respond to the revision of the Civil Aeronautics Act.

This revision is expected to further promote the use of drones in the plant security field.

(Fire and Disaster Management for Petroleum Industrial Complexes, etc.; Liaison Conference of FDMA, MHLW, and METI; Website run jointly by the three organizations: https://www.fdma.go.jp/relocation/neuter/topics/fieldList4_16.html)

(2) Earthquake and Tsunami Measures for Petroleum Industrial Complexes, etc.

As there is concern about damage occurring due to the Nankai Trough Earthquake or Tokyo in Land Earthquake, based on the state of the damage done by the Great East Japan Earthquake, work is being done to enhance and strengthen disaster prevention systems at petroleum industrial complexes, etc., such as revising disaster prevention assessment guidelines and handbooks for disaster prevention efforts of self-defense disaster prevention organizations.

*6 Abnormal phenomena: Fires, explosions, spills of oil and other substances, and other such abnormal phenomena at specified business establishments.

(3) Skill Contest for Self-defense Disaster Prevention Organizations at Petroleum Industrial Complexes, etc.

The FDMA holds a “Skill Contest for Self-Defense Disaster Prevention Organizations at Petroleum Industrial Complexes, etc.” with the aim of improving the skills and morale of disaster prevention personnel such as those of self-defense disaster prevention organizations at specified business establishments.

During the contest, which will be around the time of “World Tsunami Awareness Day” on November 5, the Minister of Internal Affairs and Communications and the Commissioner of the FDMA will commend self-defense disaster prevention organizations, etc. that achieve excellent results in safety, reliability, and promptness in a training exercise to extinguish a large-scale tank fire utilizing fire-extinguishing foam agents.

(4) Holding Investigative Committee Meetings to Strengthen the Disaster Prevention Systems of Petroleum Industrial Complexes, etc.

The FDMA has held the “Study Group on Utilization of Advanced Technologies for Petroleum Industrial Complex Disaster Response” since FY2019, and has been conducting surveys and studies in order to utilize AI, IoT, and other technologies (hereinafter referred to as “advanced technologies”) that have been improved in recent years for disaster response at petroleum

industrial complexes. Based on the issues and needs of administrative agencies and business establishments, the status of introduction and utilization of advanced technologies, and the opinions of the study group members, advanced technologies were consolidated into 11 items in FY2021 and have been specifically verified.

In FY2022, the results of these studies were compiled into a report.



Commendation Ceremony for Skill Contest for Self-defense Disaster Prevention Organizations at Petroleum Industrial Complexes, etc.

—omitted—

Section 1

Fire Service Structure

📖 Japanese Original P.111

1. Fire Defense Organizations

(1) Standing Firefighting Agencies

Standing firefighting agencies refers to the fire departments and fire stations established in municipalities that are staffed by full-time personnel.

As of April 1, 2022, there were 723 fire departments and 1,714 fire stations throughout Japan. (Attachment 2-1-1, untranslated)

There were 167,510 firefighters, of which 6,148 were women. (Fig. 2-1-1, Attachment 2-1-1, untranslated)

The current fire service structures found in municipalities can largely be categorized into: [1] Municipalities with both fire departments and fire stations (so-called standing fire defense) and volunteer fire corps (so-called non-standing fire defense) coexist (hereinafter referred to as “municipalities with standing fire service structures”), and [2] Towns and villages with only volunteer fire corps (hereinafter referred to as “municipalities without standing fire service structures”).

As of April 1, 2022, 1,690 municipalities had switched over to a standing fire defense structure, whereas 29 towns and villages had not done so. Many of these 29 towns and villages are without standing fire service structures due to geographical factors. 21 towns and villages in Tokyo and three other prefectures (72.4% of all towns and villages without standing fire service structures) are located on

islands. (Attachment V, untranslated)

288 fire departments were established by special district authorities or extended associations (22 of which were established by extended associations). The 1,109 municipalities that have organized these (370 cities, 599 towns, and 140 villages) correspond to 65.6% of the total number of municipalities that have switched to a standing fire defense structure. Furthermore, the number of municipalities outsourcing this work comes to 146 (39 cities, 87 towns, and 20 villages), which corresponds to 8.6% of the total number of municipalities that have switched to a standing fire service structure. (Fig. 2-1-2)

(2) Volunteer Fire Corps

As of April 1, 2022, the number of volunteer fire corps throughout Japan came to 2,196, while their volunteer members numbered 783,578. They have been established in every municipality. (Fig. 2-1-1, Attachment 2-1-1, untranslated)

Volunteer fire corps are municipal, non-standing firefighting agencies. The volunteer firefighters that comprise their members have other main occupations, and engage in fire and disaster defense activities based on their love for their hometown and a desire to protect it thinking that they should be the ones to protect their own communities themselves. They do this as local government employees in special part-time positions vested with authority and responsibility (For the organizational

Fig. 2-1-1 Trends in the number of Firefighters and Volunteer Firefighters



(Notes) 1 Prepared based on “The Survey of the Current Status of Fire Prevention and Earthquake Countermeasures”.

2 Due to the effects of the Great East Japan Earthquake, the number of firefighters and volunteer firefighters in Iwate Prefecture, Miyagi Prefecture, and Fukushima Prefecture in 2011 were tabulated using the numbers from the previous year (as of April 1, 2010).

3 Due to the effects of the Great East Japan Earthquake, the numbers for Onagawa Town, Oshika District, Miyagi Prefecture in 2012 were tabulated using the numbers from the previous year (as of April 1, 2010).

Fig. 2-1-2 Breakdown of the establishment method for fire departments

(As of April 1, 2022)

No. of fire departments		Municipalities			Standing/non-standing	
		Cities	Towns	Villages		
723	1,690 municipalities	1,690	793	736	161	Municipalities with standing structures
Individual	435	435	384	50	1	Individual
Special district authorities, etc.	288	1,109	370	599	140	Comprised of special district authorities, etc.
		146	39	87	20	Outsourced
		29	—	7	22	Municipalities with non-standing structures
		1,719	793	743	183	Total

(Notes) 1 Prepared based on “The Report on Personnel Changes concerning Fire Departments and Volunteer Fire Corps”.
 2 The 23 wards of Tokyo were tabulated as a single city for individual fire defense departments.
 3 Extended associations are included under “Special district authorities.”

structure of Volunteer fire corps, see Special Feature 3).

2. Fire and Disaster Defense Facilities, etc.

(1) Maintenance of Fire Trucks and Other Vehicles

Fire departments and fire stations maintain fire pumpers, ladder-equipped vehicles (including vehicles with folding ladders), chemical fire trucks, ambulances, rescue vehicles, and other equipment that they need for their firefighting activities.

In addition, volunteer fire corps maintain vehicles such as fire pumpers, small power pump transport vehicles, and transport vehicles for rescue supplies. (Attachment 2-1-4, untranslated)

(2) Fire Defense Communication Equipment

In order to minimize the damage from fires and other disasters, it is important to quickly become aware of said fires and disasters and have firefighting agencies rapidly arrive at the scene. In addition, it is also important to collect information and quickly and clearly issue instructions and orders at the scene of the incident. Fire defense communication equipment plays an enormous role in such contexts.

A. Calls to 119

The number of incidents reported to 119 throughout 2021 came to 8,017,669. A breakdown of the reported details shows that the number of reported cases related to medical emergencies and rescues accounted for 71.6% of the total. (Attachment 2-1-5, untranslated)

In recent years, the number of reports to 119 from cell phones and IP phones (hereinafter referred to as “cell phones and other types of phones”) has risen, with cell phones comprising 51.9% and IP phone comprising 23.9% of the overall number of reports. (Attachment 2-1-6, untranslated)

(A) Location Information Notifications for Emergency Reports to 119

When a 119 call is received, the fire department is notified of the caller’s location. When a call is made from a landline phone, the user’s address is provided, and when a call is made from a cell phone, its location is determined based on GPS positioning and cell tower information. As of April 1, 2022, 715 fire departments are equipped to receive location information from callers.

(B) Nonverbal Reports

The FDMA is working to create an environment in which people with hearing and speech impairments can make emergency calls from anywhere in the entire country at any time.

As a means for people with hearing or speech impairments to use telephones, there is a “telephone relay service” in which operators provide an immediate two-way connection between people with hearing or speech impairments and non-hearing or speech impaired people by interpreting “sign language” or “text” to “voice”. This was launched nationwide in July 2021 as a public infrastructure based on the “Act on Facilitation of the Use of Telephones for the Persons with Hearing Impairments, etc.” The service is also compatible with 119 calls, allowing people with hearing or speech impairments to call the fire department from anywhere in the country using the telephone relay service.

In addition, the “Net119 Emergency Report System” (Fig. 2-1-3), which allows people with hearing or speech impairments to make an emergency call to 119 without using voice by tapping buttons on the screen of their smartphones or entering text. As of June 1, 2022, 609 out of the 723 fire departments (approx. 84%) have already installed the system.

(C) Report from Foreign Nationals

The 119 multi-language service using 3-Way Telephone Interpretation provided by the Telephone Interpretation Center will be available 24/7 in major languages to respond promptly and accurately to 119 calls by foreign nationals, or from an emergency site where a foreign national is present. The goal is to have this system installed in all fire departments. (Fig. 2-1-4)

B. Fire Command System

The fire command system is a system to support a series of fire command operations at the fire command center, such as receiving 119 calls, identifying the location of disasters, organizing dispatch teams, and issuing dispatch orders to fire stations.

In recent years, the ICT environment surrounding firefighting has changed dramatically with the rapid development of information and communications technology. In response to these changes, efforts are being made to upgrade the fire command system, including consideration of data entry/exit (standard interface) with external systems.

Fig. 2-1-3 Flow of Net119 Emergency Report System

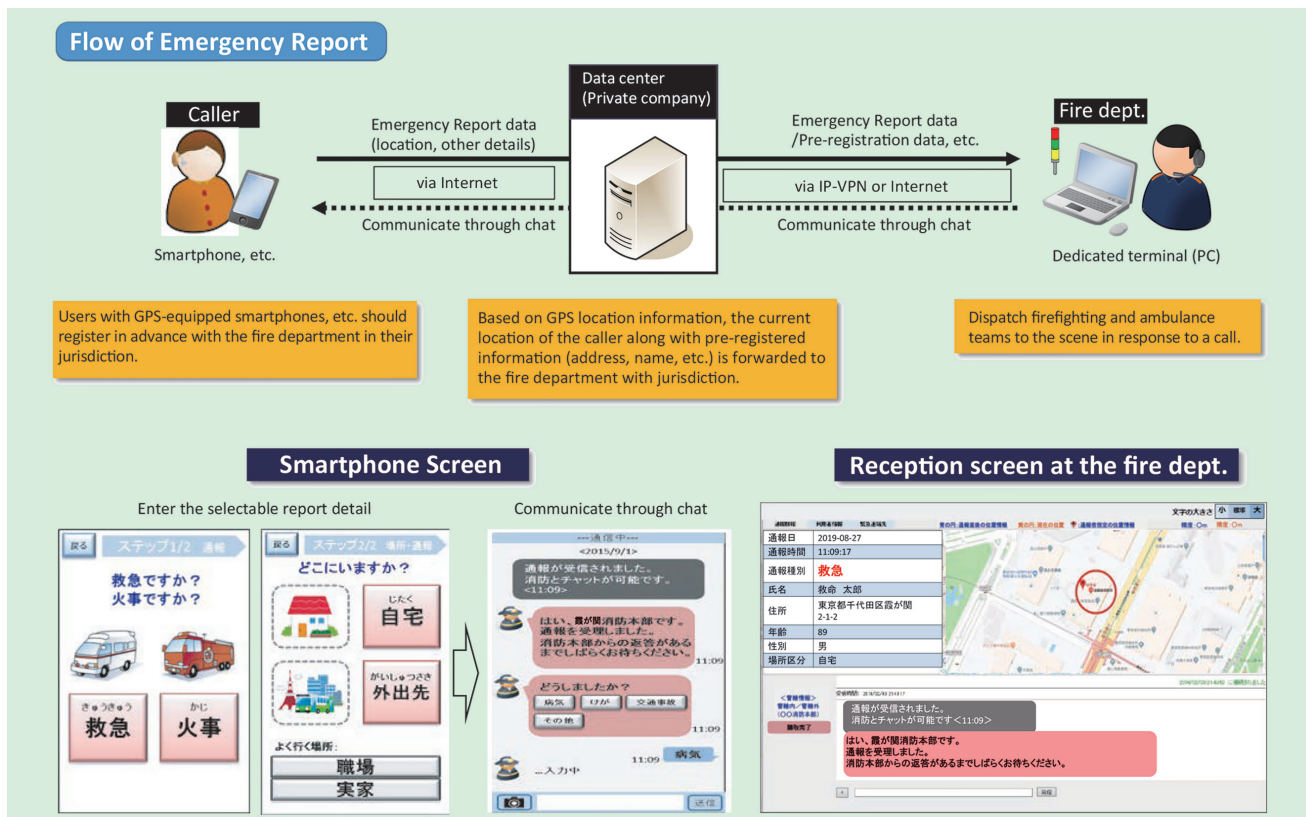
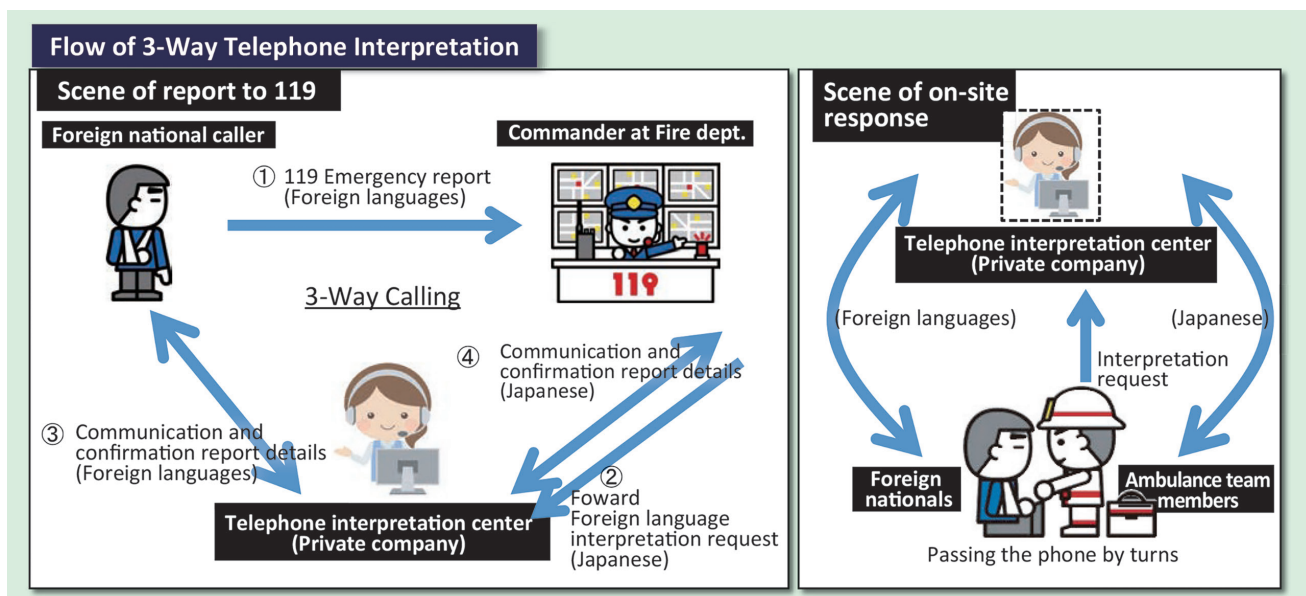


Fig. 2-1-4 Flow of 3-Way Telephone Interpretation



(3) Water Sources for Firefighting

Water sources for firefighting are an absolutely crucial component, together with fire trucks and other equipment, when it comes to carrying out firefighting activities. Generally speaking, these are categorized into artificial sources like fire hydrants and fire cisterns, as well as natural sources like rivers, ponds, oceans, and lakes.

