Mission 6

Develop human resources and employ new technologies
人材育成と新たな技術に挑戦する

Educational training for firefighters and Volunteer Fire Corps
消防職員・団員の教育訓練

In order for firefighters and Volunteer Fire Corps to appropriately respond to increasingly complex and diversified disasters, as well as more advanced emergency and fire prevention work, they need to enhance their knowledge and skills which form the basis of their emergency activities. Training and education for firefighters and Volunteer Fire Corps is being run collaboratively by the national, prefectural and municipal governments.
FDMA provides advanced educational training required for the top management of firefighters and Volunteer Fire Corps across the country at the Fire and Disaster Management College. In addition, fire academies, Fire Service Institutions, fire stations, and Volunteer Fire Corps in each prefecture conduct educational training, and the emergency lifesaving training institutes are also providing expert educational training.

複雑多様化する災害や救急業務、火災予防業務の高度化に消防職団員が適切に対応するためには、活動の基礎となる知識・技能の向上が不可欠です。消防職団員に対する教育訓練については、国・都道府県・市町村が機能を分担し、相互に連携しながら実施しています。

消防庁では、消防大学校において全国の消防職団員に対し、幹部に必要とされる高度な教育訓練を行っています。このほか、都道府県などの消防学校、各消防本部、消防署や消防団においても教育訓練が実施されており、救急救命研修所などにおいて専門的な教育訓練も行われています。

Fire and Disaster Management College (National)

Department	General Education…	Executive dept., Top level executive dept., Newly appointed fire chief and fire academy principal dept., Volunteer Fire Corps chief dept.
	Specialty Education…	Fire defense dept., Rescue dept., Emergency medical service dept., Fire prevention dept., Hazardous materials dept., Fire investigation dept., Newly appointed local instructor dept., Local instructor dept.
Training class	Emergency Fire Response Team education dept. …	Commander course, Advanced rescue and special advanced rescue course, NBC course, Air squadron leader course
	Risk management and disaster preparedness education dept. …	Risk management and civil protection course, Self-protection organization education course, Volunteer Fire Corps activation promotion course, Self-protection organization education course (short-term), Gender empowerment course, Fire inspection management course

Fire academies (prefectural and municipal, etc.)

Educational training for professional firefighters	Recruit training, Specialty education (Fire defense dept., Extraordinary disaster dept., Fire prevention inspection dept.,Hazardous materials dept., Fire investigation dept., Ambulance service dept., Rescue dept.), Top management education, Special education
Educational training for Volunteer Fire Corps	Basic education, Specialty education (Fire defense dept., Fire engine dept.), Top management education, Special education

“e-COLLEGE” - anyone can learn about disaster prevention and risk management via the Internet no matter when
いつでも、誰でも、ネットで学べる防災・危機管理 e-カレッジ

At the “Disaster Prevention and Risk Management e-College,” anyone can easily learn about disaster prevention information and risk management in the event of a disaster on the Internet.
In order to reduce the damage caused by large-scale disasters, it is important to enhance and strengthen local disaster prevention capabilities and improve the risk management and judgment skills of each local resident. You can learn how to prepare for disasters and what actions you should take in the event of a disaster. Please make use of “e-COLLEGE.”

「防災・危機管理 e-カレッジ」では、インターネットを利用して、誰でも簡単に防災の知識や災害時の危機管理について学習することが可能です。
大規模災害による被害の軽減を図るためには、地域防災力の充実強化を図り、地域住民一人一人の危機管理・判断力を向上させることが重要です。災害への備えや災害時にとるべき行動を学習することができますので、是非ご活用下さい。

URL（https://www.fdma.go.jp/relocation/e-college/）

Technological research and development in fire and disaster prevention
消防防災における科学技術の研究・開発

By further promoting research and development with a view to practical application for the safety and security of society, FDMA sets their basic policy as the contribution to highly developing societal systems in the field of fire and disaster prevention, and aims for further cooperation with related parties.

消防庁では、安心・安全な社会の実現に向けて、実用化を目的とした研究開発を一層推進することにより、その成果が消防防災分野における社会システムの高度化に大きく貢献することを基本方針とし、関係者の一層の連携を図っています。

System to promote technology research in fire and disaster prevention
消防防災科学技術研究推進制度

A competitive research funding system was established in 2003 and is open to proposals from the public with the purpose of cultivating and utilizing innovative and practical techniques in the field of fire and disaster prevention. It advances technological development through collaboration with industry, academia, and government. The research results obtained through this system are used for social implementation of knowledge, equipment, and materials useful in the field of fire and disaster prevention, and are reflected in policies and measures.

