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NFPA 1452 Training Fire Department Personnel to Make Dwelling Firesafety Surveys 1988 Edition

National Fire Protection Association Batterymarch Park, Quincy, MA 02269

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Policy Adopted by NFPA Board of Directors on December 3, 1982

The Board of Directors reaffirms that the National Fire Protection Association recognizes that the toxicity of the products of combustion is an important factor in the loss of life from fire. NFPA has dealt with that subject in its technical committee documents for many years.

There is a concern that the growing use of synthetic materials may produce more or additional toxic products of combustion in a fire environment. The Board has, therefore, asked all NFPA technical committees to review the documents for which they are responsible to be sure that the documents respond to this current concern. To assist the committees in meeting this request, the Board has appointed an advisory committee to provide specific guidance to the technical committees on questions relating to assessing the hazards of the products of combustion.

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NATIONAL FIRE PROTECTION ASSOCIATION

NFPA 1452

Guide for

Training Fire Department Personnel

to Make Dwelling Firesafety Surveys

1988 Edition

This edition of NFPA 1452, *Guide for Training Fire Department Personnel to Make Dwelling Firesafety Surveys*, was prepared by the Technical Committee on Fire Service Training, and acted on by the National Fire Protection Association, Inc. at its Fall Meeting held November 9-12, 1987 in Portland, Oregon. It was issued by the Standards Council on December 2, 1987, with an effective date of December 22, 1987, and supersedes all previous editions.

The 1988 edition of this standard has been approved by the American National Standards Institute.

Origin and Development of NFPA 1452

This text was developed by the Committee on Fire Service Training and processed in accordance with NFPA *Regulations Governing Committee Projects*. This guide is a revision of and replacement for the NFPA booklet entitled, "How to Train Fire Fighters to Make Dwelling Inspections."

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This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

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Guide for

Training Fire Department Personnel to Make Dwelling Firesafety Surveys

1988 Edition

Information on referenced publications can be found in Chapter 7.

Chapter 1 Introduction

1-1 General. The intent and purpose of this document is to provide the fire department training officers or other fire service personnel with a guide for the establishment of a Dwelling Firesafety Program for their own community.

In order to be effective and adequately deal with the local fire problems, the solution to a particular firesafety problem must be developed locally. This document is intended to be a basic guide to possible elements for inclusion in a locally developed program.

This document may be applied to both rural and urban communities. Principles contained in this document may be applied to both single- and multi-family dwellings such as apartments, tenements, condominiums, etc., as local conditions dictate.

This document is not intended to be a training manual or a fire inspection manual, but is to be used as a guide to establishing a locally prepared dwelling inspection program geared to address the specific problem(s) faced by the local fire service organization. By utilizing fire suppression personnel in this capacity, fire departments can achieve some or all of the following benefits:

- increased productivity,
- increased community contact, and
- familiarization with residential properties.

Specific sections of this document may be included or eliminated as local conditions dictate.

1-2 Rationale for Dwelling Firesafety Surveys.

1-2.1 Fire is one of our nation's major problems. In the home, it is the second most frequent cause of accidental death. Roughly four-fifths of annual fire deaths occur in residential properties, generally in the victim's own home. Fire loss statistics reported by the National Fire Protection Association for 1986 were approximately $3.5 billion for homes and $3.6 billion for all residential properties.

1-2.2 The local fire department is responsible for the protection of life and property. If the downtrend in residential fire deaths in the past few years is to continue, a community effort toward public firesafety education, including firesafe behaviors, the use of smoke detectors, residential fast response sprinklers, and the use of a fire escape plan, must be incorporated into every community's fire protection system. An effective home inspection program is a primary method of fire prevention with proven success in lowering loss of life, injury, and property damage from fire.

1-2.3 In addition to reducing loss of life and property damage, other important results will be generated to benefit both the fire department and the entire community.

(a) Home firesafety inspections give the fire department the opportunity to publicize year-round programs and activities conducted in the community. The citizens who support the fire department will feel they are getting "more for their money" in terms of a more comprehensive fire service organization.

(b) Home firesafety surveys give the fire department an opportunity to meet residents of the community on a one-to-one basis and distribute various fire prevention literature, telephone stickers, and other firesafety information. The dwelling firesafety program will also provide the fire department with the opportunity to answer any specific fire protection or firesafety inquiries.

(c) The dwelling firesafety program will also provide fire fighters with the opportunity to become better acquainted with street names and layout, hydrant and water supply locations, community development, home construction, and allow pre-fire planning. The fire fighters may make notes of these items and other useful information for discussion during training sessions. Also, using fire apparatus improves driver proficiency. The program will also increase the productivity of fire fighters, specifically in fire-service-related duties. In addition to increasing the level of service to the community, the dwelling firesafety program will lend to the professional development of fire fighters engaged in he program's activities. It is important to note that, while these fringe benefits are helpful, the most important responsibility is making good fire inspections to reduce fire hazards and fires, and to provide effective public fire prevention education throughout the community.

Chapter 2 Program Benefits

2-1 Material Distribution. Dwelling firesafety surveys provide the fire department with one of the best means of delivering public fire prevention education through direct contact with residents of the community. Maximum effectiveness may be accomplished through the distribution of fire prevention literature directed at the local fire problem. Fire fighters can explain specific items included in the literature and answer any questions that homeowners might have on specific campaigns that the fire department conducts. Many fire departments find it advantageous to print special cards, certificates, or door stickers to compliment the homeowners when their dwellings are found to be in a good, firesafe condition.

2-2 Support of Other Programs. Personal visits by fire fighters to dwellings for firesafety inspections will generally improve the fire department's public image in

the community. The program will enable fire fighters to distribute information on smoke detector use and placement, the benefits of the installation of residential fast response sprinklers (RFRS), home fire escape planning, safety hints for babysitters, and a variety of other safety-related subjects. The program may also provide the opportunity to supplement the fire inspection by giving the homeowner telephone stickers or cards showing the emergency telephone numbers and procedures for sending a fire alarm.

2-3 Continuing Dwelling Inspection Programs. In the planning stages of a dwelling firesafety survey program, the fire chief and fire officers should look beyond the immediate short-term benefits, anticipating its extension and continuation as a permanent program. While the initial dwelling firesafety survey may be a resounding success, the fire department should continue to analyze and evaluate the effectiveness of the program and its continued ability to address the current local fire problem. The fire department must realize that planning, implementation, and evaluation processes should be a continuous cycle that reacts to the varying needs of the community. The experiences of fire departments that have initiated successful dwelling firesafety survey programs have led these departments to retain these activities year after year. The success of these programs has, in some communities, resulted in a drastic reduction in life and property loss from fire.

Chapter 3 Planning the Dwelling Inspection Program

3-1 General.

3-1.1 Careful planning and preparation are essential if a dwelling firesafety survey program is to be successful.

3-1.2 The chief of the fire department should have the ultimate responsibility for the planning and execution of the program. The chief must also be able to "sell" the program to the people of the community and to the fire fighters who will make the inspections. The items for the chief to consider when planning the program are presented in the following sections.

3-2 Publicity. Dwelling inspections must also be "sold" to the public. They must be fully informed of the value of an inspection and how it can save their lives and homes from fire. This can be accomplished by enlisting the assistance of local radio and television stations and newspapers to inform the public of the purpose and benefits of the dwelling inspection service. The local Chamber of Commerce, community service clubs, church groups, fraternal orders, and schools should be contacted for additional support for the program. Generally, most of these organizations will be glad to cooperate. Careful planning and widespread community support will increase the overall success of the program.

3-3 Training.