The total number of water sources for firefighting installed in Japan is 2,515,624, of which 1,954,330 are

fire hydrants and 542,179 are fire prevention tanks. (Attachment 2-1-7, untranslated)

Since the Great Hanshin-Awaji Earthquake, fire hydrants with earthquake resistance have been installed, and in recent years, in anticipation of the aging of fire hydrants and the demand for fire hydrants in areas with dense wooden buildings, each municipality has set a numerical target to gradually improve the fire hydrant system.

Section 4

Education and Training Structure

Japanese Original P.129

1. Education and Training for Firefighters

It is essential to improve the knowledge and skills of firefighters to enable them to appropriately handle the increasingly diverse disaster and emergency services and the increasing sophistication of fire prevention services. As such, education and training for firefighters is incredibly important.

Education and training for firefighters is offered by all fire departments, fire stations, and volunteer fire corps, as well as by the national government through the Fire and Disaster Management College and the fire academies in the various prefectures. In addition to these, there are also emergency medical technician (EMT) training institutes that offer education designed to have rescue workers from around the country acquire national qualifications as EMTs.

As this indicates, the national government, prefectures, municipalities, and others each undertake their own respective functions as they work together in a cooperative manner to provide education and training for firefighters.

2. On-the-job Training

Every firefighting agency carries out systematic education and training (on-the-job training) based on their respective regional characteristics on a routine basis. In particular, those firefighters who are required to perform rigorous team activities based on instructions and orders at the scenes of dangerous disasters require a sense of duty and abundance of energy and vigor in order to carry out their professional duties. Therefore, fire departments work to improve their knowledge and skills and lift their morale through various types of education and training.

The FDMA has established “Standards for Fire Drill Etiquette,” “Standards for Firefighting Maneuvers,” and “Standards for Firefighting Rescue Maneuvers” as standards for on-the-job training, as well as safety management manuals both for during drills and during firefighting activities.

3. Education and Training at Fire Academies

(1) Establishment of Fire Academies

The provisions of Article 51 of the Fire Defense Organization Act mandate that prefectures must establish fire academies independently or jointly, except in cases where financial circumstances or other special circumstances prevent them from doing so. In addition, the provisions stipulate that ordinance-designated cities can also establish fire academies independently or jointly together with the prefectures.

As of April 1, 2022, fire academies had been established in all 47 prefectures, seven ordinance-designated cities (Sapporo, Chiba, Yokohama, Nagoya, Kyoto, Kobe, and Fukuoka), and in the Tokyo Fire Department for a total of 55 such academies throughout Japan (in the Tokyo

Metropolitan Region, there are two schools that have been jointly established: The Tokyo Metropolitan Fire Defense Training Center and the Tokyo Fire Department’s Fire Academy).

With the objective of establishing and operating fire academies, the FDMA established the “Standards for the Establishment, Staffing, and Operation of Fire Academies,” and works to maintain and advance the level of education and training available at fire academies.

(2) Types of Education and Training

The FDMA established the “Education and Training Standards for Fire Academies” to serve as standards for the education and training offered at fire academies. The fire academies formulate specific curricula out of respect for the “achievement goals” stipulated in the standards and by using the “Standard subjects and class hours” found therein as reference guidelines.

In addition, the increasing severe and frequent occurrence of disasters require advanced firefighting activities, and prevention work is becoming more sophisticated and specialized in accordance with revisions to fire laws and regulations. In order to enhance and strengthen education and training at fire academies, the FDMA is improving the equipment to be provided as standard and reviewing educational subjects and time allocations. Types of education and training include initial, specialized, leadership, and special courses for firefighters, and basic, specialized, leadership, and special courses for volunteer firefighters.

4. Education and Training and Technical Assistance at the Fire and Disaster Management College

The Fire and Disaster Management College provides the advanced education and training needed for management to the personnel engaged in firefighting operations at the national and prefectural level, as well as to municipal volunteer firefighters. In addition, it also provides the necessary technical assistance related to education and training for fire academies at the prefectural level.

(1) Enrollment in Education and Training

Although 21 courses and 13 practical courses were scheduled to be held during FY2021, some courses were cancelled due to the countermeasure against COVID-19, resulting in 862 graduates in 21 courses and 402 graduates in 12 practical courses.

As of FY2021, a total of 66,635 students have graduated from these courses since their establishment.

In addition, as in FY2021, the number of students in FY2022 was set at 1,560 in order to avoid the Three C’s as a countermeasure against infection by Covid-19. However, due to a series of cases in which students entering the school in July 2022 tested positive for Covid-19 infection in several departments, the number of students in some departments to be admitted after August was reduced to 1,524. (Attachment 2-4-1, untranslated)

A. Enhancement of education and training content in response to changes in social conditions

Regarding the education and training contents of each course, the following subjects have been incorporated in response to new issues arising from changes in social conditions and in accordance with the objectives of each department: harassment prevention, mental health, traumatic stress management, crisis management, public relations, and litigation response.

Furthermore, efforts are being made to round-out the contents of the curriculum, such as by adding in training that simulates commanding during a fire, simulation training for receiving assistance during a large-scale earthquake, and other such drills that make use of information systems, the implementation of firefighting drills (hot training) in environments similar to real fires utilizing the real fire training facilities, which was added in 2020 and now has two units, and landslide response training using a mock house buried under soil and sand, as well as lectures on firefighting drones.

Moreover, in order to expand training opportunities for women, 5% of the capacity of each department has been set as a priority quota for female firefighters, and a Women's Activity Promotion Course, which is a practical training course designed to support the career development of female firefighters, is available.

As a means of education, some programs incorporate on-demand e-learning for advance study and remote classes in a live format to shorten the duration of dormitory stays and to provide efficient education and training.

B. Countermeasures against COVID-19 at the Fire and Disaster Management College

Some Courses are shortening the duration of dormitory stays and reducing exposure through the use of remote classes and e-learning.

In addition, in light of the July 2022 outbreak of infection among students attending the school, the education and training systems have been maintained by further infection control measures taken through the reduction of the number of students in some departments and allowing students to commute to the school, as well as strengthening the management of the living environment of the student dorms.

(2) Facilities and Equipment

As a facility for advanced education and training, the Fire and Disaster Management College is equipped with a disaster response training room that simulates various disaster scenes to improve command skills, a real fire training facility to experience environmental changes similar to those at the scene of a fire, and a town-formed housing complex-type unit to simulate areas where activities are difficult, such as those with a high concentration of wooden houses.

Moreover, in order to provide practical training, the Fire and Disaster Management College possess training vehicles such as command vehicles, pump trucks, rescue vehicles, special disaster vehicles, and high standard emergency vehicles.

The dormitory also has women-only spaces (bathrooms, toilets, changing rooms, common rooms, etc.).

(3) Technical Assistance for Fire Academies

In addition to providing training for educators such as new fire chiefs, academy directors, and new and current instructors to acquire educational techniques, the Fire and Disaster Management College dispatches lecturers upon request in order to enhance the educational content of fire academies. In FY2021, a total of 132 lecturers were dispatched.

The Fire and Disaster Management College also provides a list of graduates and information on lecturers to help edit textbooks for new firefighters to be used at fire academies and to secure lecturers and other personnel with guaranteed knowledge and skills in specialized fields.



Training that simulates the experience of being in an actual fire (hot fire training)



Training that simulates the experience of being in an actual fire (hazardous material fire)



Drill on responding to mass casualties

Section 5 Ambulance Service System

☞ Japanese Original P.132

1. Implementation of Ambulance Services

(1) Ambulance Service Dispatch

Ambulance services were dispatched a total of 6,193,581 times in 2021 (an increase of 260,304, or 4.4%, from the previous year). Looking at the daily average, ambulance services were dispatched an average of approximately 16,969 times per day (an increase of approximately 758 compared to the previous year), meaning that ambulance service teams were dispatched at a rate of once every 5.1 seconds or so (5.3 seconds in the previous year).

Furthermore, the number of people transported by ambulance totaled 5,491,744 people (an increase of 197,914 people, or 3.7%, from the previous year). This means that one out of every 23 members (24 members in the previous year) of the public has been transported by an ambulance service team.

Looking at this by the type of incident that led people to be transported by an ambulance reveals that 3,605,179 people (65.6%) were transported due to sudden illness, 879,503 people (16.0%) suffered a general injury, 340,573 people (6.2%) suffered a traffic accident, and so on. (Attachment 2-5-1, 2, 3, 4, untranslated)

The number of times fire and disaster prevention helicopters were dispatched came to 2,488 (an increase of 71 from the previous year), and 1,914 people were transported by them (an increase of 17 from the previous year).

(2) People Transported by the Severity of Their Injury or Illness

Of the 5,491,744 people transported by ambulances in 2021, 44.8% were people with minor injuries or illnesses that did not require hospitalization (outpatient care) or other cases (cases where a doctor did not provide a diagnosis, etc.). (Attachment 2-5-5, untranslated)

(3) People Transported by Ambulance by Age Group and Type of Incident

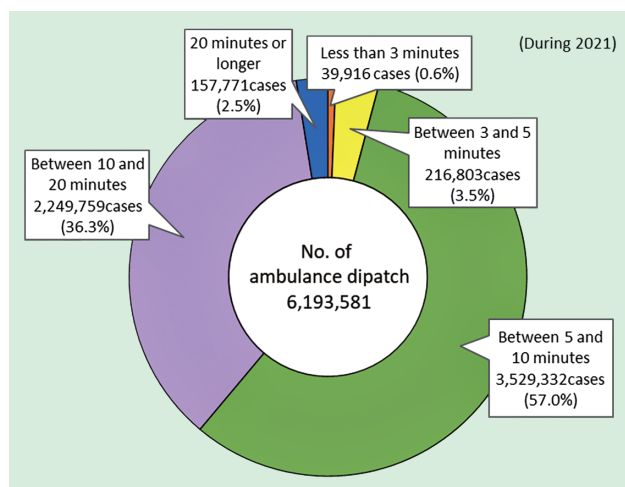
Viewing a breakdown of the 5,491,744 people transported by ambulance in 2021 by age group reveals that 12,303 of them were newborn infants (0.2%), 210,962 were young children (3.8%), 160,895 were youths (2.9%), 1,707,782 were adults (31.1%), and 3,399,802 were elderly people (61.9%). As the low birthrate and aging of society advances, the share accounted for by elderly people tends to be high. (Attachment 2-5-6, 7, untranslated)

Furthermore, elderly people accounted for the largest percentage of the people transported by ambulance for sudden illnesses (2,296,928 people, or 63.7%), while the largest percentage transported for traffic accidents consisted of adults (204,713 people, or 60.1%) and the largest percentage for general injuries consisted of elderly people (629,904 people, or 71.6%). (Attachment 2-5-7, untranslated)

(4) Time Required to Arrive at the Scene

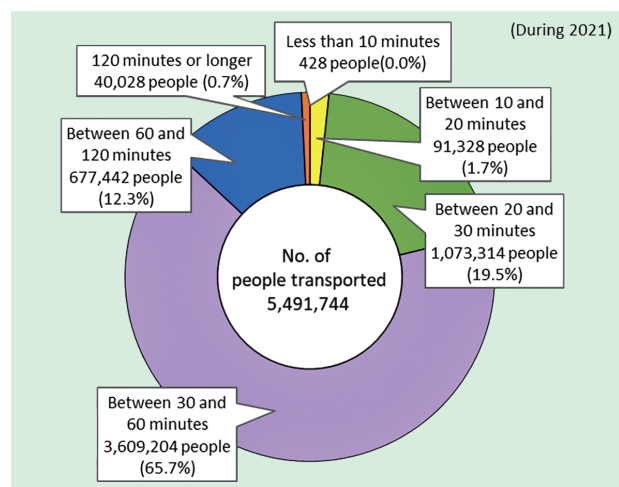
Looking at a breakdown of the 6,193,581 cases in which ambulances were dispatched in 2021 by the time required to arrive at the scene (time it took to arrive at

Fig. 2-5-1 No. of dispatch by time required for the ambulance to arrive at the scene

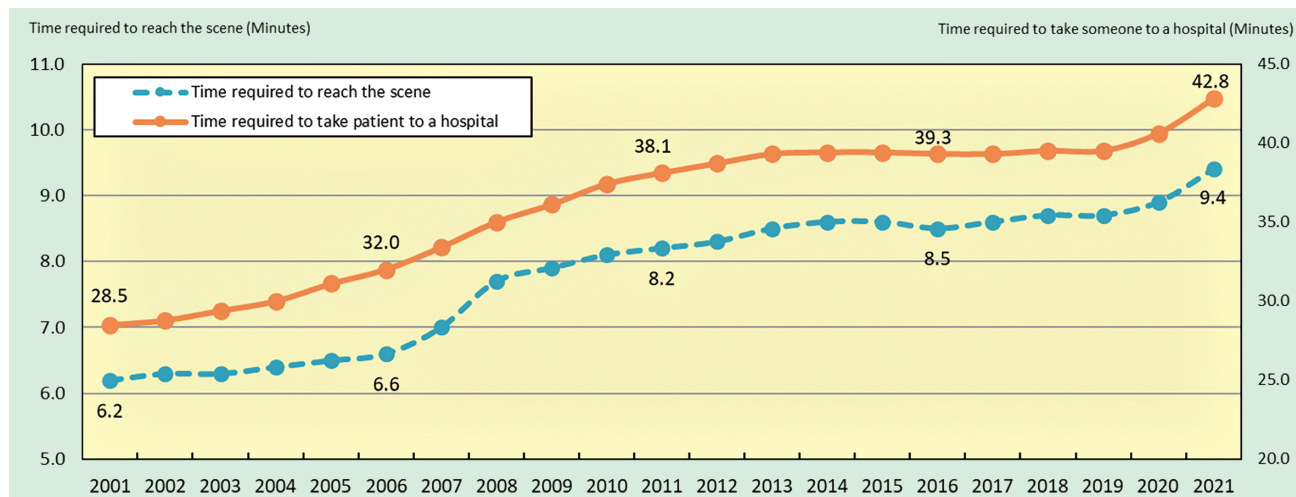


- (Notes) 1 Prepared based on "The Annual Report on Ambulance Service".
2 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

Fig. 2-5-2 No. of people transported by ambulance by time it took to check them into a hospital



- (Notes) 1 Prepared based on "The Annual Report on Ambulance Service".
2 Digits in the second decimal place were rounded off, so in some cases the totals may not be consistent.

