

Calendar No. 765

**107th Congress }
2d Session }**

SENATE

**{ REPORT
{ 107-344**

**FIREFIGHTING RESEARCH AND
COORDINATION ACT**

R E P O R T

OF THE

**COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION**

on

S. 2862

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NOVEMBER 18, 2002.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

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FIREFIGHTING RESEARCH AND COORDINATION ACT

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Mr. HOLLINGS, from the Committee on Commerce, Science, and
Transportation, submitted the following

REPORT

[To accompany S. 2862]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 2862) to provide for the establishment of a scientific basis for new firefighting technology standards, improve coordination among Federal, State, and local fire officials in training for and responding to terrorist attacks and other national emergencies, and for other purposes, having considered the same, reports favorably thereon with an amendment in the nature of a substitute and recommends that the bill (as amended) do pass.

PURPOSE OF THE BILL

The purpose of this legislation, as reported, is to establish and authorize funding for programs under the United States Fire Administration (USFA) to support the development of voluntary consensus standards for new firefighting technology, improve coordination between Federal, State, and local fire officials, and authorize the National Fire Academy to train firefighters in responding to acts of terrorism.

BACKGROUND AND NEEDS

As was demonstrated during the terrorist attacks of September 11, 2001, local firefighters are likely to be the first to respond to an incident of domestic terrorism. Nearly 75 percent of the 1.1 million firefighters in the United States are volunteers. These volunteer fire departments protect most of the rural areas and smaller communities in the United States, as well as many of the suburban areas surrounding large cities. Career firefighters, including municipal firefighters, cover mostly metropolitan cities and cities with

populations greater than 50,000. The career fire service is estimated to include about 3,000 fire departments and approximately 275,000 full-time paid firefighters. The largest career fire department has more than 14,000 full-time employees, although most have fewer than 50 employees. Some jurisdictions include fire departments that use both career and volunteer firefighters. The firefighting profession is one of the most hazardous professions in the country. In 2001, 446 firefighters died in the line of duty, including 347 on September 11.

THE U.S. FIRE ADMINISTRATION

The U.S. Fire Administration (USFA) is a directorate within the Federal Emergency Management Agency (FEMA). Its mission is to provide leadership, coordination, and support for the nation's fire prevention and control, fire training and education, and emergency medical services (EMS) activities. USFA's goal is the reduction of the nation's loss of life from fire, while also achieving a reduction in property loss and non-fatal injury due to fire.

The USFA contains the following programs:

Data Collection—USFA's National Fire Data Center administers a national system for collecting, analyzing, and disseminating data and information on fire and other emergency incidents to State and local governments and the fire fighting community.

Public Education and Awareness—Through partnerships and special initiatives, USFA involves the fire service, the media, other Federal agencies, and safety interest groups in the development of fire safety awareness and education programs.

Training—USFA's National Fire Academy offers educational opportunities to advance professional development of mid-level and senior fire/EMS officers and allied professionals involved in fire prevention and life safety activities. The Academy develops and delivers educational and training programs with a national focus that supplements and supports State and local fire service training.

Technology—Through research, testing, and evaluation, USFA works with public and private entities to promote and improve fire and life safety. Research and special studies are conducted on fire detection, suppression, and notification systems. These studies are made available to the public free of charge through the USFA Publications Center.

Assistance to Firefighters Grant Program—This program was established by Title XVII of the Floyd D. Spence Defense Authorization Act for Fiscal Year (FY) 2001 (the authorizing legislation is referred to as the Firefighter Investment and Response Enhancement (FIRE) Act). Congress appropriated \$360,000,000 in FY 2002 for this program to provide competitive grants to local fire departments. It is expected that 5500 fire departments will receive awards before the end of calendar year 2002. The grants are used for training, wellness and fitness programs, vehicles, firefighting equipment, personal protective equipment, and fire prevention.

NEEDS OF THE FIRE SERVICES

The Science, Technology, and Space Subcommittee held a hearing on October 11, 2001, to examine the needs of the fire service in responding to terrorism. According to the testimony at that hearing, and press reports on the events of September 11, 2001, the

fire service has identified the need for assistance in several areas, including equipment standardization, coordination, and training.

Equipment Standardization—Today’s firefighters use a variety of technologies including thermal imaging equipment, devices for locating firefighters and victims, and state-of-the-art protective suits to fight fires, clean up chemical or hazardous materials spills, and contend with potential terrorist devices. For FY 2003, \$900 million was authorized for the Assistance to the Fire Fighters Grant Program as part of the National Defense Authorization Act for FY 2002 (P.L. 107-107), to provide Federal funding assistance for career and volunteer fire departments to buy necessary equipment and prepare for fires and other emergencies.