3-3.1 One of the most important phases of any training program is teaching the fire fighter to practically apply the knowledge gained. The fire fighter should be able to recognize hazards of all types and make proper recommendations for their correction. The fire fighter should also be prepared to offer explanations and reasons for the corrections suggested. For example, the fire fighter must be prepared to recommend the installation of safety devices, such as fire extinguishers and smoke detectors, and to specify proper locations for their installation. The fire fighter must be knowledgeable to recognize fire hazards and technically informed of the recommended methods for their removal. Fire fighters should project an image and attitude that will leave a positive and lasting impression.

To achieve these goals in training fire fighters, visual and mechanical training aids are extremely useful. Color slides showing typical hazards and faulty installations will help fire fighters recognize these hazards. It is suggested that training officers seek the aid of technically qualified individuals such as building inspectors, electrical inspectors, etc., to assist in instructing fire fighters in the use and application of local codes and building regulations pertaining to fire protection and prevention.

3-3.2 Fire fighters must be thoroughly trained before being sent out on their own. Training will consist of classroom instruction and application of knowledge and principles in the field of fire prevention. Classroom instruction should include the following:

(a) Proper methods of introduction and explanation of program rationale for the homeowner.

(b) Proper methods of securing permission from the homeowner to perform the dwelling inspection. (The homeowner may refuse an inspection.)

(c) Common fire hazards that can be expected to be found in a dwelling.

(d) Provisions of the local fire code that are applicable to dwellings (inspections generally should be made as a courtesy and not because of fire prevention laws).

Training officers should take fire fighters into the field for supervised on-the-job training prior to allowing them to perform inspections on their own. This procedure will allow fire fighters to build confidence in their inspectional abilities under the supervision of an experienced individual. Field inspections with an experienced training officer should be continued until the training officer is sure the fire fighters are competent and at ease when dealing with the public. Dwelling inspections should be conducted by a minimum of two fire fighters, but too many fire fighters at a single dwelling may display an authoritative force, causing a negative resident reaction to an inspection.

3-4 Program Duration. Inspection of dwellings should be done on a year-round basis. The program should contain elements to be emphasized during specific times of the year, such as access to fire hydrants or heating equipment problems during winter months.

3-5 Buildings to be Surveyed. Every dwelling unit in the fire department's jurisdiction should be surveyed. In large cities, it may not be possible to inspect all dwellings each year. Where this is the case, the fire chief should decide how many dwellings will be inspected each year.

3-6 Scheduling. The scheduling of dwelling inspections should take into consideration the receptiveness of the citizens of the program. The fire department should develop a sensitivity to potential situations that might cause problems for the program. The hour of the inspection will depend a great deal on whether a department has career, call, or volunteer members, a combination of these, or civilian inspection personnel. The best hours for dwelling inspections are midmorning and midafternoon (9:00 to 11:00 a.m. and 1:00 to 3:30 p.m.), Monday through Friday, except holidays. Volunteer fire departments may find it necessary to use weekends and evenings, but care should be taken to avoid conflict with meal hours. It is also recommended that Sunday be excluded.

3-7 Inspection Procedures.

3-7.1 Before leaving the station, the officer in charge should see that all fire fighters are in proper uniform and are properly equipped. A dress uniform is recommended; however, if one is not available, a clean work uniform with proper insignia or identification is necessary. Fire apparatus carrying the inspecting crews should be neat and clean.

3-7.2 Fire apparatus utilized by the inspecting fire fighters should be kept in close proximity to the area being inspected to facilitate a quick response to an emergency alarm. Alarm notification can be accomplished through the use of portable radios or pagers carried by the fire fighters. One member may be assigned to stay with the apparatus to notify the remaining crew members through a predesignated signal, such as sounding the vehicle siren or air horn. Personnel assigned to the vehicle should be aware and cautious of children in the vicinity of the vehicle, particularly during times of vehicle movement. Personnel assigned to the vehicle should also be prepared to answer questions from the public relating to both the apparatus and firesafety in general. Consideration should be given to carrying a sign on the side of the apparatus explaining that inspections are in progress in the area to improve firesafety in the community. The banner or sign should also state the unit is in service and responds to emergencies during the inspections.

3-7.3 Fire fighters, in teams of two, should be assigned dwellings to inspect by the officer in charge. Most fire departments rely on two-person teams to conduct dwelling inspections for the protection of the inspection personnel. It is not recommended that single fire fighters inspect dwellings, as their conduct may be subject to unverifiable accusations. A dwelling should be approached by a walkway or path, not by walking across the lawn. Fire fighters should not smoke during an inspection. If the occupant is home, the fire fighters should introduce themselves, show proper identification, explain the purpose of the visit, and ask permission to enter. If a publicity campaign has been properly conducted, the resident will know why the fire fighters are there. If admittance is refused, the fire fighters should thank the occupant and leave appropriate fire prevention materials. If no one is home, a card should be left explaining that the visit was made and asking the occupant to call the fire station for an appointment to reschedule the inspection.

3-7.4 Once inside the dwelling, the inspection should begin without delay. The fire fighters should be helpful and courteous at all times. Care should be taken to avoid unnecessary conversation since this may lead to missing a potential fire hazard and will slow an inspection. Since fires may occur in any room, the entire dwelling should be inspected. However, if the occupant objects to inspection of certain rooms, the occupant's wishes should be respected. Closets and cabinets should be opened by the homeowner rather than the fire fighters.

3-7.5 It is important to remember that an inspection is voluntarily accepted by the occupant. The occupant should be asked to accompany the fire fighters to see any fire hazards and to personally hear explanations of these hazards. If the occupant is unable to accompany the fire fighters, the inspection should be resheduled at a more convenient time. Fire hazards identified should be noted on the inspection form. This form is only a recommendation list, not a list of violations. However, if a hazardous situation that violates the local fire regulations is found, it must be recorded by the fire department. For example, most fire codes require the installation of smoke detectors in residential occupancies. If inspecting fire fighters find a home where smoke detectors are not present, the resident should be advised to obtain one, and a notation of the recommendation should be made. During the inspection, the fire fighters should not argue any point, but merely make suggestions. The purpose is to eliminate hazards to life and property and all conversations should be directed toward this goal.

3-7.6 The inspection form should be filled out completely and in duplicate. The fire department should give serious consideration to not including specific name and address information on the inspection sheet. Because information obtained on dwelling inspections may not be protected under an Open Records Act, the fire department could be criticized for releasing information regarding a specific inspection. The inspection copy may be used for data analysis and determination of the numbers and types of fire hazards identified in the community. This information will assist in planning future fire prevention programs. If no hazards are found during the inspection, the occupants should be complimented for their efforts. Prior to leaving the premesis, the inspection sheet should be signed by the fire fighters, and the original left with the occupants.

Particular attention should be given to the legal considerations of the inspection form. Any form utilized should be reviewed and approved by the fire department's legal counsel.

3-7.7 Questions asked about the department should be answered. Questions regarding policy matters should be referred to the company officer and should not be answered by fire fighters. If the answer to any question is not known, fire fighters should research the matter and advise the resident as soon as possible.

It is important to realize that many persons will base their opinion of the entire fire department on this one contact; therefore, a professional attitude and demeanor must be maintained at all times.

3-7.8 Many fire departments have discontinued the service of providing window decals for invalids due to a feeling that these signs identified the home as an easy target for burglary or robbery. A more popular alternative to invalid stickers is a manual or computerized listing in the fire communications center of invalids or persons needing special assistance, whereby responding fire companies can be given the information en route to an emergency location. With the occupant's permission, telephone stickers showing the fire department's emergency number may be placed on the telephones in the residence.