Fig. 2-5-3 Trends in the amount of time it takes ambulances to arrive at the scene and the time it takes to check the patient into a hospital

(Notes) 1 Prepared based on "The Annual Report on Ambulance Service".

2 Due to the effects of the Great East Japan Earthquake, the figures were totaled by excluding data from the Kamaishi Ootsuchi District Administrative Office Fire Department and the Rikuzentakata City Fire Department from 2010 and 2011.

the scene after the 119 report was received) reveals that in the majority of cases it took between 5 and 10 minutes (3,529,332 cases, or 57.0% of the total). (Fig. 2-5-1)

Additionally, the average time required to arrive at the scene came to approximately 9.4 minutes (approximately 8.9 minutes, the previous year), and 1.2 minutes longer than it was ten years ago (2011). (Fig. 2-5-3)

(5) Time Required to Check the Patient into a Hospital

Looking at a breakdown of the 5,491,744 people transported by ambulance in 2021 by the time required to check the patient into a hospital (time required to check the patient into a hospital after the 119 report was received) reveals that the majority of people were checked in between 30 and 60 minutes at 3,609,204 people (65.7%). (Fig. 2-5-2)

In addition, the average time required to check the patient into a hospital came to approximately 42.8 minutes (approximately 40.6 minutes, the previous year), and 4.7 minutes longer than it was ten years ago (2011). (Fig. 2-5-3)

(6) First-aid Treatment Administered by Ambulance Team Members

Of the 5,491,744 people transported by ambulances in 2021, ambulance team members administered first-aid treatment to 5,477,016 patients (99.7%). This brings the total number of cases in which ambulance crew members administered first-aid treatment to 22,222,239. (Attachment 2-5-8, untranslated)

Furthermore, the total number of cases in which first-aid treatment was administered by ambulance crew members since their expansion in 1991 (items with * symbol in Attachment 2-5-8) came to 15,681,593 (a 6.6% increase year-on-year (YoY)). Of these, the number of cases in which EMTs administered first-aid treatment in order to resuscitate a patient based on the EMT act came to 262,645 (7.8% increase YoY).

2. Implementation Structure for Ambulance Services

(1) Number of Municipalities Offering Ambulance Services

The number of municipalities offering ambulance services as of April 1, 2022 totaled 1,690 municipalities (793 cities, 736 towns, and 161 villages) (the special wards of Tokyo were counted as one city; the same hereinafter in this section).

Ambulance services are offered in 98.3% of municipalities (same as the previous year), and cover 99.9% of the total population (same as the previous year; the population used is from the 2020 national census; the same hereinafter in this section), which means that ambulance services can be received in virtually every region. (Attachment 2-5-9, 10, untranslated)

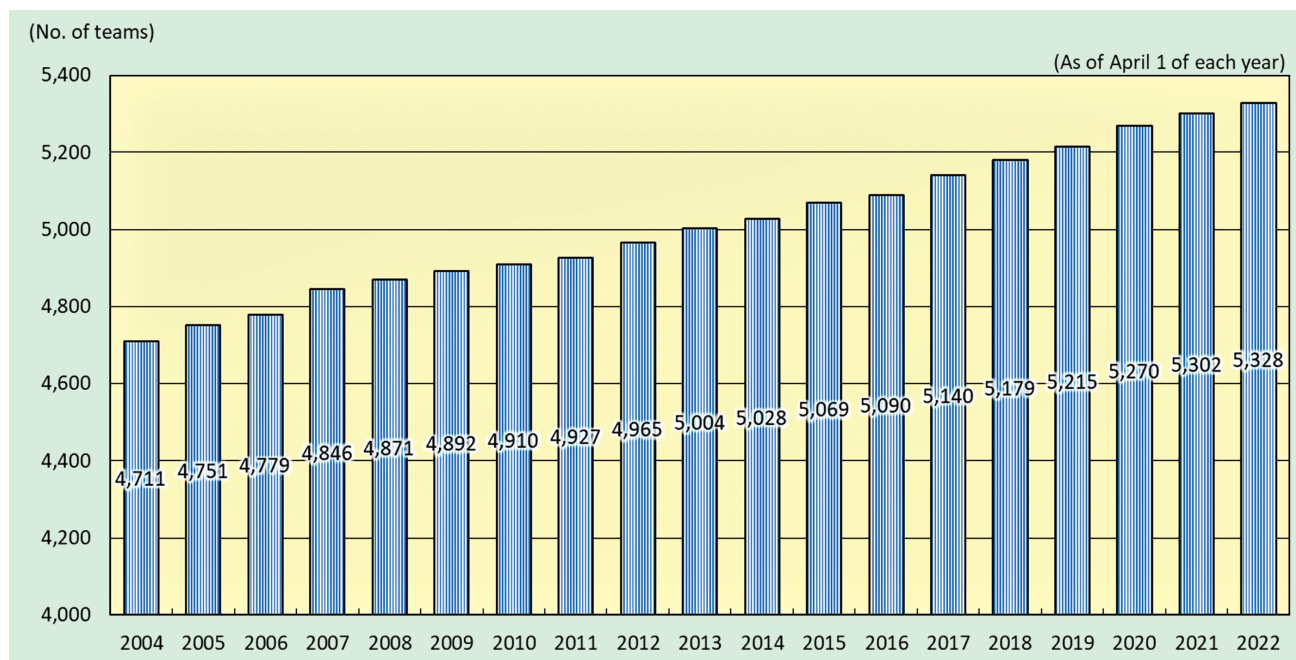
When viewed by the configuration through which said ambulance services were offered, 435 municipalities offered them independently, 146 did so by outsourcing them, and 1,109 did so through special district authorities and extended associations.

(2) Number of Ambulance Teams, Ambulance Team Members and Associate Ambulance Team Members

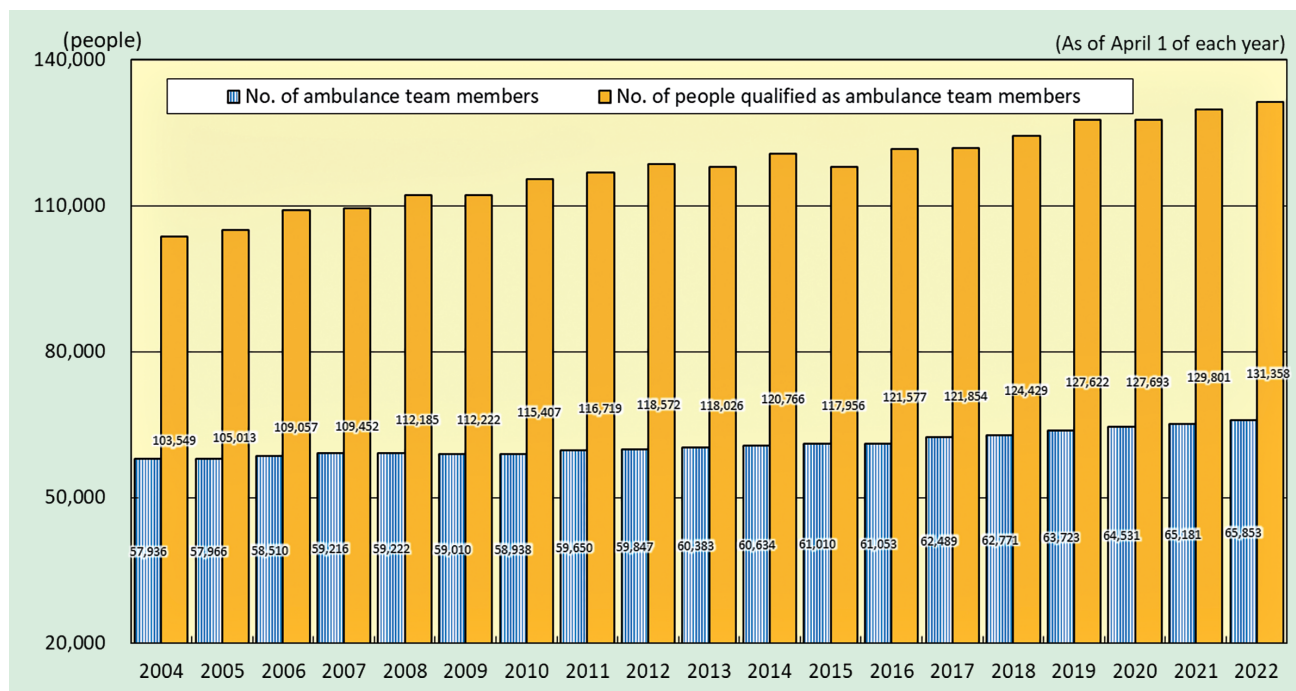
As of April 1, 2022, 5,328 ambulance teams (an increase of 26 YoY) had been established. (Fig. 2-5-4)

Since ambulance team members are engaged in the important duty of saving people's lives, they must complete at least 135 hours' worth of training courses on ambulance services (the former Ambulance I Course).

As of April 1, 2022, the number of firefighters who fulfilled this eligibility requirement came to 131,358 (an increase of 1,557 YoY). Of these, 65,853 were engaged in ambulance services as ambulance team members (including not only full-time ambulance team members, but also ambulance team members who have been appointed as such and who concurrently serve on firefighting vehicles such as pump vehicles by riding along with them). (Fig. 2-5-5)

Fig. 2-5-4 Trends in the number of ambulance teams

(Note) Prepared based on "The Annual Report on Ambulance Service".

Fig. 2-5-5 Trends in the number of ambulance team members

(Note) Prepared based on "The Annual Report on Ambulance Service".

Furthermore, of the firefighters who fulfilled the eligibility requirements to be ambulance team members, the number who had completed 250 hours' worth of ambulance courses to enable them to provide even more advanced first-aid treatment (including the former Ambulance Standard Course and former Ambulance

II Course) totaled 86,631 people (an increase of 707 YoY) nationwide as of April 1, 2022. Of these, 33,941 are engaged in ambulance services as ambulance team members. As of April 1, 2022, 16 associate ambulance team member*¹ are engaged in ambulance services nationwide.

*¹ Associate ambulance team member: Based on the Order for Enforcement of the Fire Services Act, in depopulated areas and remote islands, when a municipality has established an implementation plan as a measure to ensure appropriate ambulance services, it is possible to organize an ambulance team consisting of two ambulance team members and one associate ambulance team member. Associate ambulance team members are full-time firefighters, etc., who have completed a basic training course on ambulance services.

(3) Trends in the Number of EMTs and Ambulance Teams with EMTs

As a result of the increasing sophistication of ambulance services, the FDMA is promoting the training of EMTs and the development of an operational system where the objective is to have at least one EMT stationed with every ambulance team.

As of April 1, 2022, 722 fire departments out of 723 fire departments in Japan are making use of EMTs, and the usage rate is 99.9% (same as the previous year).

The number of ambulance teams with EMTs came to 5,301 (an increase of 26 YoY), which corresponds to 99.5% of the 5,328 ambulance teams throughout Japan (same as the previous year), with this rising year by year. Furthermore, there were 42,495 fire departments personnel with EMT qualifications (an increase of 1,229 people YoY). Of these, 29,389 had been put to use as EMTs (an increase of 667 people YoY), with this number steadily increasing year by year. (Fig. 2-5-6, 7)

(4) Number of Ambulances

The number of ambulances owned by fire departments throughout Japan as of April 1, 2022 totaled 6,549 (a decrease of 30 YoY), including those for emergency use. Of these, the number of high-standard ambulances was 6,436 (a decrease of 16 YoY), which corresponds to 98.3% of the total.

(5) Ambulance Services along National and Other Expressways

When it comes to ambulance services along national expressways, the Seto-Chuo Expressway, and the Kobe-Awaji-Naruto Expressway (hereinafter referred to as

“national and other expressways”), the East Nippon Expressway Company, Central Nippon Expressway Company, West Nippon Expressway Company, and Honshu-Shikoku Bridge Expressway Company (hereinafter referred to as “expressway companies”) are responsible for road management operations and offering centralized, independent ambulance services. Moreover, the municipalities along said expressways are responsible for handling ambulance services as per the provisions of the Fire Service Act. So it has been stipulated that both parties are to work together to properly and efficiently safeguard human life.

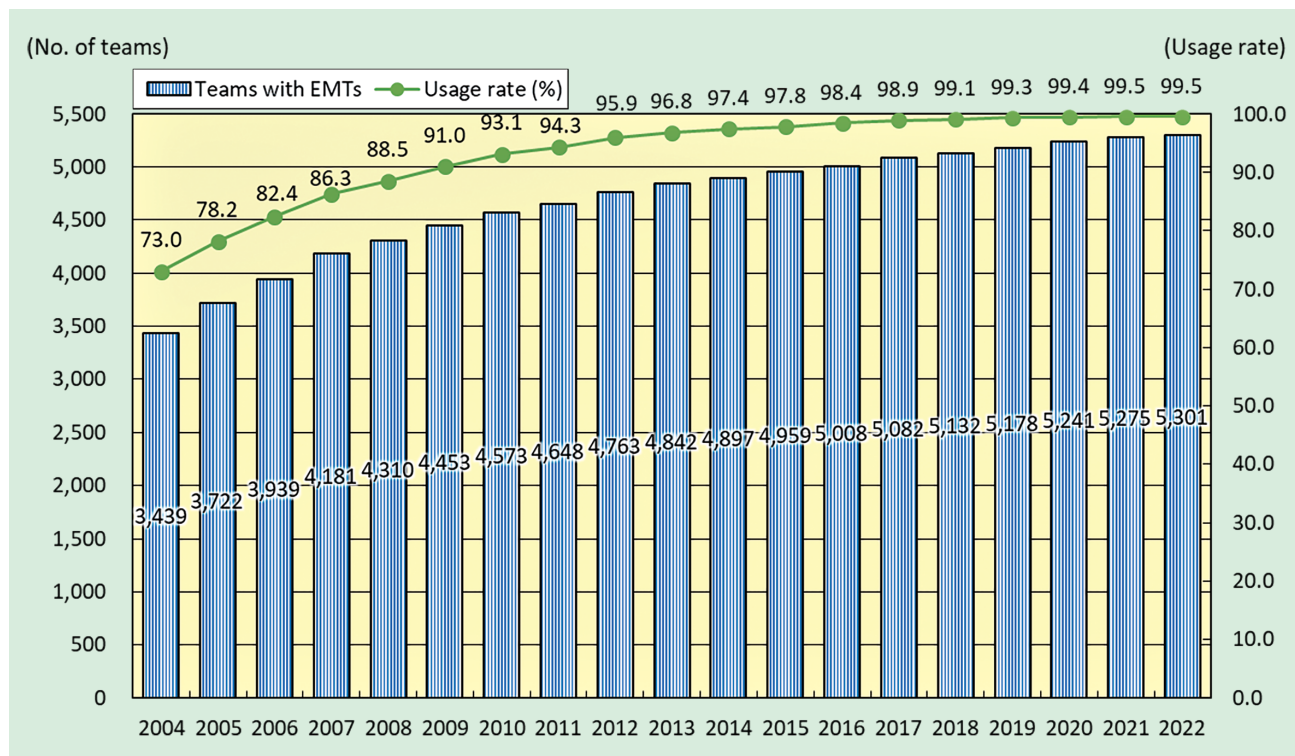
As of April 1, 2022, ambulance services along national and other expressway were provided by municipal firefighting agencies over every section of the 9,281km of the length of expressway currently in use. The expressway companies bear a certain extent of the financial burden that is placed on the municipalities providing ambulance services.