It is important to point out that there are no uniform technical standards for new equipment for combating fires and other safety threats. Without such standards, local fire companies may purchase equipment that do not satisfy their needs, or even purchase faulty equipment. For example, Montgomery County, Maryland, spent \$40,000 on “Level B” protective suits, but they cannot use them because the suits have “booties” that are not compatible with the firefighters’ boots. Also, in Virginia, Arlington County Chief Edward P. Plaughner has raised concerns about the lack of equipment standards, as well as the lack of guidelines for training the workers charged with responding to future terrorist attacks. In a September 10, 2002, story in *The Washington Post*, Chief Plaughner stated, “Without clear goals, we risk undermining ourselves while wasting precious resources.” In addition, a 1998 Blue Ribbon Panel review of the USFA recommended greater coordination between USFA and other agencies, such as National Institute of Standards and Technology, in order to promote state-of-the-art technology for fire safety.

Coordination—Another major obstacle facing the fire service concerns coordination. Many issues regarding coordination surfaced on September 11, 2001. On July 23, 2002, Titan Systems Corporation issued an after-action report, on behalf of the fire department of Arlington County, Virginia, which highlighted problems between the coordination of Washington, D.C., and Arlington County fire departments in responding to the attack on the Pentagon. The report also cited the confusion caused by a large influx of self-dispatched volunteers, and increased risks faced by the “bona fide responders.” These conclusions are consistent with an article by the current U.S. Fire Administrator, R. David Paulison, in the June 1993 issue of *Fire Chief* magazine, where he described being overwhelmed by the number of uncoordinated volunteer efforts that poured into Florida after Hurricane Andrew. Additionally, many fire officials and the General Accounting Office have highlighted the duplicative nature of many Federal programs and the need for better coordination between Federal, State, and local officials.

Training—The events of September 11, 2001, also demonstrated a need for improved training, especially in the areas of building collapse rescue and tactics to respond to terrorist-caused catastrophes. In his testimony before the Committee in October 2001, Kenneth Burris, the Chief Operating Officer of USFA, testified on the need for greater training in leadership and strategic skills, including incident management systems and integrated response. Further, the growing trend of wildfires invading urban

areas highlights the need for urban firefighters to be prepared to deal with these threats.

LEGISLATIVE HISTORY

On October 11, 2001, the Subcommittee on Science, Technology, and Space conducted a hearing on the “Needs of the Fire Service.” At this hearing, witnesses included: Senator Joseph Biden, Jr.; Senator Christopher Dodd; Congressman William Pascrell, Jr.; Congressman Curt Weldon; Mr. Kenneth O. Burris, Jr., Chief Operating Officer, USFA; Chief John M. Buckman, President, International Association of Fire Chiefs; Battalion Chief Robert Ingram, New York City Fire Department; Chief Ed Plaughner, Arlington County, Virginia, Fire Department; Mr. Harold A. Schaitberger, General President, International Association of Fire Fighters; and Mr. James E. Turner, Executive Director of the Delaware Volunteer Fireman’s Association, on behalf of the National Volunteer Fire Council.

On August 1, 2002, Senator John McCain introduced S. 2862, the Firefighting Research and Coordination Act. The legislation was co-sponsored by Senator Ernest Hollings, Senator Maria Cantwell, and Senator Joseph Biden.

On September 19, 2002, the Committee met in open executive session and, by a voice vote, ordered S. 2862 to be reported with a substitute amendment offered by Senator McCain. The substitute included two major changes: (1) an authorization of \$2.2 million to USFA for FY 2003 for activities to support the development of voluntary consensus standards for new firefighting technology; and (2) a requirement that the Director of FEMA revise the Federal Response Plan to incorporate plans for responding to terrorist attacks, particularly in urban areas, and to submit a report on these revisions to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science.

ESTIMATED COSTS

In compliance with subsection (a)(3) of paragraph 11 of rule XXVI of the Standing Rules of the Senate, the Committee states that, in its opinion, it is necessary to dispense with the requirements of paragraphs (1) and (2) of that subsection in order to expedite the business of the Senate.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

NUMBER OF PERSONS COVERED

Section 2(a) of this legislation would direct the U.S. Fire Administrator (the Administrator) to support the development of new voluntary consensus standards for new firefighting technologies through national voluntary consensus standards organizations. Recipients of grants through the FIRE Act, as defined by section 33 of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. 2229), would be required by regulation to purchase equipment for

which applicable voluntary consensus standards have been established.