3-7.9 Prior to leaving the premises, the fire fighters should make sure the occupants understand any fire hazards that have been found and what corrective action should be taken. Literature should be provided and an invitation should be issued to the occupants to feel free to stop by the fire station any time they have a question relating to firesafety or if they are interested in learning more about services offered by the fire department. Last, but not least, the occupants should be thanked for allowing the inspection.

3-8 Communications. When planning dwelling inspection programs, some provisions must be made for specific communications between the inspection teams and headquarters. Usually fire apparatus operators can handle these communications, but occassionally the officer in charge may need to notify headquarters of certain hazardous situations or other important information. The use of portable two-way radios or pagers should be considered as a means of insuring prompt notification and quick response to an emergency while fire units are in the field conducting dwelling inspections.

3-9 General Procedures. The fire chief should identify the goals and objectives of the dwelling firesafety program. These may include the percentage of dwellings to be contacted, areas of operation, the schedule of inspections, and other matters of general policy. General procedures should also be developed to utilize the information obtained, and to conduct a periodic program evaluation to identify any changes to the program operation that would increase its effectiveness.

Chapter 4 Common Hazards Found in Dwellings

4-1 General.

4-1.1 The explanations of hazards in this chapter must be adapted to local regulations and codes and should be included in an inspection report form designed to apprise the resident of hazards found, corrective measures required, and other recommendations of the inspection team. Other hazards that may be a problem in the specific community should also be described on the form.

4-1.2 Firesafety pamphlets should be carried by the fire fighters for distribution at the completion of the inspection, along with a copy of the inspection report form.

4-2 Careless Use of Smoking Materials and Matches.

4-2.1 Careless smoking and the improper disposal of matches and other items that can cause ignition are two of the major causes of fire. Fire fighters making dwelling inspections should ascertain whether or not there are smokers in the household and suggest the use of adequate firesafe ashtrays and proper disposal of smoking materials and ashes.

Fire fighters should explain the fire dangers associated with smoking in bed, or when extremely fatigued. They should suggest that furniture upholstery be checked after parties and before retiring for the evening.

4-2.2 Items to be noted during the inspection include:

(a) Ashtrays located in bedrooms, especially on night tables or within arm's reach of the bed.

(b) Burn marks on table tops, furniture upholstery, rugs, etc.

(c) The location and storage of matches and whether they are secure from small children. Fire fighters should recommend that matches be stored in a metal container, such as an old coffee can.

(d) Fire fighters should also explain how ornamental cigarette lighters on coffee tables or pocket lighters left laying around are attractive to children. These lighters can present an extreme safety hazard; not only could they be used to start a fire, but an inexperienced individual could be burned by them.

4-2.3 A common fire occurrence deserves special warning. Many residents have extinguished fires in upholstery or mattresses without calling the fire department, then retired for the night, thinking the fire was out. Because of the deep-seated nature of these fires, total extinguishment is extremely difficult. When sufficient oxygen is provided, sometimes hours later, the upholstery reignites. This often results in a serious fire and loss of life. Even under conditions where fire will not propagate, volumes of carbon monoxide and other harmful gases may rise to lethal levels without the knowledge of persons sleeping in the dwelling. The occupant should be told to notify the fire department of all fires in and around the home, even if they seem minor.

4-3 Electrical Installations.

4-3.1 Problems in electrical installations and equipment are generally associated with several types of violations, or misunderstandings of the design features of these items. A great deal of technical knowledge is required for recognition of improper design features. Hazards may be hidden from view by the building's configuration. Certain tell-tale signs of problem areas are recognizable to the trained fire fighter.

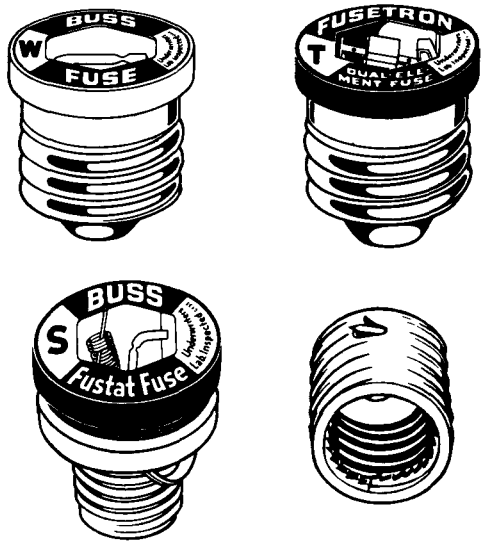
4-3.2 Overcurrent Protection.

4-3.2.1 The commonly used overcurrent protection devices for the protection of feeders, circuits, and equipment are fuses, circuit breakers, and thermal overload units. Basically, the purpose of the fuse, circuit breaker, or fuse cartridge is the same: to open the circuit if the electrical current reaches a value that will cause an excessive or dangerous temperature in the conductor. This safety feature is negated when a fuse or circuit breaker of a higher rated capacity is used to replace one of a lower rating (for example, replacing a 15-amp fuse with a 30-amp fuse), or bridging the circuit by placing a con-

ductor behind the fuse. It may be difficult to determine this overloading unless the fire fighters know the gauge of the wire used in the circuit and the electrical devices it feeds. Normally, the only way to determine improper overloading is to remove the fuse and examine it for excessive heating at the fuse base. Also, it should be checked for the presence of metallic bridging. Overheating may also be the result of a loose fuseholder, or the fuse may be shorted. Simply asking the occupants to identify the branch circuit controlled by the fuse or circuit breaker may indicate violations of the fusing principle. Residents should be requested to label branch circuits in the space provided on the panel box door.

4-3.2.2 Plug fuses consist of two basic types: (1) the ordinary Edison base type; and (2) the S type. Either of these may or may not be of the time-delay type.

Edison-type fuses are designed for ease of replacement and will account for the most problems. The Edison-base fuseholder will take an Edison-base fuse of any size up to the maximum 30-amp rating. The S-type fuse is designed to prevent tampering or bridging.



Adapters may be installed in Edison-base fuseholders that will prevent using higher rated S-type fuses in the adapter designed for lower ratings. They also prevent the use of pennies or other common bridging devices.

4-3.2.3 Cartridge fuses are provided in two types: (1) the one-time, and (2) the renewable link type. Cartridge fuseholders are designed to prevent, or to make extremely difficult, inserting a fuse other than the type for which the fuseholder was designed. Renewable link cartridge fuses have the following disadvantages:

(a) The links can be doubled or tripled, thereby defeating their purpose and usefulness.

(b) The links, upon replacement, can be left with loose connections.

4-3.2.4 Circuit breaker overloading will be more difficult to determine without tracing the circuit that it protects. Explaining the design features of fusing to the occupant may be the best way to determine an unintentional violation. Any difference in the physical appearance between circuit breakers in a panel should be suspect.

4-3.2.5 Ground-fault circuit-interrupters (GFCI) are devices that sense when current, even a small amount, passes to ground through any path other than the proper conductor. When this situation occurs, the GFCI trips almost instantly, stopping the flow of current in the circuit and through the person receiving the ground-fault shock. NFPA 70, *National Electrical Code®*, requires GFCI protection on all 125V, single-phase 15- and 20-amp receptacle outlets installed outdoors, in garages, and in bathrooms of residential occupancies. Receptacles located within 15 ft of the inside walls of a swimming pool, fountain, or similar location must be protected by GFCI. All GFCI units are equipped with a test switch so that the unit can be tested periodically to ensure continuous proper operation.

4-3.3 All electric service must be grounded. Receptacles installed on 15- and 20-amp branch circuits must be of the grounded type and should be effectively grounded. Testing meters are available that, when inserted into receptacles, will indicate proper grounding of the receptacle. Local electrical inspectors can be very helpful in explaining local codes in fire department training sessions. In addition to the grounding of receptacles, major appliances such as dishwashers, dryers, washing machines, etc., should be grounded externally to cold water piping. Garbage disposals also require external grounding.