消防防災分野における革新的かつ実用的な技術の育成・利活用を目的とした提案公募の形式による競争的研究資金制度を平成 15 年度に創設し、産学官連携による技術開発を進めています。本制度により得られた研究成果は、消防防災分野に有用な知見や資機材等の社会実装、施策への反映等その成果が活用されています。

Research and development of the National Research Institute of Fire and Disaster
消防研究センターの研究開発

The National Research Institute of Fire and Disaster is the unique national research body of our country, in relation to fire and disaster prevention. It supports the activities of firefighters and Volunteer Fire Corps on the frontline and meets the demands of the safety and security of society. They conduct investigation of causes of accidents such as large-scale fires and leakages of hazardous materials and advance research and development of effective technologies and measures that are based on the policies of FDMA and the results of the cause investigations. Furthermore, as well as supporting the firefighting activities at such extraordinary disaster sites as landslide disasters and hazardous materials storage facility fires, the research center is also engaged in applying research and investigation results to frontline firefighting operations, which includes advice to Fire Service Institutions of knowledge accumulated over many years.

我が国唯一の消防防災に関する国立研究機関である消防研究センターは、第一線で活躍する消防職団員の活動を科学技術の面から支え、社会の安全・安心に関する要請に応えています。大規模火災や危険物流出等の事故に係る原因調査を行い、消防庁の施策や原因調査結果を踏まえた効果的な対策や技術の研究開発を進めています。さらに、土砂災害や危険物施設での火災など特殊災害現場での支援活動をはじめ、永年にわたって蓄積されてきた知見を消防本部に助言するなど、研究成果や調査結果を最前線の消防活動に反映させる取組みも行っています。

https://nrifd.fdma.go.jp/public_info/library/kenkyu_kaihatsu/index.html

Here for R&D video ▶
研究開発の動画はこちら

Research and development of firefighting robot systems
消防ロボットシステムの研究開発

In particularly difficult, large-scale/extraordinary disasters where the dispatch of firefighters to the scene would be extremely dangerous, an automated robot is able to be put into operation from a safe location. Multiple robots can cooperate together, and also a firefighting robot system (Scrum Force) with abilities to endure high radiation heat are developed.

消防隊員が災害現場で活動することが極めて危険であり、困難な大規模・特殊な災害において、自律技術により安全な場所からロボットを稼働させることができ、複数のロボットが協調連携し、さらに、高い放射熱に耐えられる性能を備えた消防ロボットシステム（スクラムフォース）を開発しました。

Scrum Force
スクラムフォース

Research and development of response to infectious diseases in emergency transport
救急搬送における感染症対応に関する研究開発

The National Research Institute of Fire and Disaster conducts research and development on measures to prevent the spread of infection when transporting COVID-19 patients including asymptomatic people, as well as methods to shorten the emergency transportation time when the number of emergency calls increases, including during the period of infection spread.

無症状者を含む新型コロナウイルス感染者を救急搬送する際の感染拡大防止対策及び感染拡大期を含む救急出場要請件数増大期における救急搬送時間短縮手法の研究開発を行っています。


Experimental ambulance and airflow controller prototype.
実験用救急車と気流制御装置の試作機

Research and development for enhancement of firefighting performance and operations in times of disaster
災害時の消防力・消防活動能力向上に係る研究開発

In order to protect the lives of more people in the event of a large-scale natural disaster, The National Research Institute of Fire and Disaster conducts research that contributes to the rapid and safe rescue of people in need of rescue, such as development of on-site information collection system and information analysis and evaluation methods.

大規模自然災害時においてより多くの国民の生命を守ることを目的として「現場対応型情報収集システムと情報分析・評価手法の開発」等、要救助者の迅速かつ安全な救助等に資する研究を行っています。

Experiment to develop a night-time topographic measurement method using a drone at a landslide disaster site.
土砂災害現場でのドローンを用いた夜間の地形計測手法の開発のための実験の様子

Research and development of firefighting methods to deal with fires that are difficult to extinguish
消火活動困難な火災に対応するための消火手法の研究開発

When a fire occurs in a large-scale warehouse, etc., depending on the amount of combustible materials, the fire spreads rapidly and a large amount of dense smoke and heat is generated. In addition, if there are few openings in the exterior walls and the fire origin is far from exterior openings, it becomes extremely difficult for firefighters to enter inside to extinguish the fire directly.
For this reason, a method to safely extinguish fires from outside the building without the need for firefighters to enter inside are currently under development.

大規模倉庫等で火災が発生した場合、可燃物の量によっては急速な延焼拡大や大量の濃煙熱気が発生し、また、外壁に開口部が少なく、出火場所が外部の開口部から離れている場合、消防隊が内部進入し直接消火することが極めて困難になります。

このため、消防隊員が内部進入することなく安全に、建物外部から消火を可能とする手法の開発を行っています。

Combustion experiment using a warehouse model
倉庫模型を用いた燃焼実験