3. Promoting Coordination between Firefighting and Medical Care

(1) Standards on Patient Transport and Their Acceptance

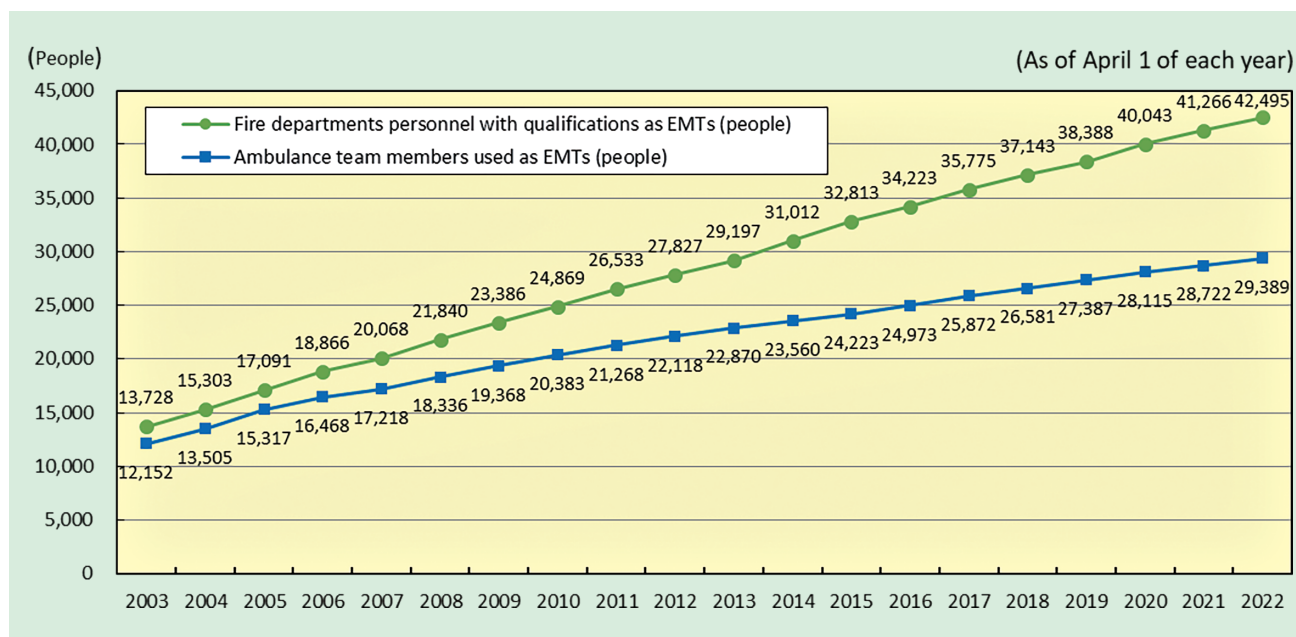
In order to ensure the smooth implementation of the transportation and reception of injured and sick persons, the Fire Service Act stipulates that prefectures shall formulate the Standards on Patient Transport and Their Acceptance (hereinafter referred to as the “acceptance standards”) and establish a council on the Implementation Standards (hereinafter referred to as “Legal Council”). The hope is that through the legally-mandated committees, the

Fig. 2-5-6 Trends in the number of ambulance teams with EMTs



(Note) Prepared based on “The Annual Report on Ambulance Service”.

Fig. 2-5-7 Trends in the number of EMTs



(Note) Prepared based on “The Annual Report on Ambulance Service”.

prefectures will survey and verify the transport of patients and their acceptance status based on the acceptance standards. Then, based on this, it is hoped that they will tie the results of this in with making improvements to the acceptance standards and so forth.

For its part, the FDMA works to follow up by working to understand the efforts and challenges faced by each prefecture, as well as by introducing examples of efforts that are operating effectively in certain regions.

In addition, in light of the fact that emergency transport is carried out based upon the acceptance standards, local governmental financial measures are being taken through special tax grants with respect to the costs entailed by the assistance rendered to private secondary ambulance institutions*2 by local public bodies in an effort to enhance ambulance medical care structures in local regions.

(2) Ambulance Medical Care Structure

With regard to the notification status of emergency hospitals and emergency clinics, which constitute the primary destinations to which patients are taken, as of April 1, 2022 there were 4,175 such locations throughout Japan. (**Attachment 2-5-11**, untranslated)

There are 551 weekend and nighttime ambulance care centers (as of April 1, 2020) that ensure that initial medical care can be received on weekends and at nights, which serve as the initial ambulance medical care structure. 2,737 hospitals make up the rotating hospital group and joint-use hospitals that comprise the secondary medical care system (as of April 1, 2020), and 300 emergency medical care centers (as of July 1, 2022) make up the tertiary medical care system. Additionally, among the emergency medical care centers are advanced emergency medical care centers capable of handling patients with specific illnesses or injuries, such as extensive burns, severed digits and limbs,

and acute poisoning, of which 46 locations have been set in place (as of July 1, 2022).

The approval of emergency hospitals and emergency clinics under the emergency notification system, and the development of initial, secondary, and tertiary medical care systems are implemented in a centralized fashion under the medical care plan approved by the prefectural governor.

Under these emergency care systems and through the acceptance standards enacted by the prefectures in accordance with the provisions of the Fire Service Act, a list of medical institutions that can provide medical care according to patients' conditions has been compiled. Firefighting agencies use this list when carrying out ambulance operations.

(3) Acceptance of People Using Ambulance Transport at Medical Institutions

The FDMA performed surveys on the actual state of acceptance for patients with severe conditions or worse, pregnant or perinatal patients, young patients, and patients transported to emergency medical care centers.

Comparing the results of the “Survey of Medical Institution Acceptance of Ambulance Transports in 2021” with the results of the same survey in 2020, the number and percentage of cases with four or more inquiries increased in all of the following categories: the seriously injured increased, women with pregnancy related and perinatal conditions, injured children, and patients to emergency medical care centers. (**Attachment 2-5-12**, untranslated) The number and percentage of cases in which the ambulance stayed at the scene for 30 minutes or also increased. (**Attachment 2-5-13**, untranslated)

*2 Private secondary ambulance institution: Among secondary medical institutions, ambulance service notice institutions (excluding national and public medical institutions and public institutions).

4. Promotion of More Sophisticated Ambulance Services

(1) Promotion of Education for Ambulance Service Personnel

In 1991, the Emergency Medical Technicians Act was enforced and a new qualification system was set up to make EMTs who are responsible for performing certain first-aid treatment under the direction of physicians until the ambulance team members arrive at the hospital or clinic after having arrived at the scene.

In the case of firefighters, the EMT qualification can be obtained by completing an ambulance services course, engaging in ambulance services for 5 years or at least 2,000 hours, and then completing an EMT training course for at least 6 months before passing a national examination. After obtaining the qualification, EMTs assigned to a fire service agency are required to take at least 160 hours of hospital training before engaging in ambulance services, and at least 128 hours of further training every two years (of which, hospital training should be at least 48 hours) thereafter.

Because of the advanced and specialized nature of the content and the need to consider the efficiency of education and training, the training of EMTs for fire service agencies is conducted by the Foundation for Ambulance Service Development established in 1991 with investment from 47 prefectures nationwide following the enactment of the Emergency Medical Technicians Act, as well as by the EMT training centers in the designated cities, and EMT training course at the Fire Management College. In FY2021, 801 EMTs at the EMT Training Center of the Foundation for Ambulance Service Development and 392 EMTs at the EMT training centers in the designated cities or EMT training course at the Fire Management College completed the training course and took the national examination.

In response to the promulgation and enactment of the Cerebrovascular and Cardiovascular Disease Control Act, the FDMA received a proposal from relevant academic societies based on the latest scientific findings regarding the observation and treatment of cardiovascular disease and stroke among ambulance teams, and an examination of this proposal was conducted at the “FY2019 Investigative Committee on the State of Ambulance Services”. The FDMA issued a notice regarding items deemed appropriate by the Investigative Committee titled “Observation and Treatment in Ambulance Teams” (Notice, dated March 27, 2020).

In addition, ambulance team members, including EMTs, are required to receive education for their respective roles as new ambulance team members, current ambulance team members, and ambulance team leaders in accordance with the “Guidelines for Continuing Education for Personnel Engaged in Ambulance Services Ver. 1” (March 2014). In order to establish such an educational system, EMTs in leadership positions, who are responsible for providing education and guidance to their personnel and coordinating with related organizations regarding the educational system, are positioned as “instructor EMTs,” and as of April 1, 2022, 2,563 instructor EMTs have been certified nationwide.

Furthermore, the promotion of national exchanges among ambulance team members and the improvement of their knowledge and skills necessary for emergency

activities are being done through training and research opportunities such as the National Ambulance-Crew Symposium and the Japanese Society for Emergency Medicine.

(2) Increase in the Treatment Scope of EMTs

At the time of the system’s establishment in 1991, the only life-saving procedures (specified acts) performed by EMTs under specific instructions from physicians were defibrillation using a semiautomatic defibrillator, infusion of lactated Ringer’s solution to establish an IV line, and airway management using an esophageal obturator airway or laryngeal mask, but these were gradually expanded by the Ministry of Health, Labor, and Welfare.

As of April 1, 2022, 15,977 ambulance team members qualified as EMTs were able to perform tracheal intubation (of which 7,575 were able to use a video laryngoscope for rigid intubation,) 28,827 were able to administer drugs (adrenaline), 27,535 were able to establish an IV line and administer fluids to severely injured patients before cardiopulmonary arrest, and 27,554 were able to measure blood sugar and administer glucose solution to patients suffering from hypoglycemic attacks.

(3) Enhancement of Medical Control System

The medical control system in ambulance services is a system that ensures the quality of first aid, etc. performed by ambulance team members, including EMTs, from a medical point of view. Specifically, it is a system that, in collaboration with fire departments and medical institutions, (1) creates various protocols according to the characteristics of the region based on medical grounds, (2) enables emergency personnel to promptly request instruction, guidance, or advice from physicians at any time from a scene of an emergency, (3) has physicians conduct a medical and objective post-verification of emergency efforts, and feeds back the results of said post-verification, as well as (4) conducting further education, etc. The Medical Control Council, which is a forum for discussions between fire departments and medical institutions, is established at the prefectural and regional levels. As of August 1, 2022, there are 47 prefectural Medical Control Councils and 250 regional Medical Control Councils in Japan. The role of the medical control system in ambulance services has expanded from that of observing EMTs and guaranteeing their treatment from a medical perspective, which is the basis and foundation of the system, to one of ensuring the appropriate operation of local ambulance transportation and emergency medical resources through the formulation of standards for the transport and acceptance of injured and sick patients. It has evolved into something more diverse and tailored to the actual conditions of each region, with a view toward a cooperative role for fire, rescue, and emergency medical services in the coordination of medicine and nursing as part of comprehensive community care.

Based on the result of “the FY2020 Study Group on the State of Ambulance Services,” which examined the current issues facing the medical control system and their solutions, the FDMA issued a notice on March 26, 2021 titled “Further Enhancement and Strengthening of Medical Control System in Emergency Services”, which indicated that related organizations should work closely together to further enhance the medical control system, and that the system should be built and improved continuously through

the PDCA cycle using objective performance indicators. In addition, in the “FY2021 Study Group on the State of Ambulance Services” we have just conducted a further study regarding the continued promotion of the PDCA cycle initiative and the enhancement of performance indicators through understanding the utilization of performance indicators as well as the advanced example initiatives of each region following notification.

The recent diversification of roles required of medical control councils can also be viewed in terms of “CPR at the scene of an emergency in accordance with the wishes of the injured or sick person.” As the number of elderly people requesting ambulance services is increasing, there are cases in which ambulance services are requested by the families of patients to stop performing cardiopulmonary resuscitation (CPR) because they are told that the patient does not want CPR. Based on this background, at a subcommittee of the “2018 Investigative Committee on the State of Ambulance Services”, experts indicated a basic awareness that ‘the person’s choices’ should be respected’ in cases where the patient’s family communicates at the scene of an emergency that the patient does not want CPR treatment. At scenes of emergencies, which consist of all kinds of scenarios and are urgent situations, and in many cases, there is no physician present, usually, the ambulance team has time and information-related restrictions such as the wishes of the injured or sick person are not shared with them beforehand. Therefore, the committee concluded that it is necessary to clarify the actual situation of the cases and through verification in each place, to increase knowledge about the response of the ambulance team by accumulating all cases.

Based on the results of these surveys, the FDMA issued a notice titled “Report of the Investigative Subcommittee

on the Implementation of CPR at the Scene of an Emergency in Line with the Wishes of the Sick or Injured Person at the FY2018 Investigative Committee on the State of Emergency Services” (Notice, dated November 8, 2019) to the heads of fire and disaster management departments in each prefecture. This notice states that firefighting agencies will be required to (1) make efforts to appropriately participate in community discussions on the Community-based Integrated Care System*³ and ACP (Advance Care Planning, also known as Jinsei Kaigi)*⁴ together with those involved in home medical and nursing care, and proactively exchange opinions, etc., (2) make efforts to, when considering the response of ambulance teams and in addition to (1) above, seek participation from those involved in home medical and nursing care in medical control committees, etc., and hold sufficient discussions while taking into account the status of end-of-life medical care and care initiatives at the community level, as well as the status of home medical care and elderly care facilities, and (3) consider making this subject to subsequent verification at medical control councils.

(4) Use of Emergency Resuscitation Statistics (Utstein data)

In Japan, the Utstein Style*⁵ has been introduced across all fire departments nationwide since January 2005. The FDMA also operates an online system for collecting and analyzing the results of research done via the Utstein Style, and has accumulated 17 years’ worth of data from 2005 to 2021. On an application basis, the data is provided to related academic societies so that the accumulation of this data can be used appropriately and effectively. The data is also used for constructing measures and systems for improving the lifesaving rate.