4-3.4 Electrical main service coming into the dwelling should be inspected. Cables that are too close to trees, antennae, downspouts, gutters, or cables not securely attached to the building may present a life or fire hazard.

4-3.5 Other Common Electrical Hazards Found in the Home.

4-3.5.1 Heat buildup occurs in wiring when resistance to flow is experienced. Loose wire nuts or cable connections (especially in aluminum wiring), wiring run through doorways or under carpeting, and furniture or other heavy objects resting on wires can produce this condition.

4-3.5.2 Unusual wear exposing wiring can result from cables not properly secured, objects hanging on cables, or, as mentioned above, wiring run through doorways or under carpeting.

4-3.5.3 Dirty, poorly maintained electric motors or missing covers on junction boxes may eventually result in a short circuit and could result in a fire.

4-3.5.4 Extension cords (even though UL listed) may be too small for certain electrical loads, such as irons and air conditioners. Extension cords should never be used for permanent connections; they should only be for temporary use. If fire fighters are to provide worthwhile guidance to the homeowner, they should be trained to match the current-carrying capability of the extension cord with the current demand of the electrical loads connected to it.

4-3.5.5 "Octopus" fittings consist of excessive electrical devices connected to one outlet, causing excessive current flow with resultant heat buildup. This condition is especially prevalent when extension cords are joined in a series.

4-3.5.6 All frayed wiring must be replaced because it is unsafe and its breakdown is imminent.

4-3.5.7 To avoid possible ignition should a gas leak occur, electrical outlets or fuse panels should not be located adjacent to gas meters or gas diaphragms.

4-3.5.8 Appliances, fixtures, and wiring that are not listed by a testing laboratory should be discouraged.

4-4 Flammable Liquids.

4-4.1 General. Dwelling fires caused by flammable liquids usually result from the improper storage and use of flammable liquids. The properties of these materials also are generally misunderstood. Common areas of concern to fire fighters should include the following items.

4-4.2 Improper Storage and Dispensing Practices.

4-4.2.1 Flammable liquids such as gasoline should be stored only in listed safety cans of substantial design and construction of a type approved by the authority having jurisdiction. Glass jars, unapproved plastic containers, or open pails and buckets that may leak during pouring or break if struck or dropped should never be used. The handling and dispensing of flammable liquids should be done only in well-ventilated areas free from sources of ignition, and the container spout should provide a bonding between the dispensing container and the container being filled.

4-4.2.2 Storing excessive quantities of flammable liquids also creates a hazard; this practice should be discouraged. Excessive amounts of flammable liquids may be stored in basements or garages, especially during shortages of such materials. Even when stored in approved containers, exposure to heat may result in the escape of vapors through vent holes, etc. Flammable liquids should not be stored in heated basements or near potential sources of ignition. Devices using gasoline engines should be stored outside, or in unheated garages. Partly used cans of oil-based paint should be kept in metal lockers in tightly sealed cans to prevent vapors from escaping.

4-4.2.3 The use of flammable liquids as solvents for removing grease, oil, or paint is extremely dangerous. These practices should be discouraged. Most flammable liquids used in the home produce vapors heavier than air and will sink to the floor and disperse. If the vapors reach a source of ignition, even at a considerable distance, an explosion and fire may result. A light switch can produce a spark capable of igniting vapors.

4-4.2.4 Greasy or paint-soaked rags and brushes may also cause fire from spontaneous ignition. They should be cleaned after each use, disposed of safely, or stored in tightly closed metal containers.

4-4.3 Other Flammable Liquid Hazards.

4-4.3.1 Using flammable liquids in the home for dry cleaning purposes should be discouraged.

4-4.3.2 Smoking when using flammable liquids should be discouraged.

4-4.3.3 Using flammable liquids for starting fires in stoves or fireplaces should be emphasized as a dangerous practice.

4-4.3.4 Using flammable liquid charcoal starters should be restricted to products marketed specifically for that purpose. Dispensing these flammable liquids after ignition is achieved, whether live flame is noted or not, is extremely hazardous; flame may be transmitted to the container contents with a resultant ignition and pressure explosion.

4-5 Heating Systems and Appliances.

4-5.1 Types of heating systems vary in different climates. Dwellings built in recent years will usually have gas- or oil-fired furnaces, or electrical heating. Homes may also have coal or wood heating units. Room heaters and portable heaters are also common in some areas. Increased fuel costs have brought about an increase in the use of wood-burning appliances. A common hazard is storing combustible materials where they may be ignited by heat radiated or conducted by a furnace, stove, or other heating appliance. The area around any heating appliance must be kept free of combustibles. Heating units also need sufficient space around them to provide adequate ventilation for proper combustion. Flues and smoke pipes may constitute a hazard; both should be kept in good condition and should have adequate clearance from any combustibles. Smoke pipes should be kept as short as possible. If they are over 3 ft (1 m) in length, they must be supported by hangers. Flues should be cleaned annually and inspected for damage or holes. In addition, throughout the heating season, checks for creosote buildup in the flue pipe and chimney connected to coal- and wood-burning appliances should be made. When a buildup is evident, the system should be cleaned. Care should also be given to inspect chimneys and flues where they pass through attic areas. Where flues pass through partitions, they should have sufficient clearance or be protected by an approved, ventilated metal thimble. Steam pipes or steam-heating appliances, improperly spaced from wood surfaces, can result in lower ignition temperatures over long periods of exposure. In some cases, pyrolitic decomposition of the wood fibers has caused ignition temperatures as low as 150°F (65°C).

4-5.2 Types of Heating Systems.

4-5.2.1 Gas-Fueled Systems. Gas heating systems may be supplied by natural, manufactured, or liquefied petroleum gas. Piping should be of an approved type and in good condition; a hazard will result from loose connections or poor piping. The burner should be properly adjusted. A check should be made for any odor of gas. Where individual gas heaters are distributed throughout the home, a check should be made to see that they are properly secured and vented.

4-5.2.2 Oil-Fired Systems. Several types of heating devices use oil. Some homes with central heating have an oil burner to heat hot water which is then distributed to radiators or baseboard systems. Large oil tanks may be located in the basement and should be properly installed, with tight connections. A quick check will show if there are any leaks, or if the tank is unsecured. If there is a leak, sand should be spread to confine the leakage, or an emergency patch should be placed on the leak. Leaking or damaged tanks should be replaced by the homeowner immediately. In some climates, where heat is only occasionally required, small oil or kerosene heaters may be used. Condition of the flue pipe, tank, and security of the installation should be inspected. These devices should be mounted on metal trays to prevent overflow of liquid onto the floor.

4-5.2.3 Coal and Wood Furnaces. These solid fuel furnaces radiate a lot of heat. It is important that the flues have at least 18 in. (45 cm) of clearance from any combustible material. Solid fuel may also cause more damage to smoke pipes than other types of fuels. Some installations have covered pipes that should be periodically inspected. Where this covering is loose or missing, a fire may occur. Improper storage of fuel and/or ashes may result in a fire. Fuels should be stored in bins. Ashes should be placed in metal containers and removed from the dwelling.

4-5.2.4 Fireplaces. The use of factory-built fireplaces, fireplace stoves, and masonry fireplaces has increased both as heating devices and for enjoyment. Spark screens should always be provided for a fireplace, and dampers, if any, should be of a type that may be operated from outside the fireplace. Listed or approved factory-built fireplaces and fireplace stoves may be designed to be placed directly upon and immediately adjacent to combustible building construction. These installations should be strictly in accordance with the terms of the listing and the manufacturer's instructions. NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances*, should be followed. Masonry fireplaces should be checked to ensure that linings are free from cracks, and flues should be cleaned annually. Ashes should be placed in metal containers and removed from the dwelling.