ECONOMIC IMPACT

This legislation would not have an adverse economic impact on the Nation. The bill would promote the development of more effective equipment and the establishment of better coordination and training to respond to fires, terrorist attacks, and other national emergencies.

PRIVACY

S. 2862 would not have a negative impact on the personal privacy of individuals.

PAPERWORK

The legislation would not increase paperwork requirements for private individuals or businesses. The bill would require two reports from the Federal government. The first report would be from the Administrator to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science, within 90 days after the enactment of this legislation, on the need for a strategy concerning the deployment of volunteers and emergency response personnel, including a national credentialing system, in the event of a national emergency. The second report would be from the Director of FEMA to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science, within 180 days after the date of enactment, on revisions that the Director has made to the Federal Response Plan for responding to terrorist attacks, particularly in urban areas, including fire detection and suppression, and related emergency services.

SECTION-BY-SECTION ANALYSIS

Section 1. Short title.

The section would cite the Act as the “Firefighting Research and Coordination Act.”

Sec. 2. New firefighting technology.

Subsection (a) would establish a new section 8(e) of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. 2207). This new subsection would direct the Administrator, in consultation with the National Institute of Standards and Technology, the Inter-Agency Board for Equipment Standardization and Inter-Operability, national voluntary consensus standards development organizations, and other interested parties, to develop new, and utilize existing, measurement techniques and testing methodologies for evaluating the performance of new firefighting technology, including:

- personal protection equipment;
- devices for advance warning of extreme hazard;
- equipment for enhanced vision;
- devices to locate victims, firefighters, and other rescue personnel in above-ground and below-ground structures;

- equipment and methods to provide information for incident command, including the monitoring and reporting of individual personnel welfare;
- equipment and methods for training, especially for virtual reality training; and
- robotics and other remote-controlled devices.

Under new section 8(e), the Administrator would also be required to evaluate the compatibility of new equipment and technology with existing firefighter technology, and support the development of new voluntary consensus standards through national voluntary consensus standards organizations for new firefighting technologies.

For equipment for which applicable voluntary consensus standards have been established, the Administrator would be directed to require, by regulation, that equipment purchased through the Assistance to Firefighters Grant Program established by section 33 of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. 2229) meet or exceed applicable voluntary consensus standards. For the purposes of this subsection, the Administrator would have the discretion to determine the applicability of voluntary consensus standards to an application under this program. The Committee recognizes that the establishment of voluntary consensus standards can be a time-consuming process and that developments in new firefighting technology may supersede these standards. In order to enable fire departments to have access to state-of-the-art equipment, the Committee recommends that the Administrator exercise some flexibility in the rare case when a newly developed firefighting technology may make an existing voluntary consensus standard irrelevant.

Subsection (b) would amend section 17 of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. 2216) by authorizing appropriations of \$2.2 million for FY 2003 to carry out this section.

Sec. 3. Coordination of response to national emergency.

Subsection (a) would create a new section 10(b) of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. 2209). New subsection (b) would require the Administrator, after consultation with the Director of FEMA, to provide technical assistance and training to State and local fire service officials to establish nationwide and State mutual aid systems for dealing with national emergencies. These mutual aid systems would include threat assessment and equipment deployment strategies, and include means of collecting asset and resource information to provide accurate and timely data for regional deployment. These mutual aid systems also would have to be consistent with FEMA's Federal Response Plan. The Administrator, in consultation with the Director of FEMA, would be required to develop and make available to State and local fire service officials model mutual aid plans for both intrastate and interstate assistance.

Subsection (b) would require the Administrator to report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science, within 90 days after the date of enactment of this Act, on the need for a strategy concerning the deployment of volunteers and emergency response personnel (as defined in section 6 of the Firefighters' Safe-

ty Study Act (15 U.S.C. 2223e)), including a national credentialing system, in the event of a national emergency.

Subsection (c) would require the Director of FEMA to revise the Federal Response Plan within 180 days after the date of enactment of this Act to incorporate plans for responding to terrorist attacks, particularly in urban areas, including fire detection and suppression and related emergency services. The Director of FEMA would also be required to transmit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science on these revisions.

Sec. 4. Training.