—omitted—

*³ Community-based Integrated Care System: A system that comprehensively ensures medical care, long-term care, long-term care prevention (prevention of a state requiring nursing care or support, or reduction/prevention of the worsening of a state requiring nursing care or support), housing, and support for independent living in accordance with local conditions, so that elderly people can lead independent lives within their own communities for as long as possible according to their abilities.

*⁴ ACP (Advance Care Planning): A process in which the individual repeatedly discusses end-of-life medical treatment and care in advance with family members and their medical care teams.

*⁵ Utstein Style: This is a survey and statistical approach for classifying cases of cardiopulmonary arrest according to the cause, whether it was witnessed or not, whether bystanders performed CPR or not, etc., and recording the prognosis (survival rate after one month, etc.) of the injured or sick in each category. It was proposed at an international conference held at Utstein Monastery in Norway in 1990 and is recommended worldwide.

Section 6 Rescue System

☞ Japanese Original P.146

1. Implementation Status for Rescue Activities

(1) Number of Rescue Activities and Number of People Rescued

The life-saving rescues performed by firefighting agencies refer to activities whereby human or machine-power is used to extricate people from dangerous situations and transport the victims to safe locations. Examples of such dangerous situations include fires, traffic accidents, water accidents, natural disasters, and accidents due to machines.

As for the implementation status for rescue activities throughout Japan in 2021, 63,198 rescue activities were carried out (an increase of 3,221, or 5.4%, YoY) and 59,861 people were rescued (this refers to the number of people rescued through rescue activities; an increase of 1,909, or 3.3%, YoY). (Attachment 2-6-1, 2, untranslated)

The main reason for the increase in the number of rescue activities and people rescued was the increase in accidents due to buildings. (Fig. 2-6-1, 2)

(2) Implementation Status of Rescue Activities by Type of Incident

Looking at the status of rescue activities by type of incident, “accidents due to buildings” and “traffic accidents” accounted for a large percentage of both the number of rescue activities and the number of rescued people. In particular, the number of “accidents due to buildings” continues to increase.

The number of rescue workers dispatched (which

refers to the total number of people dispatched in order to carry out rescue activities) came to 1,523,937 in total. Of these, the largest number of firefighters were dispatched for rescue activities in response to “Accidents due to buildings”, followed by “Traffic accidents”. At the same time, volunteer firefighters were mostly dispatched for fires.

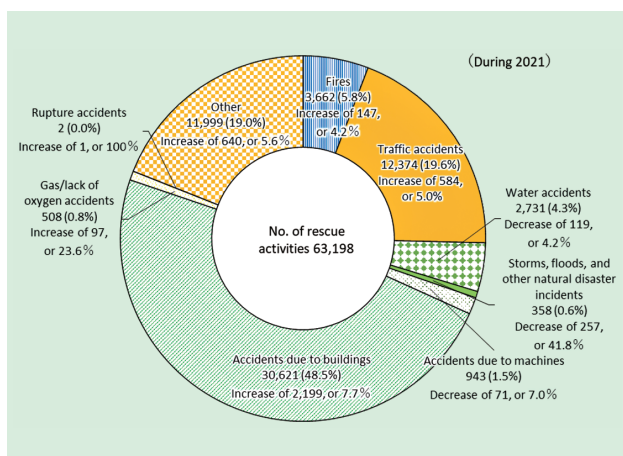
The number of people who engaged in rescue activities (this refers to the number of people who actually engaged in rescue activities out of the number dispatched) totaled 594,341. In terms of the number of people engaged in each individual rescue activity by type of incident, “storms, floods, and other natural disaster incidents” was the most common type of accident, followed by “fire”. (Attachment 2-6-3, untranslated)

2. Implementation Structure for Rescue Activities

(1) Number of Rescue Crews and Number of Rescue Crew Members

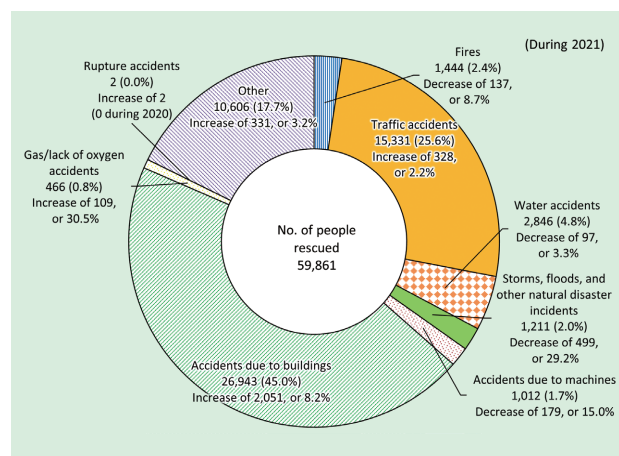
Rescue crews are established in municipalities that have fire departments and fire stations pursuant to the Ministerial Ordinance Establishing Standards for the Organization, Outfitting, and Establishment of Rescue Crews (hereinafter referred to as the “Rescue Ordinance”). They consist of members who have received specialized education related to lifesaving (140 hours’ worth), as well as rescue and relief supplies and the rescue vehicles equipped with these needed for rescue activities. They are categorized into four classifications: rescue crews, special rescue crews, advanced rescue crews, and special advanced rescue

Fig.2-6-1 Number of rescue activities by type of incident



(Note) Prepared based on “The Survey on the Implementation Status of Rescue Activities”.

Fig.2-6-2 Number of people rescued by type of incident



(Note) Prepared based on “The Survey on the Implementation Status of Rescue Activities”.

crews.*¹

As of April 2022, 1,420 crews had been established at 706 fire departments, and the number of rescue crew members came to 24,339 people (a decrease of 31 YoY).

(2) Possession Status of Rescue Equipment for Rescue Activities

Rescue equipment for rescue activities includes equipment for removing heavy objects such as hydraulic spreaders, cutting equipment like hydraulic cutters, detection and measurement equipment such as inflammable gas measuring instruments, and more. Since more advanced, specialized equipment has been deemed necessary for them to guard against the large-scale earthquake disasters and NBC disasters*² that could potentially occur, the establishment and maintenance of rescue work vehicles and rescue equipment is being promoted through subsidies for equipping National Fire-Service Teams and local taxation measures. (Attachment 2-6-4, untranslated)

3. National Firefighting and Rescue Skills Meets

The National Firefighting and Rescue Skills Meet has been held every year since 1972 (sponsored by the Japan Firefighters Association, with the backing of the FDMA and others). Its goal is to foster the physical strength, mental toughness, and technical capabilities needed for rescue activities, as well as to gather rescue crew members from throughout Japan together to cultivate crew members who can serve as examples to others through competition and learning.

This competition is divided up into a land division and a water division. For each division, there is “Basic training” where individual crew members practice basic skills, “Coordinated training” where crew members practice their individual skills together by cooperating with other crew members, and “Skills training” where participating crew members demonstrate everything from training assumptions to rescue methods using creativity and ingenuity without stipulations as to the equipment or training skills that will be used.

The 50th in 2022 was held in Tachikawa, Tokyo. Here 718 crew members took part in the land division and 250 took part in the water division. In 2023, the meet is scheduled to be held in Sapporo, Hokkaido.

–omitted–

*1 Special rescue crews, advanced rescue crews, and special advanced rescue crews: The Rescue Ordinance stipulates that municipalities with a population of 100,000 people or more and a standing fire defense structure must establish a special rescue crew. Core cities and the like must have one or more special rescue crews that serve as advanced rescue crews, and the Tokyo Fire Department and ordinance-designated cities must have one or more advanced fire crews that serve as special advanced rescue crews.

*2 NBC disasters: Disasters caused by Nuclear, Biological, or Chemical substances.



Integrated Fire Service Support and National Fire-Service Team for Disaster Response

Japanese Original P.154

1. Integrated Support System for Fire Service

(1) Mutual Support Agreement for Fire Services

As municipalities are obliged to make efforts to support each other as and when necessary regarding firefighting efforts by concluding agreements on mutual firefighting support, it is now possible to respond appropriately to large-scale disasters and special disasters.

Currently, in all prefectures, there are firefighting mutual support agreements (including agreements for only municipalities where firefighting services are on hand) in which all municipalities under each prefecture and firefighting administrative associations and so on participate.

(2) Establishment of Integrated Support System for Fire Service

To respond to large-scale disasters and special disasters, it is necessary for firefighting capabilities to operate extensively beyond the districts of municipalities or prefectures. For this reason, the FDMA has both enhanced and strengthened the National Fire-Service Teams described in section 2, as well as formulated the “Guidelines for the Implementation of Wide-Area Aerial Firefighting Support Teams in the Event of a Large Scale Special Disaster” in 1986 in order to efficiently implement the use of helicopters as, in the event of a forest fire or other large scale disaster, helicopters excel in all areas of firefighting and disaster prevention, such as aerial firefighting, rescue activities, emergency operations, information gathering, and emergency transportation. The guidelines clarify the procedures for requesting support based on article 44 of the Firefighting Agency Organization Act, and promote the active use of firefighting helicopters owned by firefighting agencies and prefectures for wide-area support (**Attachment 2-8-1**, untranslated).

2. National Fire-Service Teams for Disaster Response

(1) Creation of National Fire-Service Teams for Disaster Response and Their Enshrinement in Law via Revisions to the Fire Defense Organization Act

A. Creation of National Fire-Service Teams

National Fire-Service Teams were created in June 1995 through the cooperation of fire departments from throughout Japan in order to create an assistance structure through the mutual cooperation of firefighting agencies from around the country. This was based on the lessons from the Great Hanshin-Awaji Earthquake on January 17, 1995, and designed to make it possible to carry out lifesaving rescue activities when large-scale disasters such as earthquakes occur within Japan in a faster, more effective manner.

The system is structured so that during times of normalcy, National Fire-Service Teams focus all of their energies on carrying out firefighting duties in their respective local regions. But once a large-scale disaster occurs somewhere in Japan, firefighting teams dispatch in a concentrated manner to the afflicted region from throughout the country to respond to said disaster at the request or instructions of the Commissioner of the FDMA. There they engage in firefighting activities, including lifesaving and rescue activities.

When they were first launched, National Fire-Service Teams consisted of 376 teams registered with the FDMA to provide domestic assistance for firefighting. They were comprised of rescue crews, ambulance crews, and more. There were also 891 out-of-prefecture assistance teams that engaged in activities between neighboring prefectures, which consisted of firefighting teams and others. This brought the total to 1,267 teams. In January 2001, a registration system for fire teams was introduced in order to enhance the dispatch structure for National Fire-Service Teams and response capabilities for various disasters.

In addition, a number of new types of teams were established in order to handle increasingly complicated and diverse disasters. These included special disaster teams with the capacity to respond to special disasters such as oil and chemical disasters, as well as those involving toxic or hazardous substances, or radioactive materials, as well as air teams that use fire and disaster prevention helicopters and water teams that use firefighting boats. This brought the types of teams to 8, and the number of teams to 1,785.

B. Enshrinement in Law through the 2003 Revisions to the Fire Organization Act

It has been pointed out that potential earthquakes like a Tokai Earthquake, Tonankai/Nankai Earthquake, or Tokyo In Land Earthquake are imminent, and the dangers of NBC terrorism disasters. As such, scenarios can be envisioned where it would be difficult to respond to such disasters promptly and precisely solely through the firefighting capabilities of the municipalities in the afflicted region or those found in the afflicted prefecture. Therefore, the Commissioner of the FDMA has been vested with the necessary authority to work to enhance and strengthen emergency response structures from a national perspective. In conjunction with this, the Act for the Partial Revision of the Fire Organization Act was drafted in 2003 and entered into force in 2004. This act included provisions for national financial measures, etc.

(a) Main Content of the Revised Law

The main content of the revised law consists of staking out a clear legal position for National Fire-Service Teams, establishing the authority of the Commissioner of the FDMA to order dispatches, formulating basic plans relating to the organization of National Fire-Service Teams and the development of facilities (hereinafter in this section referred to as the “Basic Plan”), and the

financial measures of the national government.

(b) Legal Position and Dispatch Orders by the Commissioner of the FDMA

National Fire-Service Teams, which have been put to use based on certain guiding principles since they were established, were given a clear legal position within the Fire Defense Organization Act through the revisions to this law. In addition, in the event that a Tokai Earthquake or other large-scale disaster extends over two or more prefectures or an NBC disaster were to occur, the Commissioner of the FDMA shall be able to issue the orders to take the necessary measures to dispatch National Fire-Service Teams. This authority to order dispatches was established based on the thinking that the national government bears responsibility for deploying firefighting capabilities to afflicted regions in the form of ordering the dispatch of National Fire-Service Teams for large-scale disasters that should be handled from a truly nationwide perspective. The unprecedented, enormous disaster of the Great East Japan Earthquake was the first time this authority was exercised since it was established.

(c) Enactment of the Basic Plan Pertaining to National Fire-Service Teams

By law it has been mandated that the Minister for Internal Affairs and Communications is to enact the Basic Plan.

This Basic Plan, enacted in February 2004, established matters such as standards for equipping and organizing the crews that comprise National Fire-Service Teams, dispatch plans, and targets for setting in place the necessary facilities. When initially enacted, it set a target of registering 3,000 National Fire-Service Teams by FY2008.

(d) Financial Measures by the National Government for National Fire-Service Teams

The dispatch of National Fire-Service Teams has been legally mandated in cases where they have been ordered to dispatch by the Commissioner of the FDMA. Therefore, the expenses that are newly required as a result of said dispatches are to be borne by the national government as treasury expenses as per Article 10 of the Local Government Finance Act.

Furthermore, the establishment of facilities pursuant to the Basic Plan were clarified in the Fire Defense Organization Act as constituting “expenses to be subsidized by the national government.” In addition, the eligible facilities and the subsidy rate (one-half) have been established through government ordinance.

(e) Free Use of Equipment for National Fire-Service Teams

Regarding the equipment and materials deemed necessary for the activities of the National Fire-Service Team, it would be difficult to expect progress in the maintenance of vehicles and equipment, even with government subsidies, if the maintenance and possessions of such equipment is not efficient in terms of cost-effectiveness. There is some equipment that needs to be provided quickly in order to fulfill the national government’s responsibilities when it comes to large-scale and specialized disasters. As such, it was stipulated that this equipment is to be set in place by the national government, but provided for use free of charge to the

prefectures or municipalities to which the personnel who are active as National Fire-Service Team members belong.

C. Enhancing Mobility through the 2008 Revisions to the Fire Defense Organization Act

In 2008 the Act for the Partial Revision of the Fire Defense Organization Act was drafted and entered into force. This included content such as enhancing the mobility of National Fire-Service Teams in an effort to further strengthen fire and disaster defense structures for large-scale earthquakes such as a Tokai Earthquake, Tonankai/Nankai Earthquake, or Tokyo in Land Earthquake.