4-5.3 Cooking Appliances and Venting Systems.

4-5.3.1 Generally, fire hazards in cooking appliances and venting systems are associated with poor housekeeping practices. When pointing out such deficiencies, tact is imperative. Unless an obvious accumulation of grease or residue is present, general statements regarding the extinguishment of grease fires should serve as a reminder.

4-5.3.2 Grease ducts and vented hoods should be inspected for buildup of grease. Filters should be inspected and the resident cautioned as to the dangers of fire transmittal and spread through these areas.

4-5.3.3 Electric ranges, wall-mounted ovens, and counter-mounted cooking units require a means of disconnection from the supplying electrical circuit. In freestanding household ranges, a separable connector or a plug and receptacle is sufficient. In wall-mounted ovens and counter-mounted cooking units or ranges without plugged receptacles, the circuit controlling the appliance should be well defined at the electrical panel.

4-5.3.4 Gas ranges should be equipped with an inline gas cut-off valve located at the appliance. Pilot lights and gas valves should be checked for leakage and proper burning characteristics.

4-5.3.5 Gas appliances designed for cooking should not be used to heat rooms.

4-5.3.6 Fire fighters should inform the occupants about the dangers and effects of careless cooking or, more popularly termed, "food on the stove" problems.

4-5.4 Other Heating Devices.

4-5.4.1 Gas heaters should be of an approved type. Gas appliances should display the American Gas Association (AGA) seal.

4-5.4.2 Portable electric heaters should be of an approved type and should be located away from combustibles. These devices should also be equipped with a tilt switch that causes the heater to shut off if it is overturned. Care should be exercised to avoid overloading electrical circuits.

4-5.4.3 Use of portable kerosene space heaters as supplements to residential heating systems has increased. These units require additional safety information and consideration by the occupant. Rules for safe operation of these devices should include:

(a) Use only clean kerosene. Do not use fuel oil or diesel fuel.

(b) Never use gasoline, naptha, paint thinners, alcohol, or other volatile fuels.

(c) Use only in well-ventilated rooms.

(d) Operate on level surfaces only, away from drafts and wind.

(e) Locate at least 3 ft (1 m) from furniture and other combustibles. Keep draperies and clothing away from the top of the heater.

(f) Do not move, handle, or service while hot or burning. Ironically, in many jurisdictions it is a code violation to use these heaters, but not a violation to own them. Fire fighters should be knowledgeable of state/local regulations, ordinances, and codes pertaining to portable kerosene heaters.

4-5.4.4 Charcoal should not be burned in confined areas or in other than approved devices.

4-5.4.5 Gas- and oil-fired water heaters and furnaces found in closets or other rooms should not have combustibles stored next to them.

4-5.4.6 Small electrical appliances such as toasters, coffee makers, televisions, and blenders, etc., should be disconnected from power sources when not actually in use.

4-6 Housekeeping, Storage, and Rubbish Hazards.

4-6.1 Unfortunately, homeowners' reluctance to throw anything away may result in quantities of old clothes, magazines, newspapers, rags, and junk being stored in the home. Since a collection of these items is unsightly, the homeowner will usually store them in the attic, basement, closet, garage, or around the furnace. These useless combustibles present a serious hazard, making it easier for a fire to start, and should be removed. Large quantities of trash and leaves around the home are also a hazard that may spread a fire to the house. If the community provides pickup of household trash, trash should be stored in metal containers with tight-fitting metal lids until removed. If household trash is burned on the premises by occupants, the place of burning, type of incinerator, and condition and use with respect to local burning regulations should be checked.

4-6.2 Garages, both attached and unattached, should be included in any dwelling inspection. Although unattached to the dwelling, fires in garages often represent exposure fire potential and afford many storage hazards.

4-6.3 During the course of the inspection, the fire fighters should ask about the use of furniture waxes and polishes, and especially about the storage of rags used to apply these products.

4-6.4 Use and storage of portable home barbecue grills should be restricted to the out-of-doors. Charcoal briquettes should always be allowed to cool naturally, and then be properly discarded. Charcoal should be stored in a dry area because damp or wet charcoal is sensitive to spontaneous heating once dried.

4-6.5 If the occupancy has a swimming pool, fire fighters should also note accessibility to and capacity of the pool for possible fire fighting use.

4-6.6 Home workshops often contain conditions that permit fire propagation. These areas should be checked for possible hazards during the inspection.

4-6.7 Inspection of the outside of the dwelling should be made to locate any rubbish accumulations, defective electrical equipment, flammable liquid storage, or other hazards.

4-6.8 Fire fighters should be prepared to direct the occupant to specific information on home fire extinguishers and fire detection systems that conform to nationally accepted standards.

4-7 Firesafety Precautions in Earthquake-Prone Areas.

4-7.1 Gas-fired hot water heaters should be secured against toppling by attaching them to the building walls at their midpoints by means of plumber's tape or braces nailed to the wall studs.

4-7.2 Flammable liquids should not be placed on high shelves that may allow the containers to fall and spill their contents on the floor.

4-7.3 The residents should be questioned to determine whether they know the location of the main gas and water shutoffs and whether they have the necessary tools to turn them off.

4-7.4 A short discussion should be conducted with the homeowner to determine whether emergency supplies of food and water are kept and whether the homeowner knows the proper actions to take during and immdiately after an earthquake.

Chapter 5 Life Safety Considerations

5-1 Exit and Escape Routes. One of the fire protection weaknesses that occurs in the average dwelling is lack of sufficient exits from all parts of the building. Rooms on the second or third story may be served by only an interior stairway; if a fire starts on the first floor, persons in upper-story rooms may become trapped. Fire fighters should explain the need for the occupant to determine at least two routes of escape from all rooms in the home. Particular attention should be directed to the windows in the dwelling that may be designated as secondary escape routes. Windows that are blocked by air conditioning units or too small or too high above the floor for quick egress from the room are a potential for trouble in the event of a fire. NFPA 101®, *Life Safety Code®*, requires that a window designated as an exit from a sleeping room provide an opening of at least 20 in. (50.8 cm) in width, 24 in. (61 cm) in height, and 5.7 sq ft (.53 sq m) of total area. The bottom of the opening must not be more than 44 in. (112 cm) above the floor. These requirements are waived if the sleeping room has two doors providing separate means of escape, or one door that leads directly to the outside.

5-2 Fire Exit Drill Plan.

5-2.1 The occupant should be encouraged to develop a fire exit drill program. In particular, members of the family should be instructed in how to escape from second-story windows, porches, and other parts of upper floors. Removal of windows and screens in emergencies and the directing of young children to escape routes are essential to a good home fire exit drill plan.

5-2.2 All persons should know the best route of escape from all parts of the home. A predetermined, safe meeting place should be selected so all family members can assemble in the event of evacuation.

5-3 Invalids/Children.

5-3.1 The use of invalid/children stickers and decals on the exterior of the dwelling is discouraged for the following reasons:

(a) The home may be targeted for burglaries and break-ins.

(b) The fire department has no guarantee that the stickers are valid for current residents.

(c) A false sense of security can be created for the occupants of the home.

(d) The homeowners may be led to believe that, rather than install smoke detectors and establish a home fire escape plan as a primary means of escape, they should rely on the fire department for rescue during a fire.

5-3.2 Listing dwellings with special fire fighting considerations such as invalids, etc., may be acceptable for inclusion in dispatch information. Fire fighters have an excellent opportunity to collect such data while on dwelling safety inspections. Permanent stickers or decals providing emergency telephone numbers, such as 911 information or fire emergency numbers, are an excellent public relations tool.