Subsection (a) would amend section 8(d)(1) of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. 2206(d)(1)) to authorize the Superintendent of the National Fire Academy to conduct training in the following areas:

- (i) strategies for building collapse rescue;
- (ii) the use of technology in response to fires, including terrorist incidents and other national emergencies;
- (iii) response, tactics, and strategies for dealing with terrorist-caused national catastrophes;
- (iv) use of and familiarity with FEMA's Federal Response Plan;
- (v) leadership and strategic skills, including integrated management systems operations and integrated response;
- (vi) applying new technology and developing strategies and tactics for fighting forest fires;
- (vii) integrating terrorism response agencies into the national terrorism incident response system; and
- (viii) response tactics and strategies for fighting fires at United States ports, including fires on the water and aboard vessels.

Subsection (b) would authorize the Superintendent of the National Fire Academy to consult with other Federal, State, and local government officials in developing curricula for classes at the Academy.

Subsection (c) would require the Administrator to coordinate the training provided under section 8(d)(1) of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. 2206(d)(1)) with the Attorney General, the Secretary of Health and Human Services, and the heads of other Federal agencies, to ensure that such training does not duplicate existing courses available to fire service personnel and to establish a mechanism for eliminating duplicative training programs.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in *italic*, existing law in which no change is proposed is shown in roman):

FEDERAL FIRE PREVENTION AND CONTROL ACT OF 1974
SEC. 8. NATIONAL ACADEMY FOR FIRE PREVENTION AND CONTROL.

[15 U.S.C. 2206]

(a) ESTABLISHMENT.—The Director shall establish, at the earliest practicable date, a National Academy for Fire Prevention and Control. The purpose of the Academy shall be to advance the professional development of fire service personnel and of other persons engaged in fire prevention and control activities.

(b) SUPERINTENDENT.—The Academy shall be headed by a Superintendent, who shall be appointed by the Director. In exercising the powers and authority contained in this section the Superintendent shall be subject to the direction of the Administrator.

(c) POWERS OF SUPERINTENDENT.—The Superintendent is authorized to—

(1) develop and revise curricula, standards for admission and performance, and criteria for the awarding of degrees and certifications;

(2) appoint such teaching staff and other personnel as he determines to be necessary or appropriate;

(3) conduct courses and programs of training and education, as defined in subsection (d) of this section;

(4) appoint faculty members and consultants without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and, with respect to temporary and intermittent services, to make appointments to the same extent as is authorized by section 3109 of title 5, United States Code;

(5) establish fees and other charges for attendance at, and subscription to, courses and programs offered by the Academy. Such fees may be modified or waived as determined by the Superintendent;

(6) conduct short courses, seminars, workshops, conferences, and similar education and training activities in all parts and localities of the United States;

(7) enter into such contracts and take such other actions as may be necessary in carrying out the purposes of the Academy; and

(8) consult with officials of the fire services and other interested persons in the exercise of the foregoing powers.

(d) PROGRAM OF THE ACADEMY.—The Superintendent is authorized to—

(1) train fire service personnel in such skills and knowledge as may be useful to advance their ability to prevent and control fires, including, but not limited to—

(A) techniques of fire prevention, fire inspection, firefighting, and fire and arson investigation;

(B) tactics and command of firefighting for present and future fire chiefs and commanders;

(C) administration and management of fire services;

(D) tactical training in the specialized field of aircraft fire control and crash rescue;

- (E) tactical training in the specialized field of fire control and rescue aboard waterborne vessels; **and**
- (F) *strategies for building collapse rescue;*
- (G) *the use of technology in response to fires, including terrorist incidents and other national emergencies;*
- (H) *response, tactics, and strategies for dealing with terrorist-caused national catastrophes;*
- (I) *use of and familiarity with the Federal Emergency Management Agency's Federal Response Plan;*
- (J) *leadership and strategic skills, including integrated management systems operations and integrated response;*
- (K) *applying new technology and developing strategies and tactics for fighting forest fires;*
- (L) *integrating terrorism response agencies into the national terrorism incident response system;*
- (M) *response tactics and strategies for fighting fires at United States ports, including fires on the water and aboard vessels; and*
- [(F)]** (N) the training of present and future instructors in the aforementioned subjects;
- (2) develop model curricula, training programs, and other educational materials suitable for use at other educational institutions, and to make such materials available without charge;
- (3) develop and administer a program of correspondence courses to advance the knowledge and skills of fire service personnel;
- (4) develop and distribute to appropriate officials model questions suitable for use in conducting entrance and promotional examinations for fire service personnel; and
- (5) encourage the inclusion of fire prevention and detection technology and practices in the education and professional practice of architects, builders, city planners, and others engaged in design and planning affected by fire safety problems.
- (e) TECHNICAL ASSISTANCE.—The Administrator is authorized, to the extent that he determines it necessary to meet the needs of the Nation, to encourage new programs and to strengthen existing programs of education and training by local fire services, units, and departments, State and local governments, and private institutions, by providing technical assistance and advice to—
 - (1) vocational training programs in techniques of fire prevention, fire inspection, firefighting, and fire and arson investigation;
 - (2) fire training courses and programs at junior colleges; and
 - (3) four-year degree programs in fire engineering at colleges and universities.
- (f) ASSISTANCE TO STATE AND LOCAL FIRE SERVICE TRAINING PROGRAMS.—The Administrator is authorized to provide assistance to State and local fire service training programs through grants, contracts, or otherwise. Such assistance shall not exceed 4 per centum of the amount authorized to be appropriated in each fiscal year pursuant to section 17 of this Act.
- (g) SITE SELECTION.—The Academy shall be located on such site as the Director selects, subject to the following provisions:

(1) The Director is authorized to appoint a Site Selection Board consisting of the Academy Superintendent and two other members to survey the most suitable sites for the location of the Academy and to make recommendations to the Director.

(2) The Site Selection Board in making its recommendations and the Director in making his final selection, shall give consideration to the training and facility needs of the Academy, environmental effects, and the possibility of using a surplus Government facility, and such other factors as are deemed important and relevant. The Director shall make a final site selection not later than 2 years after the date of enactment of this Act.

(h) CONSTRUCTION COSTS.—Of the sums authorized to be appropriated for the purpose of implementing the programs of the Administration, not more than \$9,000,000 shall be available for the construction of facilities of the Academy on the site selected under subsection (g) of this section. Such sums for such construction shall remain available until expended.

(i) EDUCATIONAL AND PROFESSIONAL ASSISTANCE.—The Administrator is authorized to—

(1) provide stipends to students attending Academy courses and programs, in amounts up to 75 per centum of the expense of attendance, as established by the Superintendent;

(2) provide stipends to students attending courses and non-degree training programs approved by the Superintendent at universities, colleges, and junior colleges, in amounts up to 50 per centum of the cost of tuition;

(3) make or enter into contracts to make payments to institutions of higher education for loans, not to exceed \$2,500 per academic year for any individual who is enrolled on a full-time basis in an undergraduate or graduate program of fire research or engineering which is certified by the Superintendent. Loans under this paragraph shall be made on such terms and subject to such conditions as the Superintendent and each institution involved may jointly determine; and

(4) establish and maintain a placement and promotion opportunities center in cooperation with the fire services, for firefighters who wish to learn and take advantage of different or better career opportunities. Such center shall not limit such assistance to students and graduates of the Academy, but shall undertake to assist all fire service personnel.

(j) BOARD OF VISITORS.—Upon establishment of the Academy, the Director shall establish a procedure for the selection of professionals in the field of fire safety, fire prevention, fire control, research and development in fire protection, treatment and rehabilitation of fire victims, or local government services management to serve as members of a Board of Visitors for the Academy. Pursuant to such procedure, the Director shall select eight such persons to serve as members of such Board of Visitors to serve such terms as the Director may prescribe. The function of such Board shall be to review annually the program of the Academy and to make comments and recommendations to the Director regarding the operation of the Academy and any improvements therein which such Board deems appropriate. Each member of such Board shall be re-

imbursed for any expenses actually incurred by him in the performance of his duties as a member of such Board.

(k) ACCREDITATION.—The Superintendent is authorized to establish a Committee on Fire Training and Education which shall inquire into and make recommendations regarding the desirability of establishing a mechanism for accreditation of fire training and education programs and courses, and the role which the Academy should play if such a mechanism is recommended. The Committee shall consist of the Superintendent as Chairman and eighteen other members appointed by the Administrator from among individuals and organizations possessing special knowledge and experience in the field of fire training and education or related fields. The Committee shall submit to the Administrator within two years after its appointment a full and complete report of its findings and recommendations. Upon the submission of such report, the Committee shall cease to exist. Each appointed member of the Committee shall be reimbursed for expenses actually incurred in the performance of his duties as a member.

(l) ADMISSION.—The Superintendent is authorized to admit to the courses and programs of the Academy individuals who are members of the firefighting, rescue, and civil defense forces of the Nation and such other individuals, including candidates for membership in these forces, as he determines can benefit from attendance. Students shall be admitted from any State, with due regard to adequate representation in the student body of all geographic regions of the Nation. In selecting students, the Superintendent may seek nominations and advice from the fire services and other organizations which wish to send students to the Academy.

SEC. 8. FIRE TECHNOLOGY.