(a) Main Content of the Revised Law

The main content of the revised law consists of establishing the authority for prefectural governors to order the dispatch of National Fire-Service Teams that are already active in municipalities where disasters have occurred, the establishment of coordination headquarters for firefighting support activities, and revisions to the requirements for the orders to dispatch National Fire-Service Teams by the Commissioner of the FDMA.

(b) Establishment of the Authority for Prefectural Governors to Order Dispatches

This stipulated that prefectural governors can order the dispatch of National Fire-Service Teams active in municipalities where they normally operate. This can be done in cases where a disaster has occurred in two or more municipalities within a prefecture, and where it is deemed necessary for the sake of urgently providing firefighting support for municipalities where a disaster has occurred that lie outside of the municipalities in which said National Fire-Service Teams normally operate. This structure was set in place based on the fact that teams spanning across municipal borders within the same prefecture were mobilized for the 2004 torrential rain disasters in Niigata and Fukushima, as well as the Mid Niigata Prefecture Earthquake in 2004. In cases spanning across prefectural borders, it has been stipulated that the Commissioner of the FDMA shall coordinate this, since said coordination will span across two or more prefectures.

(c) Establishment of Coordination Headquarters for Firefighting Support Activities

To ensure that the prefectural governor’s orders from (b) are carried out smoothly, the prefectural governors are to establish coordination headquarters for firefighting support activities (hereinafter in this section referred to as “coordination headquarters”) in order to carry out the general coordination for measures like lending support for firefighting when National Fire-Service Teams are dispatched for this purpose. The coordination headquarters are tasked with handling tasks related to coordinating with the Japan Self-Defense Forces, police, and other relevant organizations. This is done in an effort to ensure that tasks related to general coordination over measures designed to support the firefighting activities carried out by the prefecture and municipalities within the prefecture in question are carried out smoothly.

(d) Revisions to the Requirements for the Commissioner of the FDMA to Order the Dispatch of National Fire-Service Teams

It was stipulated that the Commissioner of the FDMA can order the governors of prefectures aside from the prefecture where the municipality in which the disaster occurred is located or the mayors of municipalities within the prefecture in question to take the necessary measures to dispatch their National Fire-Service Teams. Where this was previously limited to cases where the disaster was regarded as a large-scale disaster spanning more than one prefecture or NBC disasters, now it can be done when it has been acknowledged that there is a special need to respond to the disaster in question, even when it is a large-scale disaster that has occurred solely within a single prefecture.

In addition, in March 2019, the Basic Plan was revised to stipulate that the factors for determining a large-scale disaster to be a disaster subject to instructions shall be the situation surrounding the disaster, the establishment of a disaster response headquarters or emergency disaster response headquarters, and the need for support.

(2) Organization of and Dispatch Plans for National Fire-Service Teams

Issues like the organization of and dispatch plans for National Fire-Service Teams are established within the Basic Plan set by the Minister of Internal Affairs and Communications. An overview of these issues is provided below. (Fig. 2-8-1)

A. Organization of National Fire-Service Teams

(A) Command Support Battalion

The Command Support Battalion is tasked with the duty of urgently heading to afflicted regions via helicopter or the like when large-scale disasters or special disasters occur to gather information related to the disaster and convey this to the Commissioner of the FDMA, the governors of the relevant prefectures, and others. In addition, it has also been tasked with the duty of carrying out support activities to ensure that commands pertaining to National Fire-Service Teams by the mayor of the afflicted municipality or fire chief delegated by the said mayor are carried out smoothly within the afflicted region. The Command Support Battalion is comprised of Integrated Command Support unit, Command Support unit, and Air Command Support unit.

(B) Prefectural Battalions

The Prefectural Battalion is a group of basic companies which are comprised of the teams required to aid with firefighting undertaken in afflicted regions from among a number of different companies. These include the Prefectural Battalion Command Unit, Firefighting company, Rescue company, Ambulance company, Logistic company, Communication company, Air company, Water company, Special Disaster company, and Special Equipment company established within the prefecture in question or municipalities within said prefecture.

Fig 2-8-1 Organization of teams comprising National Fire-Service Teams

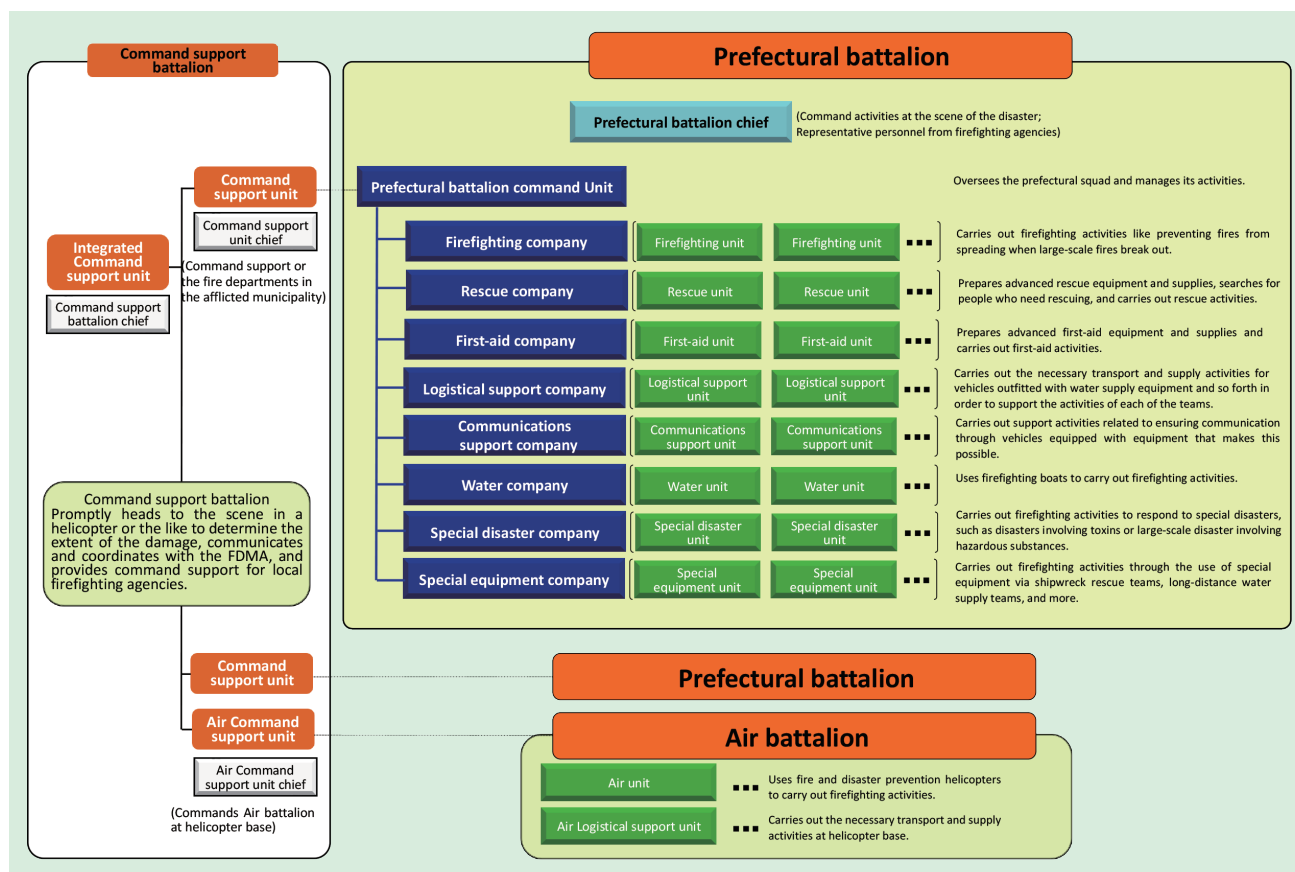


Table 2-8-1 Tasks and organizations of special battalions

Name	Objective	Mission	Comprising unit
Integrated Mobile Unit	Established at the time of the 3rd Basic Plan to create a more rapid unit deployment system.	After a request or instruction by the Director-General to mobilize, to mobilize promptly, to conduct firefighting activities urgently in the disaster area, and to collect and provide information that contributes to the smooth activities of the prefectural battalion in the case that the prefectural battalion follows.	Integrated Mobile Command Unit, Firefighting Units, Rescue Units, First-aid Units, Logistical Support Unit, and Communication Support Unit take the lead, respond with flexible organization and operation according to the type of disaster being responded to and the objective of the rapid dispatch and information collection.
National Fire-Service Team for Energy/Industrial Disaster	Established at the time of the 3rd Basic Plan to strengthen emergency response capabilities for petroleum complex disasters, etc., based on lessons learned from the Great East Japan Earthquake.	To conduct advanced and specialized firefighting activities quickly and accurately in response to special disasters in areas where energy and industrial infrastructure such as petroleum complexes and chemical plants are located.	Command Unit of National Fire-Service Team for Energy/Industrial Disaster, Special Disaster Company (equipped with large elevated water truck, hose extension vehicle with a large water cannon, chemical fire truck, large elevated water truck, and foam solution transport vehicle), Firefighting Company (equipped with chemical fire truck) In addition to the above Special Equipment Unit, Logistical Support Unit, Communications Support Unit, and Water Unit are added depending on local conditions.
NBC Disaster Battalion	Established at the time of the 4th Basic Plan to establish a system to promptly dispatch the NBC Disaster Battalion in the event of an NBC terrorist disaster, in light of the occurrence of terrorist attacks in other countries and the scheduled Olympic and Paralympic Games.	To conduct advanced and specialized firefighting activities against NBC disasters in a prompt and accurate manner.	NBC Disaster Command Unit, Toxic and Hazardous Unit In addition to the above, Logistical Support Units etc. are added depending on local conditions.
Mobile Support Battalion for Landslide, Storm and flood	Established at the time of the 4th Basic Plan as a mobile unit to be deployed to disaster areas in order to strengthen the rescue system in the event of wind and flood damage, which has become more frequent and severe in recent years.	In response to landslides or wind and flood disasters, conduct firefighting activities using heavy equipment, etc., in cooperation with other prefectural battalions, etc., in a prompt and accurate manner.	Mobile Support Command Unit for Landslide, Storm and flood, Rescue unit (equipped with response vehicle for handling tsunamis and large-scale storm and flood damage and rescue work vehicle), Special Equipment Unit (equipped with heavy machinery and heavy machinery transport vehicle, amphibian motor vehicle and amphibian motor vehicle transport vehicle), Logistical Support Unit In addition to the above, necessary units are added depending on local conditions.

(C) Air Battalion

The Air battalion is tasked to conduct aviation-related firefighting activities in the disaster area. It is composed of air units and, if necessary, air logistics support units.

(D) Special Battalions

Besides the prefectural battalions, there are special task forces: Integrated Mobile Unit, National Fire-Service Team for Energy/Industrial Disaster, NBC Disaster Battalion, Mobile Support Battalion for Landslide, Storm and flood. (Table 2-8-1)

B. Dispatch Plans**(A) Basic Dispatch Plans**

When large-scale disasters occur, the Commissioner of the FDMA makes efforts to gather information and closely coordinate with the prefectural governor of the afflicted prefecture and other officials. They also decide on whether or not it is necessary to dispatch National Fire-Service Teams, and take the measures to request or order their dispatch based on Article 44 of the Fire Defense Organization Act. Dispatch plans are to be established ahead of time to enable their prompt and precise dispatch in such cases.

Specifically, for each prefecture in which a disaster occurs, they designate prefectural battalions that dispatched to provide support with a primary focus on neighboring prefectures as “first response prefectural battalions” and prefectural battalions that provide additional support according to the scale of the disaster as “reserve response prefectural battalions.”

(B) Rapid Dispatch Standards for when Large-scale Earthquakes Occur

When large-scale earthquakes occur, communications

infrastructure is disrupted and a considerable length of time is needed in order to determine the overall extent of the damage, and it is possible that requests for dispatch may not be implemented quickly.

For this reason, the Commissioner of the FDMA has had prefectural governors and municipal mayors from around the country prepare Requests for the Dispatch of National Fire-Service Teams pursuant to the Fire Defense Organization Act in advance since July 2008, so that they can dispatch upon the occurrence of a large-scale earthquake.

(C) Rapid Dispatch

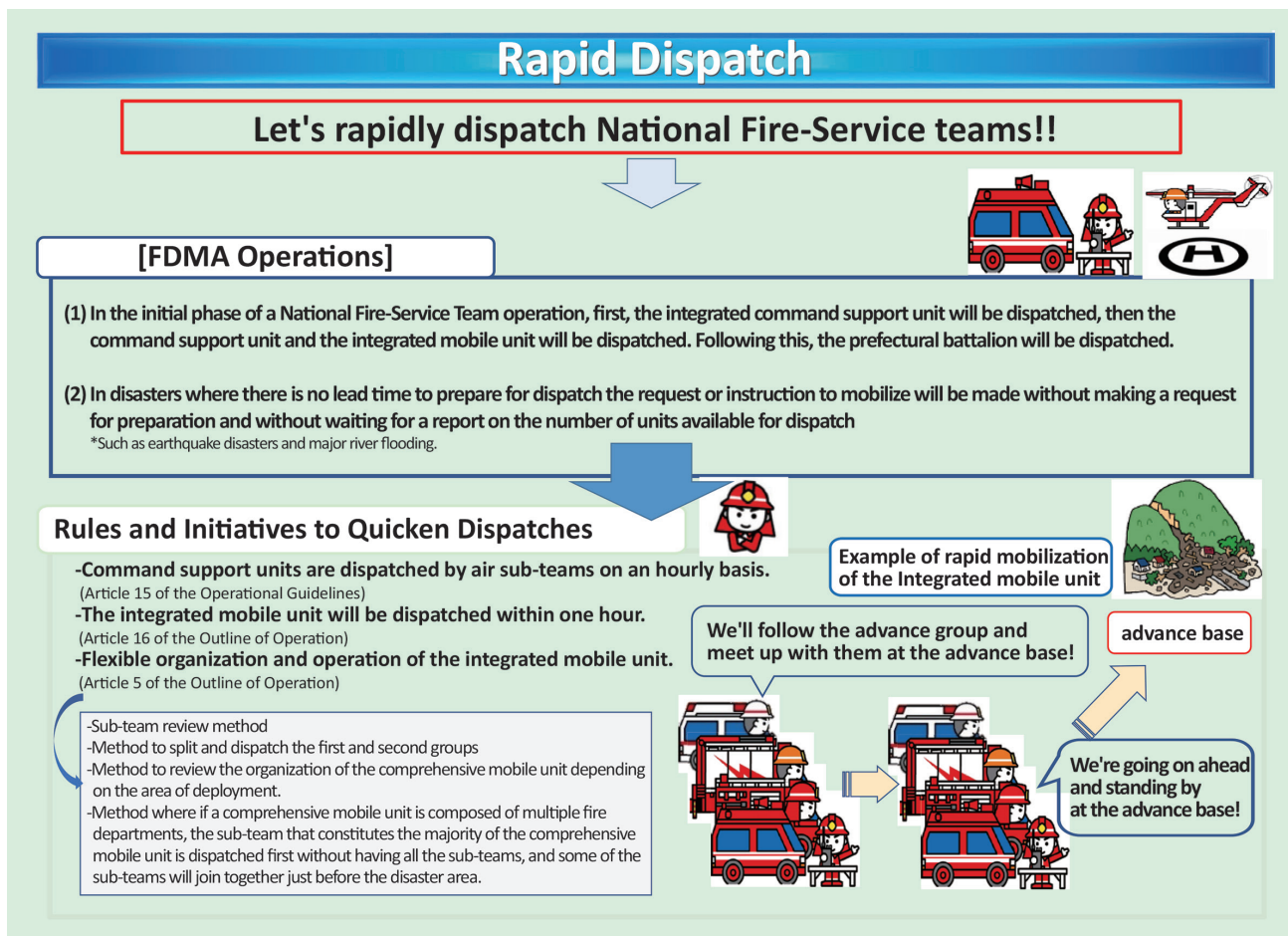
In order to rapidly dispatch National Fire-Service teams in the event of a disaster, the FDMA may request prefectures and fire departments to prepare for dispatch and receive reports on the number of teams available for dispatch when there is a threat of wind or flood damage, etc. In the event of sudden incidents such as sudden river flooding or landslide, the Commissioner of the FDMA will immediately request or instruct dispatch without going through a request for preparation for dispatch.