5-4 Smoke Detectors and Other Early Warning Devices.

5-4.1 The use of approved smoke detectors and other early warning devices cannot be overemphasized in dwelling inspections. Statistics have been compiled proving the worth of warning devices as life savers when combined with good escape planning practices. By law, many jurisdictions now require residential smoke detectors to be installed in all new construction and, in more and more cases, in existing structures. Fire fighters should be familiar with local laws and should be able to answer questions pertaining to the purchase, installation, and maintenance of these devices, such as:

(a) What kind, type of power supply, cost, and how many are necessary?

(b) Where should they be placed and how are they installed?

(c) How are they tested? What maintenance is necessary?

5-4.2 Installation of smoke detection devices in residential dwellings should be in accordance with NFPA 74, *Standard for Installation, Maintenance, and Use of Household Fire Warning Equipment*.

5-5 Residential Fast Response Sprinklers.

5-5.1 In the past few years, the rapid pace of technological change has dramatically impacted the fire protection community with the advent of approved residential sprinkler systems. The development of faster sensing elements for residential sprinklers results in the ability to detect fire at the earliest practical moment and provide for the immediate application of water for control or extinguishment. With the utilization of both metallic and nonmetallic piping in conjunction with the fast response sprinklers, an economical alternative to more traditional approaches to fire suppression is being implemented in many cities across the country.

5-5.2 Fire fighters engaged in dwelling inspections should be aware of the current technology in this area and be prepared to answer questions posed on the use and installation of residential sprinkler systems.

5-5.3 In dwellings where residential sprinkler systems have been installed, a thorough inspection of the system should be performed to ensure that sprinklers are not damaged or blocked and that all system components are operational.

Chapter 6 Dwelling Inspection Forms

6-1 General Information. In order to have a clear understanding of the types of fire hazards located in dwellings, and in order to ensure complete coverage of the community, a system of reports and records should be established for the dwelling survey program. If an existing fire inspection program for other properties is available, the system may be expanded to include the dwelling surveys. The information system may be as simple or as comprehensive as the local fire problem and situation dictates. The information needed includes the numbers and types of fire hazards discovered and locations inspected. The information collected should be gathered for specific reasons if it is to be meaningful: e.g., the number and type of fire hazards may be analyzed to determine the direction of public education efforts. The results of individual inspections should be retained carefully and held as confidential to the fire department. Specific information relative to an inspection at a particular location should not be released to news media, insurance agents, or commercial concerns, etc. Reports and inspection forms used in the program may be developed in the jurisdiction or obtained from other sources. Sample dwelling inspection forms are included in the Appendix. The report should be filled out completely and should follow a logical sequence from start to finish. The inspection report should be filled out in duplicate with the original given to the occupant, and the duplicate retained for department use in tabulating hazards located in the community. The retained portion may or may not identify the specific residence, depending on whether there is a concern regarding the report being classed as a public record, required to be made available to other persons upon request or subpoena.

Another useful item that can be employed in a dwelling inspection program is an introductory letter from the community's mayor, city manager, or equivalent high official recommending cooperation with the fire department. Every effort should be made to provide information and assistance with the installation of smoke detectors or residential sprinkler systems, and to establish an escape plan for the particular dwelling, along with encouragement to practice it regularly. The department may want to include such information during the dwelling survey (example included).

Chapter 7 Referenced Publications

7-1 The following documents or portions thereof are referenced within this guide and should be considered part of the recommendations of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.

7-1.1 NFPA Publications. National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

NFPA 70-1987, *National Electrical Code*

NFPA 74-1984, *Standard for the Installation,*

Maintenance, and Use of Household Fire Warning Equipment

NFPA *101*-1988, *Life Safety Code*

NFPA 211-1988, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances.*

Appendix A

Fire Safety Survey

D.C. Fire Department Fire Safety Education Program

Yes	*No*	*General*
____	____	Home has smoke detector
____	____	Smoke detector is in working order
____	____	Family has and practices an exit plan
____	____	House numbers are visible from street
		All Household Areas
____	____	Extension cords used for permanent wiring
____	____	Electrical cords in good shape
____	____	No overloaded outlets
____	____	Windows easily opened
____	____	Wastepaper properly disposed of
____	____	Household chemicals stored away from children
____	____	Matches out of reach of minors
____	____	Large ashtrays in every room
		Basement
____	____	Combustibles removed from heating areas
____	____	Filters on furnace clean and in good shape
____	____	Fuse box does not have pennies
____	____	Washer and dryer properly grounded
____	____	Clothes dryer lint collector clean
____	____	Basement door closed
		Kitchen
____	____	Combustibles removed from cooking areas
____	____	Small appliances unplugged when not in use
____	____	Kitchen hood vent clean and maintained

Yes	*No*	*Living Area*
____	____	Fireplace has proper screen and hearth
____	____	Chimney clean, ashes properly disposed of
		Attic
____	____	Clear of all combustible materials
____	____	Heating ducts properly maintained
		Garage
____	____	Solid core door between garage and residence
____	____	Power mower properly stored
____	____	Flammable liquids properly stored

Remarks: _____

_____

_____

_____

_____

With your consent, the Fire Safety Survey Team has made a Fire Safety Survey of your home. The items checked may cause a fire and are hazardous to you and your family. You are urged to correct these at once for your own safety. If all items have been checked "Yes," you are to be complimented on your personal fire prevention effort.

If you wish to discuss any hazard, or have any questions, please call the D.C. Fire Department, Fire Safety Education Center at 745-2347. Know what to do in case of emergency.

For All Emergencies Call "911"

Home Safety Survey Sheet

Check to see if any hazards exist in your home.

Yes	*No*	
_____	_____	No more than two appliances being used with outlet or extension cord.
_____	_____	Outlets that are not cracked or uncovered.
_____	_____	Extension cords used for permanent wiring.
_____	_____	Electrical cords not under rugs.
_____	_____	Small appliances unplugged when not in use.
_____	_____	Combustibles removed from cooking areas.
_____	_____	Electrical cords in good shape.
_____	_____	Wastepaper properly disposed of.
_____	_____	Household chemicals stored away from children.
_____	_____	Matches out of reach of minors.
_____	_____	Large ashtrays in every room.
_____	_____	Flammable liquids properly stored.
_____	_____	Home has a smoke detector.

The items checked "No" may cause a fire and are hazardous to you and your family. You are urged to correct these at once for your own safety.

"EVERYTOWN" FIRE DEPARTMENT

Home Inspection of number _____ St., Rd., Pl., Ave.

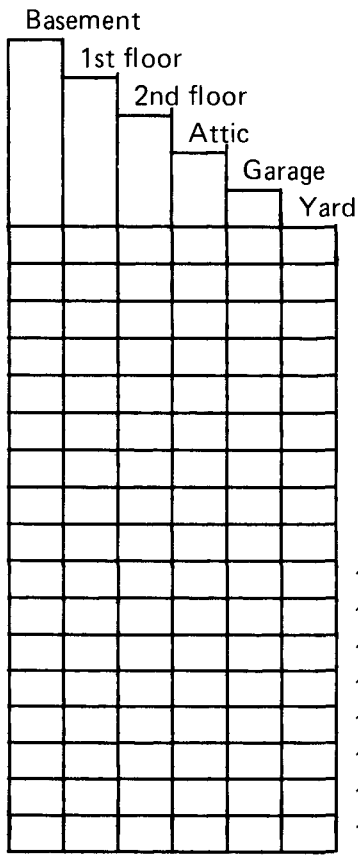
Dear Occupant:

With your consent, the undersigned fire department inspector has made a fire-safety inspection of your home. He has checked below those conditions that might start a fire and has left instructions on how to correct these fire hazards. YOU ARE URGED TO CORRECT THEM AT ONCE – please do not put it off. If you wish to discuss any hazard, please call the Fire Department – VA. 7-1313.