[15 U.S.C. 2207]

(a) DEVELOPMENT.—The Administrator shall conduct a continuing program of development, testing, and evaluation of equipment for use by the Nation's fire, rescue, and civil defense services, with the aim of making available improved suppression, protective, auxiliary, and warning devices incorporating the latest technology. Attention shall be given to the standardization, compatibility, and interchangeability of such equipment. Such development, testing, and evaluation activities shall include, but need not be limited to—

(1) safer, less cumbersome articles of protective clothing, including helmets, boots, and coats;

(2) breathing apparatus with the necessary duration of service, reliability, low weight, and ease of operation for practical use;

(3) safe and reliable auxiliary equipment for use in fire prevention, detection, and control, such as fire location detectors, visual and audio communications equipment, and mobile equipment;

(4) special clothing and equipment needed for forest fires, brush fires, oil and gasoline fires, aircraft fires and crash rescue, fires occurring aboard waterborne vessels, and in other special firefighting situations;

(5) fire detectors and related equipment for residential use with high sensitivity and reliability, and which are sufficiently

inexpensive to purchase, install, and maintain to insure wide acceptance and use;

(6) in-place fire prevention systems of low cost and of increased reliability and effectiveness;

(7) methods of testing fire alarms and fire protection devices and systems on a non-interference basis;

(8) the development of purchase specifications, standards, and acceptance and validation test procedures for all such equipment and devices; and

(9) operation tests, demonstration projects, and fire investigations in support of the activities set forth in this section.

(b) LIMITATION ON MANUFACTURE AND SALE OF EQUIPMENT.—The Administration shall not engage in the manufacture or sale of any equipment or device developed pursuant to this section, except to the extent that it deems it necessary to adequately develop, test, or evaluate such equipment or device.

(c) MANAGEMENT STUDIES.—

(1) The Administrator is authorized to conduct, directly or through contracts or grants, studies of the operations and management aspects of fire services, utilizing quantitative techniques, such as operations research, management economics, cost effectiveness studies, and such other techniques and methods as may be applicable and useful. Such studies shall include, but need not be limited to, the allocation of resources, the optimum location of fire stations, the optimum geographical area for an integrated fire service, the manner of responding to alarms, the operation of citywide and regional fire dispatch centers, firefighting under conditions of civil disturbance, and the effectiveness, frequency, and methods of building inspections.

(2) The Administrator is authorized to conduct, directly or through contracts or grants, research concerning and productivity and efficiency of fire service personnel, the job categories and skills required by fire services under varying conditions, the reduction of injuries to fire service personnel, the most effective fire prevention programs and activities, and techniques for accurately measuring and analyzing the foregoing.

(3) The Administrator is authorized to conduct, directly or through contracts, grants, or other forms of assistance, development, testing, and demonstration projects to the extent deemed necessary to introduce and to encourage the acceptance of new technology, standards, operating methods, command techniques, and management systems for utilization by the fire services.

(4) The Administrator is authorized to assist the Nation's fire services, directly or through contracts, grants, or other forms of assistance, to measure and evaluate, on a cost-benefit basis, the effectiveness of the programs and activities of each fire service and the predictable consequences on the applicable local fire services of coordination or combination, in whole or in part, in a regional, metropolitan, or statewide fire service.

(d) RURAL ASSISTANCE.—The Administrator is authorized to assist the Nation's fire services, directly or through contracts, grants, or other forms of assistance, to sponsor and encourage research into approaches, techniques, systems, and equipment to improve

fire prevention and control in the rural and remote areas of the Nation.

(e) DEVELOPMENT OF NEW TECHNOLOGY.—

(1) IN GENERAL.—In addition to, or as part of, the program conducted under subsection (a), the Administrator, in consultation with the National Institute of Standards and Technology, the Inter-Agency Board for Equipment Standardization and Inter-Operability, national voluntary consensus standards development organizations, and other interested parties, shall—

(A) develop new, and utilize existing, measurement techniques and testing methodologies for evaluating new firefighting technologies, including—

- (i) personal protection equipment;*
- (ii) devices for advance warning of extreme hazard;*
- (iii) equipment for enhanced vision;*
- (iv) devices to locate victims, firefighters, and other rescue personnel in above-ground and below-ground structures;*
- (v) equipment and methods to provide information for incident command, including the monitoring and reporting of individual personnel welfare;*
- (vi) equipment and methods for training, especially for virtual reality training; and*
- (vii) robotics and other remote-controlled devices;*

(B) evaluate the compatibility of new equipment and technology with existing firefighting technology; and

(C) support the development of new voluntary consensus standards through national voluntary consensus standards organizations for new firefighting technologies based on techniques and methodologies described in subparagraph (A).