When a National Fire-Service team is dispatched, the command support battalion and the integrated mobile unit are to be dispatched immediately ahead to collect information and facilitate the activities of subsequent units. (Fig. 2-8-2)

(D) Dispatch Plans for the Nankai Trough Earthquake and Other Potential Earthquakes

It is envisioned that the Nankai Trough Earthquake, Tokyo in Land Earthquake would produce considerable damage that would extend over multiple prefectures. The thinking is that the firefighting capabilities of just the first response prefectural battalions and reserve response

Fig 2-8-2 Rapid dispatch



prefectural battalions alone would be insufficient for this. Therefore, in order to dispatch National Fire-Service Teams at a national scale, each prefecture will formulate its own action plan for National Fire-Service Teams at the time of a disaster, and all National Fire-Service Teams will be deployed simultaneously and rapidly.

In addition, the plans for the Nankai Trough Earthquake stipulates measures to be taken in the event of a subsequent earthquake to allow for flexible operation based on damage conditions and other factors. (Fig. 2-8-3)

(E) Operational Plan for NBC Disaster

When a large number of people are injured due to an NBC disaster, the firefighting capability of the firefighting organization with jurisdiction over the disaster area and the firefighting organization in the prefecture to which the disaster area belongs alone is considered to be insufficient, and it is necessary to implement advanced and specialized firefighting activities quickly and accurately. For this reason, a special operation plan has been established and NBC disaster response units will be dispatched promptly.

(F) Assistance Plans by the Prefectures, etc.

Each prefecture formulates its own Implementation Plans for Assistance from National Fire-Service Teams based on the registration status of National Fire-Service Teams within the prefecture in question. These plans are based on consultations with the firefighting agencies of each prefecture in question with regard to the organization

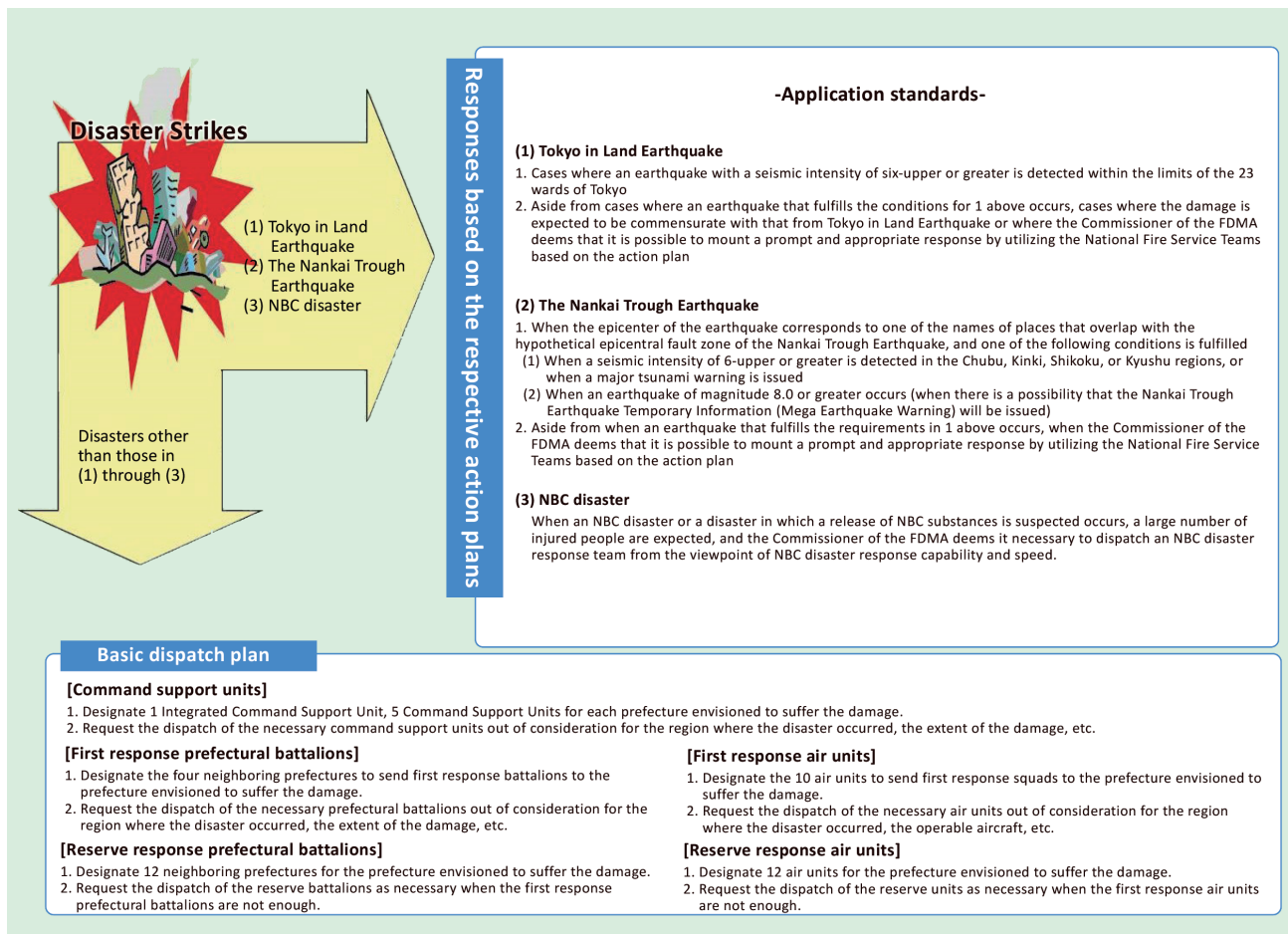
of prefectural battalions and other teams, meeting locations, information communication structures, and other necessary items concerning the prompt dispatch of National Fire-Service Teams to afflicted regions.

C. Plans for Receiving Assistance

Each prefecture formulates Plans for Receiving Assistance from National Fire-Service Teams by hypothesizing situations in which said prefecture itself falls victim to a disaster. This is done through consultations with the firefighting agencies within the prefecture over necessary matters regarding the acceptance of National Fire-Service Teams, which includes the management method of the Coordination Headquarters for Firefighting Support Activities and the Air Operations Coordination Team, requests for support, command system, advance bases, camping sites, and fuel supply bases.

In the same way, each fire department is required to formulate its own plan for receiving the prefectural firefighting support and emergency fire rescue teams in its own area, while ensuring consistency with the prefectural support and disaster prevention plans and adding necessary items such as the command structure for the prefectural battalion of the prefectural firefighting support and emergency fire rescue teams, the communication system with fire departments and relevant organizations, and the implementation of training for receiving support.

Fig 2-8-3 Basic dispatch and action plans for National Fire-Service Teams



(3) Number of National Fire-Service Teams Registered and Their Equipment

A. Number of Teams Registered

The stipulations of the Fire Defense Organization Act states that the Commissioner of the FDMA must register National Fire-Service Teams based on applications to do so from the prefectural governors or municipal mayors.

In March 2019, the basic plan was revised and a target for the number of teams registered was set for the end of FY2023 that would substantially increase the number of teams from its current level of roughly about 6,000 to roughly 6,600 teams. This is to be done because it is crucial to set in place a structure for deploying teams quickly and at a large scale in preparation for large-scale disasters such as the Nankai Trough Earthquake or Tokyo in Land Earthquake, for which damage that is worse than that from the Great East Japan Earthquake is envisioned.

Since the launch of the 1,267 National Fire-Service Teams in September 1995, there has been a growing recognition of the importance of their activities during disasters. As a result, the number of teams registered has been on the rise, and as of April 1, 2022, 6,606 teams have been registered from 720 fire departments nationwide (roughly 99% of the fire departments nationwide). This is almost 5 times more than its launch. (Attachment 2-8-2, 3 untranslated)

B. Equipment

Since they were first launched, the FDMA has

formulated standards for the equipment for National Fire-Service Teams. Moreover, since their enshrinement into law in 2003, it has included provisions for this in its basic plan as it has worked to round-out their line-up of equipment.

Starting from 2006, government subsidy measures have been taken through a subsidy for outfitting National Fire-Service Teams with facilities and equipment. Through this, progress has been made in equipping them with special disaster-response fire pump vehicles, rescue work vehicles, special disaster-response ambulances, as well as the support vehicles active teams need to act in a self-contained manner in afflicted regions, and also fiberoptic and other sophisticated rescue equipment and supplies.

Moreover, the emergency and disaster prevention and reduction business debentures (100% allocations, 70% tax grant rate) that were established in FY2011 were expanded in FY2013 to newly encompass “Equipment for vehicles for the functional enhancement of National Fire-Service Teams” and “Facilities to serve as bases for rescue and other activities for National Fire-Service Teams.”

Furthermore, the stipulations of the Fire Defense Organization Act provide for a system for using equipment free of charge. Under this system, some of the equipment needed by National Fire-Service Teams for their team activities and logistical activities is allocated to fire departments and other sites throughout Japan. Such equipment includes systems for water sources for

firefighting capable of handling disasters at energy and industrial infrastructure, response vehicles for handling tsunamis and large-scale storm and flood damage. In recent year, in order to establish a logistical support system in each prefecture and to strengthen the system for prompt information collection and sharing among related organizations, operation base vehicles and high-

performance inflatable tents, high-spec information gathering drones, and video transmission equipment have also been deployed. (**Attachment 2-8-4**, untranslated)

The FDMA will continue working to round-out and enhance the equipment of National Fire-Service Teams in a systematic manner to ensure that they can effectively carry out their activities.

–omitted–

Attachment 1-1-2 Extent of fire damage by prefecture

(During 2021)

Classification	No. of fires							No. of buildings burned				
	Total	Buildings	Forests	Vehicles	Ships	Aircraft	Other	Total	Totally destroyed	Half destroyed	Partially destroyed	Minor fire
Hokkaido	1,728	973	36	265	4	0	450	1,276	332	74	349	521
Aomori	494	275	17	44	2	0	156	481	161	30	125	165
Iwate	363	225	26	41	1	0	70	408	181	33	108	86
Miyagi	614	346	20	69	2	0	177	584	184	34	135	231
Akita	320	186	24	32	0	0	78	369	147	20	118	84
Yamagata	310	157	17	38	0	0	98	289	101	23	84	81
Fukushima	599	316	46	64	0	0	173	545	197	30	137	181
Ibaraki	1,149	524	44	122	0	0	459	880	300	50	234	296
Tochigi	701	330	41	89	0	0	241	617	237	30	187	163
Gunma	616	300	18	72	0	0	226	468	152	27	132	157
Saitama	1,733	969	15	173	0	0	576	1,515	307	67	407	734
Chiba	1,729	902	80	148	2	0	597	1,340	315	64	338	623
Tokyo	3,969	2,830	6	217	1	0	915	3,247	115	94	481	2,557
Kanagawa	1,851	1,139	3	161	3	0	545	1,498	171	57	343	927
Niigata	531	348	14	62	0	0	107	599	168	25	195	211
Toyama	168	106	6	32	0	0	24	167	51	15	58	43
Ishikawa	218	147	7	15	0	0	49	237	48	11	67	111
Fukui	152	86	6	24	1	0	35	130	31	6	40	53
Yamanashi	330	128	16	45	0	0	141	205	62	14	48	81
Nagano	774	376	38	60	0	0	300	573	212	35	149	177
Gifu	611	335	18	67	0	0	191	498	123	41	137	197
Shizuoka	1,001	504	24	136	4	0	333	769	187	36	193	353
Aichi	1,779	953	28	184	7	0	607	1,265	191	59	354	661
Mie	621	276	21	72	2	0	250	404	100	28	122	154
Shiga	375	195	11	48	0	0	121	258	43	10	55	150
Kyoto	445	286	12	48	0	0	99	424	78	28	95	223
Osaka	1,774	1,236	7	178	2	0	351	1,586	141	71	406	968
Hyogo	1,390	763	53	134	3	0	437	1,093	221	58	272	542
Nara	369	187	12	33	0	0	137	264	51	10	80	123
Wakayama	304	137	10	25	1	0	131	211	62	11	51	87
Tottori	187	97	7	22	0	0	61	168	64	9	46	49
Shimane	237	121	21	19	0	0	76	226	91	11	55	69
Okayama	673	308	62	72	1	0	230	528	168	47	142	171
Hiroshima	737	404	43	76	1	0	213	656	159	35	195	267
Yamaguchi	479	215	29	35	2	0	198	322	99	19	86	118
Tokushima	279	145	15	21	3	0	95	187	49	13	56	69
Kagawa	331	158	27	29	3	0	114	237	82	21	65	69
Ehime	388	228	21	41	4	0	94	376	106	20	123	127
Kochi	273	137	13	22	1	0	100	250	96	23	62	69
Fukuoka	1,231	687	29	141	2	0	372	1,014	191	51	301	471
Saga	259	121	15	32	0	0	91	182	53	10	57	62
Nagasaki	428	198	29	36	6	0	159	283	99	12	63	109
Kumamoto	676	316	67	64	1	0	228	524	158	21	136	209
Oita	485	189	56	41	3	0	196	315	101	20	81	113
Miyazaki	452	218	38	39	0	0	157	343	130	19	98	96
Kagoshima	640	295	29	66	0	0	250	432	139	19	116	158
Okinawa	449	177	50	58	1	0	163	205	27	16	49	113
Prefectural total	35,222	19,549	1,227	3,512	63	0	10,871	28,448	6,481	1,457	7,231	13,279
Sapporo city	383	274	1	43	0	0	65	354	47	18	98	191
Sendai City	228	137	0	23	0	0	68	168	27	8	21	112
Saitama City	300	171	0	21	0	0	108	230	27	8	53	142
Chiba City	225	143	8	21	0	0	53	177	26	2	55	94
Special wards	2,816	2,095	0	133	1	0	587	2,357	54	54	326	1,923
Yokohama City	698	463	0	56	2	0	177	594	49	24	139	382
Kawasaki City	363	226	0	24	0	0	113	273	10	2	75	186
Sagamihara City	131	71	0	13	0	0	47	113	25	6	19	63
Niigata City	129	97	0	14	0	0	18	169	35	5	62	67
Shizuoka City	157	85	3	28	1	0	40	161	36	12	32	81
Hamamatsu City	171	95	3	20	0	0	53	126	22	5	56	43
Nagoya City	468	289	1	46	0	0	132	347	27	17	103	200
Kyoto City	196	147	1	18	0	0	30	200	17	15	50	118
Osaka City	596	470	0	40	2	0	84	589	38	22	164	365
Sakai City	164	107	0	23	0	0	34	127	6	6	29	86
Kobe City	347	192	8	38	1	0	108	241	36	6	53	146
Okayama City	180	93	12	25	0	0	50	153	27	20	48	58
Hiroshima City	223	134	5	27	1	0	56	228	36	16	59	117
Kitakyushu City	221	120	2	30	2	0	67	194	35	10	56	93
Fukuoka City	280	204	4	20	0	0	52	248	11	7	75	155
Kumamoto City	159	108	5	12	1	0	33	169	39	5	48	77
21 city total	8,435	5,721	53	675	11	0	1,975	7,218	630	268	1,621	4,699

(Note) The "21 city total" is found within the prefectural total.