(signed)

John Doe, Fire Chief.

_____, 19_____



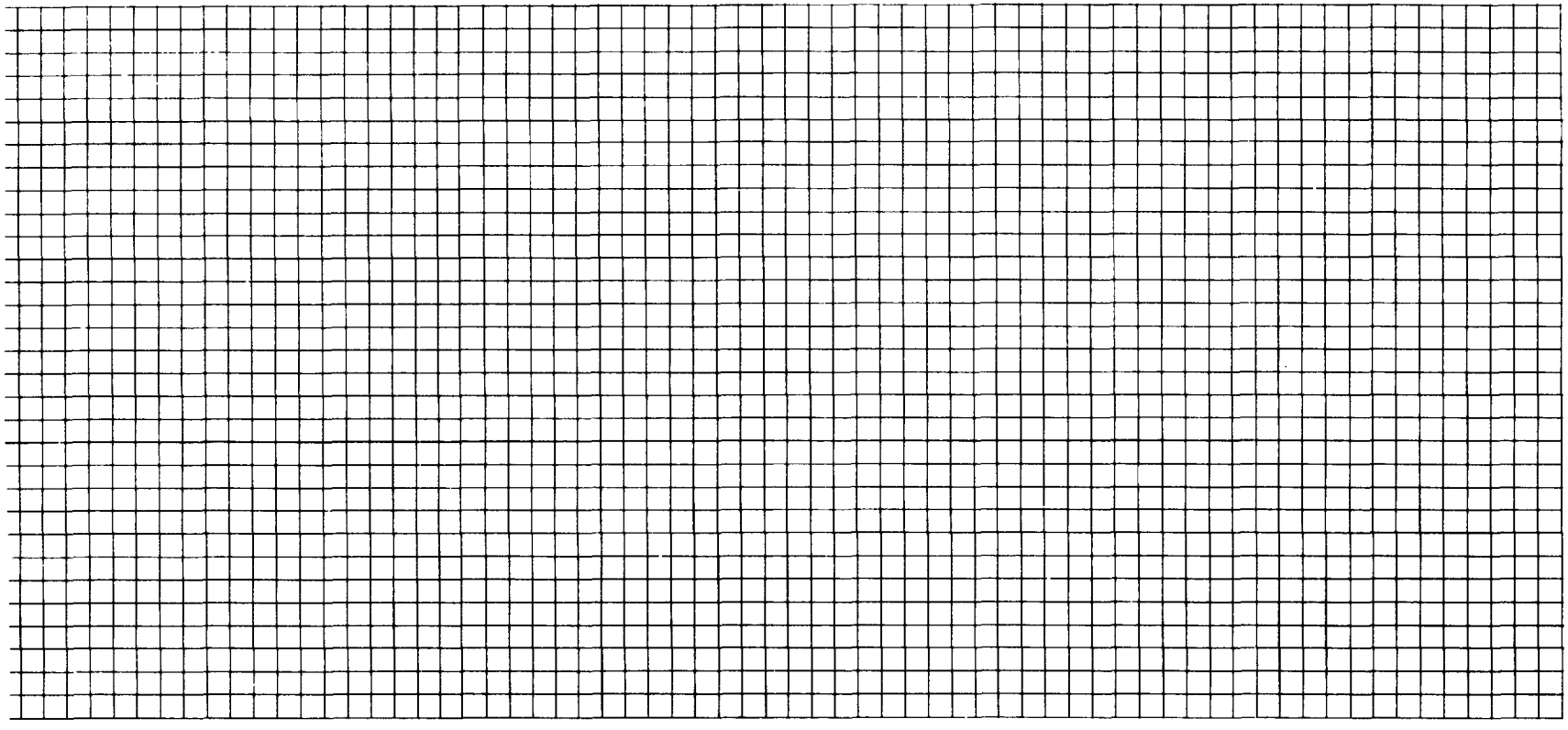
1. Rubbish and trash accumulations.
2. Ashes improperly handled.
3. Flammable liquids improperly stored.
4. Painting materials, oily rags, unsafe.
5. Storage or work areas congested, not fire-safe.
6. Combustibles too near heating devices.
7. Smokepipes and flues unsafely arranged.
8. Masonry chimneys unsafe.
9. Gas fueled devices improperly arranged.
10. Electrical circuit overloading, improper fuses.
11. Electric cords and motors unsafe.
12. TV & radio sets, poor arrangement.
13. Outbuildings and yards cleanup needed.
14. Building maintenance fire-safety.
15. Baby-sitter information.
16. Home fire extinguisher information.
17. NO DEFECTS NOTED. CONGRATULATIONS!

Type of heat used in home _____

Number of home occupants _____; number of invalids _____ on ____ floor.

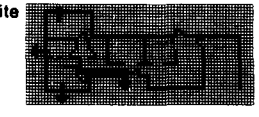
_____

Fire department inspector.



Floor Plan

1. Use the grid to draw a floor plan of each person's bedroom or to show the whole house. Sample floor plans are on the back page.
2. Show two exits. Write down your outside meeting place.



Discuss procedures with your family.

1. Sleep with the bedroom door closed. It will hold back deadly smoke while you escape.
2. Plan on your detector or some other signal to wake the family.
3. Test the door. If hot, use your alternate escape. If cool, brace your shoulder against the door and open it cautiously. Be ready to slam it if smoke or heat rush in.
4. Crawl in smoke. Hold your breath too.
5. Escape fast; don't stop to pack!
6. Choose a specific outdoor meeting spot so you can see that everyone is safe.
7. Assign someone to make sure nobody returns to the burning house — many die going back.
8. Call the fire department from a neighbor's phone.

Family Rehearsal

1. Everyone in bedrooms; doors closed.
2. One person sounds the alarm.
3. Each person tests his door.
4. Pretend it's hot; use alternate escape.
5. Everyone meet outdoors at an assigned spot.

Smoke Detectors Are Required by Law

Smoke detectors must be installed in all Montgomery County dwelling units by July 1, 1978. The following diagrams illustrate the minimum protection required by law. The "Smoke Detectors" section of the Montgomery County Code is printed on the reverse of this sheet.

Where to locate the basic smoke detector

The major threat from fire in a dwelling is at night when everyone is asleep. The principal threat to persons in sleeping areas comes from fires in the remainder of the house, therefore, basic smoke detector(s) are best located between the bedroom areas and the rest of the house. In homes with only one bedroom area on one floor, the basic smoke detector shall be located as shown in Figure 1.

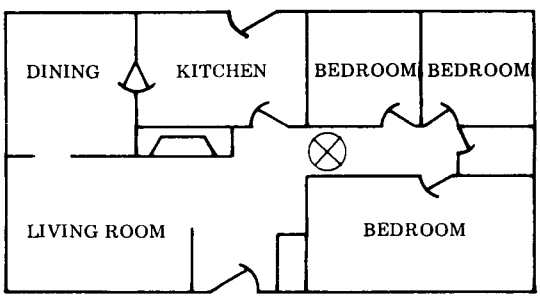


Figure 1. A basic smoke detector (indicated by cross) shall be located between the sleeping area and the rest of the house.

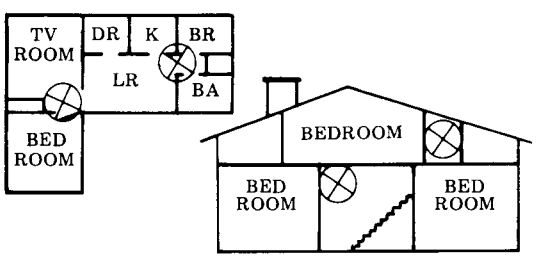


Figure 2. In homes with more than one sleeping area, a smoke detector (indicated by cross) should be provided to protect each.