(2) NEW EQUIPMENT MUST MEET STANDARDS.—For equipment for which applicable voluntary consensus standards have been established, the Administrator shall, by regulation, require that equipment or systems purchased through the assistance program established by section 33 meet or exceed applicable voluntary consensus standards.

[(e)] *(f) COORDINATION.—In establishing and conducting programs under this section, the Administrator shall take full advantage of applicable technological developments made by other departments and agencies of the Federal Government, by State and local governments, and by business, industry, and nonprofit associations.*

SEC. 10. MASTER PLANS.

[15 U.S.C. 2209]

(a) ENCOURAGEMENT BY ADMINISTRATOR.— The establishment of master plans for fire prevention and control are the responsibility of the States and the political subdivisions thereof. The Administrator is authorized to encourage and assist such States and political subdivisions in such planning activities, consistent with his powers and duties under this Act.

(b) MUTUAL AID SYSTEMS.—

(1) *IN GENERAL.*—The Administrator, after consultation with the Director of the Federal Emergency Management Agency, shall provide technical assistance and training to State and local fire service officials to establish nationwide and State mutual aid systems for dealing with national emergencies that—

(A) include threat assessment and equipment deployment strategies;

(B) include means of collecting asset and resource information to provide accurate and timely data for regional deployment; and

(C) are consistent with the Federal Emergency Management Agency's Federal Response Plan.

(2) *MODEL MUTUAL AID PLANS.*—The Administrator, in consultation with the Director of the Federal Emergency Management Agency, shall develop and make available to State and local fire service officials model mutual aid plans for both intrastate and interstate assistance.

[(b)] (c) *MASTER PLAN DEFINED.*—For the purposes of this section, a “master plan” is one which will result in the planning and implementation in the area involved of a general program of action for fire prevention and control. Such master plan is reasonably expected to include (1) a survey of the resources and personnel of existing fire services and an analysis of the effectiveness of the fire and building codes in such area; (2) an analysis of short and long term fire prevention and control needs in such area; (3) a plan to meet the fire prevention and control needs in such area; and (4) an estimate of cost and realistic plans for financing the implementation of the plan and operation on a continuing basis and a summary of problems that are anticipated in implementing such master plan.

SEC. 17. AUTHORIZATION OF APPROPRIATIONS.

[15 U.S.C. 2216]

(a) There are authorized to be appropriated to carry out the foregoing provisions of this Act, except as otherwise specifically provided, with respect to the payment of claims, under section 11 of this Act, an amount not to exceed \$25,210,000 for the fiscal year ending September 30, 1980, which amount includes—

(1) \$4,781,000 for programs which are recommended in the report submitted to the Congress by the Administrator pursuant to section 24(b)(1);

(2) \$9,430,000 for the National Academy for Fire Prevention and Control;

(3) \$307,000 for adjustments required by law in salaries, pay, retirement, and employee benefits;

(4) \$500,000 for additional rural firefighting technical assistance and information activities;

(5) \$500,000 for the study required by section 26 of this Act; and

(6) \$110,000 for the study required by section 27 of this Act.

(b) There are authorized to be appropriated for the additional administrative expenses of the Federal Emergency Management Agency, which are related to this Act and which result from Reorganization Plan Numbered 3 of 1978 (submitted June 19, 1978) and

related Executive orders, an amount not to exceed \$600,000 for the fiscal year ending September 30, 1980.

(c) There are authorized to be appropriated to carry out this Act, except as otherwise specifically provided with respect to the payment of claims under section 11 of this Act, an amount not to exceed \$23,814,000 for the fiscal year ending September 30, 1981, which amount includes—

(1) not less than \$1,100,000 for the first year of a three-year concentrated demonstration program of fire prevention and control in two States with high fire death rates;

(2) not less than \$2,575,000 for rural fire prevention and control; and

(3) not less than \$4,255,000 for research and development for the activities under section 18 of this Act at the Fire Research Center of the National Bureau of Standards, of which not less than \$250,000 shall be available for adjustments required by law in salaries, pay, retirement, and employee benefits.

The funds authorized in paragraph (3) shall be in addition to funds authorized in any other law for research and development at the Fire Research Center.