Attachment 1-1-2 Extent of fire damage by prefecture (continued)

(During 2021)

Classification	Area burned			No. of casualties		No. of households affected				No. of people affected
	Building floor area (㎡)	Building surface area(㎡)	Forests (a)	Fatalities	Injured	Total	Totally destroyed	Half destroyed	Minor destruction	
Prefecture										
Hokkaido	59,103	7,353	5,172	72	233	746	143	59	544	1,463
Aomori	26,275	3,635	146	32	102	264	89	14	161	541
Iwate	29,193	2,032	337	26	60	193	75	18	100	448
Miyagi	28,706	1,824	672	30	111	343	95	19	229	829
Akita	22,695	2,034	483	24	49	198	70	8	120	493
Yamagata	16,032	1,647	1,188	21	42	130	40	8	82	352
Fukushima	25,869	1,889	1,484	40	109	320	98	23	199	719
Ibaraki	42,405	4,452	1,339	34	129	444	144	24	276	1,017
Tochigi	31,396	1,838	17,344	24	89	282	90	13	179	616
Gunma	20,968	1,259	6,393	23	80	239	62	18	159	528
Saitama	32,176	5,212	86	73	240	1,087	229	49	809	2,406
Chiba	35,366	5,366	826	74	259	849	192	45	612	1,827
Tokyo	16,753	7,475	480	86	670	2,404	227	152	2,025	4,561
Kanagawa	25,121	4,825	3	58	304	1,139	159	59	921	2,397
Niigata	28,827	2,821	438	25	109	317	80	15	222	819
Toyama	12,310	1,256	204	10	31	91	30	7	54	255
Ishikawa	7,679	515	24	10	33	134	26	8	100	296
Fukui	5,779	1,223	89	5	31	68	15	6	47	169
Yamanashi	6,733	1,730	472	11	36	99	30	3	66	226
Nagano	26,537	2,021	3,609	35	121	280	82	18	180	635
Gifu	19,469	2,088	368	37	89	294	87	23	184	659
Shizuoka	24,552	5,940	527	36	120	427	115	18	294	992
Aichi	37,507	4,058	317	58	295	908	163	47	698	1,911
Mie	18,124	1,388	180	30	88	221	58	22	141	441
Shiga	5,693	783	115	10	47	155	20	9	126	395
Kyoto	9,401	1,585	47	21	106	304	49	27	228	617
Osaka	74,999	13,595	55	85	358	1,326	198	78	1,050	2,559
Hyogo	35,737	3,030	1,313	56	232	689	146	33	510	1,487
Nara	6,622	1,316	265	9	64	144	25	4	115	342
Wakayama	6,511	237	65	18	35	126	37	6	83	310
Tottori	8,193	2,991	172	10	33	72	26	3	43	193
Shimane	12,003	563	154	18	38	113	44	6	63	284
Okayama	19,494	2,108	1,106	29	115	277	74	14	189	618
Hiroshima	22,199	3,411	856	33	110	428	109	12	307	860
Yamaguchi	14,007	791	189	16	68	202	62	9	131	386
Tokushima	6,553	861	318	11	31	108	33	4	71	227
Kagawa	13,095	455	190	18	49	126	53	7	66	266
Ehime	16,282	1,250	197	29	85	219	52	15	152	463
Kochi	8,804	528	223	13	26	110	38	10	62	207
Fukuoka	26,249	3,890	1,132	46	193	663	151	46	466	1,555
Saga	9,183	602	44	9	46	100	30	5	65	242
Nagasaki	14,573	596	213	12	47	175	60	15	100	380
Kumamoto	22,822	2,042	20,263	32	85	278	75	9	194	650
Oita	16,654	1,041	469	12	51	182	57	9	116	372
Miyazaki	20,110	2,784	362	15	63	185	71	6	108	385
Kagoshima	19,244	1,148	541	29	85	261	92	9	160	538
Okinawa	4,350	992	8,477	12	36	124	31	4	89	260
Prefectural total	992,353	120,480	78,947	1,417	5,433	17,844	3,932	1,016	12,896	38,196
Sapporo city	5,321	2,026	1	20	65	259	22	14	223	498
Sendai City	3,382	141	0	2	39	121	21	6	94	261
Saitama City	2,992	831	0	11	45	196	35	4	157	466
Chiba City	2,613	406	29	6	36	118	11	2	105	233
Special wards	8,565	4,591	0	50	468	1,682	149	95	1,438	3,124
Yokohama City	8,795	2,460	0	21	110	460	48	29	383	934
Kawasaki City	1,995	534	0	11	53	221	19	7	195	485
Sagamihara City	1,791	286	0	4	19	94	15	4	75	191
Niigata City	5,255	490	0	5	28	107	27	1	79	254
Shizuoka City	4,185	367	105	9	28	119	28	12	79	271
Hamamatsu City	2,985	4,243	23	4	27	72	20	1	51	169
Nagoya City	5,628	1,564	30	11	108	271	38	22	211	504
Kyoto City	2,716	573	10	6	59	163	18	15	130	301
Osaka City	42,792	8,071	0	42	141	482	50	32	400	837
Sakai City	1,764	428	0	7	21	117	11	4	102	244
Kobe City	3,491	422	55	10	55	184	26	6	152	340
Okayama City	3,906	590	223	10	36	112	22	6	84	207
Hiroshima City	5,849	2,065	38	12	37	175	33	4	138	332
Kitakyushu City	5,280	888	20	11	29	137	33	6	98	319
Fukuoka City	2,103	1,302	8	11	52	176	26	10	140	348
Kumamoto City	6,191	923	29	15	28	117	27	4	86	255
21 city total	127,599	33,201	571	278	1,484	5,383	679	284	4,420	10,573

(Note) The "21 city total" is found within the prefectural total.

Attachment 1-1-2 Extent of fire damage by prefecture (continued)

(During 2021) (Unit: 1,000 yen)

Classification	Amount of damages									
	Total	Building			Forests	Vehicles	Ships	Aircraft	Other	Explosions
Prefecture		Subtotal	Buildings	Contents						
Hokkaido	3,378,778	3,046,061	2,288,429	757,632	5,780	187,109	57,480	0	59,355	22,993
Aomori	1,314,439	1,235,906	1,017,923	217,983	2,977	36,280	12,200	0	21,735	5,341
Iwate	1,362,147	1,288,906	1,032,978	255,928	3,677	48,997	800	0	19,116	651
Miyagi	1,985,633	1,772,553	1,353,385	419,168	2,102	42,436	25,282	0	143,260	0
Akita	1,020,718	896,765	712,148	184,617	1,740	22,978	0	0	81,710	17,525
Yamagata	518,676	480,387	370,870	109,517	771	18,450	0	0	19,068	0
Fukushima	1,314,847	1,222,761	772,840	449,921	1,633	60,966	0	0	29,312	175
Ibaraki	8,845,742	8,563,085	6,243,854	2,319,231	3,245	164,436	0	0	109,441	5,535
Tochigi	1,739,502	1,566,532	1,193,676	372,856	43,314	76,742	0	0	52,771	143
Gunma	1,548,054	1,427,849	827,772	600,077	6,418	36,939	300	0	76,499	49
Saitama	3,496,577	3,174,188	2,143,802	1,030,386	52	157,263	0	0	152,628	12,446
Chiba	2,930,001	2,701,470	2,028,001	673,469	1,123	124,254	172	0	102,857	125
Tokyo	4,250,190	3,990,085	2,528,036	1,462,049	32,323	126,341	1,456	0	34,110	65,875
Kanagawa	7,404,174	7,222,052	2,001,302	5,220,750	0	117,443	2,498	0	36,932	25,249
Niigata	1,836,515	1,782,149	1,310,993	471,156	648	40,970	0	0	12,654	94
Toyama	699,139	677,433	531,511	145,922	1,787	17,371	0	0	2,548	0
Ishikawa	383,189	372,179	262,970	109,209	687	6,509	0	0	2,680	1,134
Fukui	494,337	430,269	287,867	142,402	7	7,356	850	0	55,816	39
Yamanashi	350,536	292,485	214,666	77,819	60	26,128	0	0	31,863	0
Nagano	1,453,327	1,257,440	995,851	261,589	5,705	72,168	0	0	13,014	105,000
Gifu	1,331,898	1,270,435	860,253	410,182	606	39,214	0	0	21,555	88
Shizuoka	2,361,784	2,168,837	1,284,174	884,663	1,657	94,730	7,158	0	88,557	845
Aichi	4,486,347	3,820,824	2,352,336	1,468,488	322	143,594	338,752	0	182,524	331
Mie	1,374,845	1,274,672	785,164	489,508	1,073	45,072	1,300	0	52,727	1
Shiga	527,915	469,308	354,737	114,571	505	30,034	0	0	28,068	0
Kyoto	683,170	651,073	563,214	87,859	39	24,426	0	0	4,256	3,376
Osaka	28,601,748	28,174,167	6,438,146	21,736,021	15	98,749	67	0	323,077	5,673
Hyogo	2,900,598	2,609,812	2,078,441	531,371	196	93,003	24,571	0	171,575	1,441
Nara	580,937	546,613	364,632	181,981	9,298	12,755	0	0	8,680	3,591
Wakayama	542,212	459,982	338,672	121,310	3,717	36,962	11,634	0	7,955	21,962
Tottori	324,547	302,624	246,793	55,831	3,679	9,107	0	0	9,136	1
Shimane	638,999	586,980	480,110	106,870	4,184	14,892	0	0	32,943	0
Okayama	1,142,459	999,726	811,704	188,022	995	110,160	250	0	30,651	677
Hiroshima	1,805,503	1,703,575	1,007,535	696,040	392	76,175	100	0	25,261	0
Yamaguchi	770,828	666,947	572,161	94,786	280	24,415	3,282	0	64,879	11,025
Tokushima	311,584	279,697	225,070	54,627	1,916	16,046	374	0	13,487	64
Kagawa	746,161	721,000	552,792	168,208	66	9,130	2,290	0	13,645	30
Ehime	844,779	754,693	612,290	142,403	643	36,083	34,974	0	18,359	27
Kochi	489,205	423,317	294,843	128,474	5,054	8,625	1,033	0	50,684	492
Fukuoka	2,003,378	1,805,607	1,216,727	588,880	3	74,440	2,700	0	120,536	92
Saga	546,128	523,367	359,856	163,511	112	19,288	0	0	3,361	0
Nagasaki	971,124	816,964	530,935	286,029	308	17,250	128,621	0	7,951	30
Kumamoto	966,404	824,696	589,318	235,378	22,330	64,793	30	0	54,490	65
Oita	723,011	635,051	414,958	220,093	1,274	47,662	23,361	0	12,700	2,963
Miyazaki	809,323	765,956	616,704	149,252	2,817	24,182	0	0	16,368	0
Kagoshima	888,668	835,553	611,782	223,771	885	34,641	0	0	14,550	3,039
Okinawa	512,552	494,666	299,509	195,157	0	10,698	5,620	0	1,527	41
Prefectural total	104,212,628	97,986,697	52,981,730	45,004,967	176,415	2,607,262	687,155	0	2,436,871	318,228
Sapporo city	339,734	317,578	258,544	59,034	0	6,500	12	0	15,405	239
Sendai City	252,706	237,644	176,718	60,926	0	12,429	0	0	2,633	0
Saitama City	332,371	312,457	260,267	52,190	0	9,438	0	0	10,476	0
Chiba City	376,634	366,182	153,451	213,731	85	5,806	0	0	4,461	100
Special wards	2,528,958	2,346,462	1,493,105	853,357	0	97,007	1,456	0	18,321	65,712
Yokohama City	5,574,666	5,537,526	764,982	4,772,544	0	23,038	8	0	14,082	12
Kawasaki City	143,463	131,094	76,610	54,484	0	11,348	0	0	1,021	0
Sagamihara City	228,366	217,783	156,184	61,599	0	3,392	0	0	7,191	0
Niigata City	268,807	250,868	194,636	56,232	0	10,762	0	0	7,177	0
Shizuoka City	349,379	326,376	249,332	77,044	36	13,901	550	0	8,516	0
Hamamatsu City	506,324	495,864	161,331	334,533	0	5,108	0	0	4,613	739
Nagoya City	616,675	597,447	513,697	83,750	0	11,171	0	0	8,035	22
Kyoto City	167,778	152,304	130,599	21,705	0	15,138	0	0	334	2
Osaka City	24,723,240	24,603,515	4,666,530	19,936,985	0	32,378	7	0	86,858	482
Sakai City	199,795	181,556	141,739	39,817	0	16,179	0	0	2,060	0
Kobe City	362,409	309,310	236,259	73,051	0	37,661	1,322	0	12,701	1,415
Okayama City	295,632	271,069	208,671	62,398	1	16,391	0	0	8,087	84
Hiroshima City	773,407	749,776	337,308	412,468	290	2,094	100	0	21,147	0
Kitakyushu City	405,012	336,514	218,420	118,094	0	31,615	2,700	0	34,150	33
Fukuoka City	164,672	161,735	88,828	72,907	0	2,682	0	0	245	10
Kumamoto City	223,935	217,680	173,985	43,695	3	3,807	30	0	2,415	0
21 city total	38,833,963	38,120,740	10,661,196	27,459,544	415	367,845	6,185	0	269,928	68,850

(Note) The "21 city total" is found within the prefectural total.

-omitted-