Homes with more than one bedroom

In homes with more than one sleeping area or with bedrooms on more than one floor, more than one basic smoke detector will be needed as shown in Figure 2. Location of the smoke detector outside the bedrooms presupposes that the occupants sleep with their doors shut to provide a barrier to the smoke thus gaining additional seconds for escape.

Homes with stairways

Most homes have one or more stairs. Heat from fire will carry smoke and toxic gases upward into stairs. A smoke detector is needed at the head (top) of *each* stairs including the basement as shown in Figure 3. Stairs are usually a common path of exit and must be preserved as a possible escape route. Alternate escape routes should be planned and practiced during a fire drill at home. Note: A smoke detector is not required in stairs going to unoccupied areas, e.g. attic.

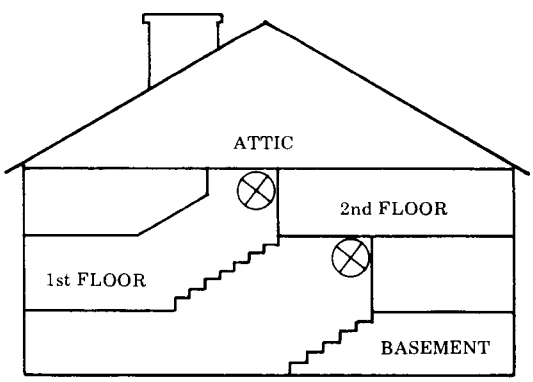


Figure 3. In homes with stairs a smoke detector (indicated by cross) should be at the head (top) of each.

IMPORTANT NOTE: Above examples illustrate minimum smoke detection requirements in residential units. Additional smoke detectors or an early warning fire detection system should be considered.

Smoke Detection

A. REQUIREMENT: It shall be the responsibility of the owner of each new and existing occupied dwelling unit to install smoke detectors in each such dwelling unit as hereinafter provided. Said smoke detectors shall be capable of sensing visible or invisible particles of combustion and providing a suitable audible alarm thereof; further, they shall be installed by July 1, 1978, in the manner hereinafter provided (unless any other provision of County, State or Federal law shall require installation before that date). Failure to install smoke detectors as and where required by said date will subject the property owner to the penalties set forth in Section 22-22 of the Fire Safety Code of Montgomery County.

B. LOCATION: (1) At least one smoke detector shall be installed to protect each sleeping area. A sleeping area is defined as the area or areas of the family living unit in which the bedrooms (or sleeping rooms) are located. Where bedrooms or rooms ordinarily used for sleeping are separated by other-use areas (such as kitchens or living rooms, but not bathrooms or closets), they shall be considered as separate sleeping areas for the purposes of this section.

(2) At least one smoke detector shall be installed at the head (top) of each stairway leading up to an occupied area in such a manner as to assure that rising smoke is not obstructed in reaching the detector and the detector intercepts rising smoke before it reaches the sleeping area.

C. ALTERNATIVE: As an alternative to self-contained smoke detectors, an approved fire detection system may be installed. Each fire detection system must be individually approved and a permit issued therefore by the Department of Fire and Rescue Services.

D. EQUIPMENT: All devices, combinations of devices, and equipment required herein are to be installed in conformance with the Building Code and this section, and approved by the Montgomery County Department of Fire and Rescue Services and listed by said Department for the purposes for which they are intended; said list may be subsequently amended by the Department of Fire and Rescue Services as necessary. Such approval shall be permanent unless the Director subsequently finds that the equipment is hazardous or unreliable, in which case, the Director may suspend or revoke approval. The Director may in any such case determine whether replacement of existing installation shall be required. Transfer to the inactive list shall not affect equipment approval.

E. INSTALLATION: In new residential dwellings, smoke detectors shall be wired directly (hard-wired) to the building's power supply. In existing dwellings within multi-family buildings of ten units or more, the detectors shall meet the multi-family building power source requirements of State law, or in the absence of State law, the requirements hereunder covering other existing dwellings. In other existing dwellings, it is preferred that smoke detectors be wired directly to the power supply, however, said detectors may be powered by self-monitored battery or operated in a plug-in outlet which is fitted with a plug restrainer device, provided the outlet is not controlled by any switch other than the main power supply.

F. CERTIFICATION AT CHANGE IN OCCUPANCY: After July 1, 1978, at every change of occupancy of every dwelling unit occasioned by or incidental to a sale, lease or sub-lease of said unit, it shall be the duty of the grantor thereof (i.e., the seller, lessor or sub-lessor, as the case may be) to certify, before occupancy, to the new occupant that all smoke detectors as required by this section (or other applicable laws) are installed and in proper working condition. Failure to comply with this subsection shall be punishable as set forth herein; provided, however, that this subsection shall not be construed to vitiate or render void any contract, lease or sub-lease subject hereto.

G. PERMITS AND FEES: No smoke detector or alternative system shall be directly connected (permantly wired) to the electrical system of the structure unless an electrical permit shall have first been obtained from the Department of Environmental Protection or the municipal electrical permit authority having jurisdiction. The County Executive is hereby authorized to adopt a fee schedule for the issuance of said permit which shall not exceed the cost of administration of this section; further, the County Executive is authorized to waive, partially or wholly, the fee requirement at his discretion, or to issue multiple permits under the payment of a single fee.

H. SUPPLEMENTAL STANDARDS: This section is intended to be used with and supplemented by the applicable provisions of the National Fire Protection Association Standards 72-E and 74, 1974 Editions, which are hereby incorporated herein; however, if there shall be any conflict between this statute and the said supplemental standards, this statute and any rules and regulations adopted pursuant thereto shall prevail.

NOTE: To reduce printing costs, title to the bill and certain other non-essential items have been deleted from this reprint. This bill was signed into law by the County Executive on September 14, 1976.

The National Fire Protection Association's pamphlet # 74, "Household Fire Warning Equipment," contains detailed information on smoke detectors. Copies are available from the Association at Batterymarch Park, Quincy, MA 02269

The Montgomery County Department of Fire and Rescue Services does not recommend specific manufacturers of smoke detectors, but does maintain a list of approved models.

To find out if a smoke detector you are considering is on the approved list, or if you have other questions, call the Division of Fire Prevention at 468-4153 or your local fire station (listed in the C & P phone directory)

Department of Fire-Rescue Services
Division of Fire Prevention
Montgomery County, Maryland

Index

FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

Mail to: Secretary, Standards Council
National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269

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Representing (Please indicate organization, company or self) Fire Marshals Assn. of North America

1. a) **Document Title:** Protective Signaling Systems **NFPA No. & Year** NFPA 72D

   b) **Section/Paragraph:** 2-7.1 (Exception)

2. **Proposal recommends: (Check one)**
   - ☐ new text
   - ☐ revised text
   - ☒ deleted text.

3. **Proposal (include proposed new or revised wording, or identification of wording to be deleted):**

   Delete exception.

4. **Statement of Problem and Substantiation for Proposal:**

   A properly installed and maintained system should be free of ground faults. The occurrence of one or more ground faults should be required to cause a "trouble" signal because it indicates a condition that could contribute to future malfunction of the system. Ground fault protection has been widely available on these systems for years and its cost is negligible. Requiring it on all systems will promote better installations, maintenance and reliability.

5. ☒ **This Proposal is original material.**
   ☐ **This Proposal is not original material; its source (if known) is as follows:** _____

(Note: Original material is considered to be the submitter's own idea based on or as a result of his own experience, thought, or research and, to the best of his knowledge, is not copied from another source.)

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