(d) Except as otherwise specifically provided with respect to the payment of claims under section 11 of this Act, to carry out the purposes of this Act, there are authorized to be appropriated—

(1) \$20,815,000 for the fiscal year ending September 30, 1982, and \$23,312,800 for the fiscal year ending September 30, 1983, which amount shall include—

(A) such sums as may be necessary for the support of research and development at the Fire Research Center of the National Bureau of Standards under section 18 of this Act, which sums shall be in addition to those funds authorized to be appropriated under the National Bureau of Standards Authorization Act for fiscal years 1981 and 1982; and

(B) \$654,000 for the fiscal year ending September 30, 1982, and \$732,480 for the fiscal year ending September 30, 1983, for executive direction by the Federal Emergency Management Agency of program activities for which appropriations are authorized by this subsection; and

(2) such further sums as may be necessary in each of the fiscal years ending September 30, 1982, and September 30, 1983, for adjustments required by law in salaries, pay, retirement, and employee benefits incurred in the conduct of activities for which funds are authorized by paragraph (1) of this subsection.

The funds authorized under section 18 shall be in addition to funds authorized in any other law for research and development at the Fire Research Center of the National Bureau of Standards.

(e) Except as otherwise specifically provided with respect to the payment of claims under section 11 of this Act, to carry out the purposes of this Act, there are authorized to be appropriated—

(1) \$15,720,000 for the fiscal year ending September 30, 1984, and \$20,983,000 for the fiscal year ending September 30, 1985; and

(2) such further sums as may be necessary in each of the fiscal years ending September 30, 1984, and September 30, 1985, for adjustments required by law in salaries, pay, retirement,

and employee benefits incurred in the conduct of activities for which funds are authorized by paragraph (1) of this subsection. The funds authorized under this subsection shall be in addition to funds authorized in any other law for research and development at the Fire Research Center of the National Bureau of Standards.

(f) Except as otherwise specifically provided with respect to the payment of claims under section 11 of this Act, to carry out the purposes of this Act, there are authorized to be appropriated \$22,037,000 for the fiscal year ending September 30, 1986 and \$18,300,000 for the fiscal year ending September 30, 1987.

(g)(1) Except as otherwise specifically provided with respect to the payment of claims under section 11 of this Act, there are authorized to be appropriated to carry out the purposes of this Act—

(A) \$17,039,000 for the fiscal year ending September 30, 1989;

(B) \$17,737,000 for the fiscal year ending September 30, 1990;

(C) \$18,464,000 for the fiscal year ending September 30, 1991;

(D) \$25,550,000 for the fiscal year ending September 30, 1992;

(E) \$26,521,000 for the fiscal year ending September 30, 1993;

(F) \$27,529,000 for the fiscal year ending September 30, 1994;

(G) \$29,664,000 for the fiscal year ending September 30, 1998;

(H) \$30,554,000 for the fiscal year ending September 30, 1999;

(I) \$44,753,000 for fiscal year 2001, of which \$3,000,000 is for research activities, and \$250,000 may be used for contracts or grants to non-Federal entities for data analysis, including general fire profiles and special fire analyses and report projects, and of which \$6,000,000 is for anti-terrorism training, including associated curriculum development, for fire and emergency services personnel;

(J) \$47,800,000 for fiscal year 2002, of which \$3,250,000 is for research activities, and \$250,000 may be used for contracts or grants to non-Federal entities for data analysis, including general fire profiles and special fire analyses and report projects, and of which \$7,000,000 is for anti-terrorism training, including associated curriculum development, for fire and emergency services personnel; and

(K) \$50,000,000 for fiscal year 2003, of which \$3,500,000 is for research activities, and \$250,000 may be used for contracts or grants to non-Federal entities for data analysis, including general fire profiles and special fire analyses and report projects, and of which \$8,000,000 is for anti-terrorism training, including associated curriculum development, for fire and emergency services personnel.

(2) Of the amounts referred to in paragraph (1), not more than \$4,150,000 is authorized to be appropriated for each fiscal year for National Emergency Training Center site administration.

(h) In addition to any other amounts that are authorized to be appropriated to carry out this Act, there are authorized to be appropriated to carry out this Act—

(1) \$500,000 for fiscal year 1995 for basic research on the development of an advanced course on arson prevention;

(2) \$2,000,000 for fiscal year 1996 for the expansion of arson investigator training programs at the Academy under section 24 and at the Federal Law Enforcement Training Center, or through regional delivery sites;

(3) \$4,000,000 for each of fiscal years 1995 and 1996 for carrying out section 25, except for salaries and expenses for carrying out section 25; and

(4) \$250,000 for each of the fiscal years 1995 and 1996 for salaries and expenses for carrying out section 25.

(i) *DEVELOPMENT OF NEW TECHNOLOGY.*—*There are authorized to be appropriated to the Administrator to carry out section 8(e) \$2,200,000 for fiscal year 2003.*

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