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REFRIGERATOR SAFETY DEVICES

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GOVERNMENT

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HEARING

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON

INTERSTATE AND FOREIGN COMMERCE

HOUSE OF REPRESENTATIVES

EIGHTY-EIGHTH CONGRESS

FIRST SESSION

ON

PROGRESS TO DATE IN ACHIEVING THE OBJECTIVES OF
PUBLIC LAW 930, 84TH CONGRESS

SEPTEMBER 23, 1963

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Committee on Interstate and Foreign Commerce



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REFRIGERATOR SAFETY DEVICES

MONDAY, SEPTEMBER 23, 1963

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON PUBLIC HEALTH AND SAFETY OF THE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to call, in room 1334, Longworth Building, Hon. Kenneth A. Roberts (chairman of the subcommittee) presiding.

Mr. ROBERTS. The Subcommittee on Public Health and Safety is meeting this morning for the purpose of developing information relative to the progress achieved to date toward eliminating, or at least reducing, a vexatious and tragic problem—deaths of children resulting from entrapment in household refrigerators.

Public Law 930 was enacted during the 84th Congress which, in effect, prohibits the shipment in interstate commerce of any household refrigerator unless such refrigerator is equipped with a safety device or devices meeting standards prescribed by the Secretary of Commerce which would enable a person trapped within the refrigerator to open the door easily from the inside. This legislation was the product of hearings held by this subcommittee on a bill which I introduced in 1955.

I might say that the Senate had considered this same type of legislation and it held hearings on the same bill. The House continued to hold hearings and, although we had at that time not much encouragement from anyone as to what this bill would do and the necessity for the bill, we continued to work on the problem and finally did successfully get a bill which passed the House, later passed the Senate, and became Public Law 930.

I recall that in those hearings we had one branch of the industry which really, I think, broke the opposition to the bill because of the fact that they were positive that they could build such a device into the refrigerator without in any way impairing the ability of the refrigerating unit to prevent spoilage.

Following the testimony of the company that offered to do this, the other members of the industry fell into line. I feel that this has been a good thing, not only for the public but for industry as well. I am very pleased that this bill was enacted in view of my firm conviction that it is a necessary and well conceived step toward eventual elimination of this problem.

Since some 7 years have now elapsed since enactment of Public Law 930, it seemed appropriate that the subcommittee inform itself of the progress made to date in achieving its objectives.

I think one of the problems that we are trying to reach today is the problem of the abandoned refrigerator. These boxes are well con-

structed and they last for years. It is a rather well-known fact that people desire to keep them in some form or another. Frequently, they are kept where access to them is readily available to children who continue to lose their lives because of the carelessness of people in abandoning these refrigerators. We are not rendering them safe for abandonment.

We are going to hear testimony today from witnesses who worked on this problem and who believe that they have come up with some type of solution that may well be picked up by the general public and that we will hope to eliminate some of these tragic deaths.

Legislation of this nature would be ineffective unless those representatives of industry, safety organizations, and government most directly concerned cooperate wholeheartedly in exchanging views and formulating an approach which reconciles, insofar as possible, the often conflicting factors of human safety, science, and economic cost to industry.

As chairman of this subcommittee, I hope that real progress has been achieved in implementing Public Law 930. At this point, I should like to insert the text of that law into the record.

(Public Law 84-930 follows:)

PUBLIC LAW 930—84th CONGRESS

CHAPTER 890—2d SESSION

H.R. 11969

AN ACT To require certain safety devices on household refrigerators shipped in interstate commerce.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be unlawful for any person to introduce or deliver for introduction into interstate commerce any household refrigerator manufactured on or after the date this section takes effect unless it is equipped with a device, enabling the door thereof to be opened from the inside, which conforms with standards prescribed pursuant to section 3.

SEC. 2. Any person who violates the first section of this Act shall be guilty of a misdemeanor and shall, upon conviction thereof, be subject to imprisonment for not more than one year, or a fine of not more than \$1,000, or both.

SEC. 3. The Secretary of Commerce shall prescribe and publish in the Federal Register commercial standards for devices which, when used in or on household refrigerators, will enable the doors thereof to be opened easily from the inside; and the standards first established under this section shall be so prescribed and published not later than one year after the date of the enactment of this Act.

SEC. 4. As used in this Act, the term "interstate commerce" includes commerce between one State, Territory, possession, the District of Columbia, or the Commonwealth of Puerto Rico and another State, Territory, possession, the District of Columbia, or the Commonwealth of Puerto Rico.

SEC. 5. This Act shall take effect on the date of its enactment, except that the first section of this Act shall take effect one year and 90 days after the date of publication of commercial standards first established under section 3 of this Act. In the event of a change in said commercial standards first established, a like period shall be allowed for compliance with said change in commercial standards.

Approved August 2, 1956.

Mr. ROBERTS. I also have a statement from the U.S. Department of Labor containing a copy of the guide that is promulgated by the Federal Safety Council, from the Bureau of Labor Standards. Also, a statement from the Department of Justice. These will go in the record.

(The documents referred to follow:)

U.S. DEPARTMENT OF LABOR,
BUREAU OF LABOR STANDARDS,
Washington, September 18, 1963.

HON. KENNETH A. ROBERTS,
Chairman, Subcommittee on Public Health and Safety, Committee on Interstate
and Foreign Commerce, House of Representatives, Washington, D. C.

DEAR MR. CHAIRMAN: The Federal Safety Council has developed a guide on positive precautionary measures that should be taken to prevent refrigerator entrapment. The guide was sent to all Washington agencies for their internal use. In addition, copies were forwarded to our over 100 field councils located throughout the United States, and to Bureau of Labor Standards field safety personnel for their use in Federal, State, and union contacts.

We are enclosing a copy of the guide which we would like to have made a part of the hearing record. We do not plan to appear as a witness as we feel this statement and exhibit will adequately reflect our activities.

Sincerely yours,

A. W. MOTLEY, Director.

FEDERAL SAFETY COUNCIL,
Washington, D.C., March 1963.

SAFETY GUIDE FOR PREVENTION OF REFRIGERATOR ENTRAPMENT

1. The Standards Division of the Federal Safety Council has recently completed a comprehensive study and review of the safety problem of accidental entrapment and suffocation of children in refrigerators and deep freezers which are not in use.

2. In the pursuit of this study, the Standards Division gave consideration to the implications in Public Law 930, 84th Congress, approved August 2, 1956; to the implications in various State laws dealing with the specific problem; to safety measures advocated in national safety programming; and to measures currently in effect in some executive departments.

3. Other related matters considered in the study were:

(a) The results of the child behavior studies of 1957 and 1961. These studies, "Behavior of Young Children Under Conditions Simulating Entrapment in Refrigerators," April 16, 1957, and "The Effects of a Luminous Door Marker on Escape From Refrigerators," August 25, 1961, were prepared by the Children's Bureau of the Department of Health, Education, and Welfare, and the National Bureau of Standards, U.S. Department of Commerce, with the cooperation of the National Electrical Manufacturers Association.

(b) A press release and coverage by Dr. Leroy E. Burney, Surgeon General, Public Health Service, May 8, 1959, warning that precautionary actions should be taken with all refrigerators, including the newer types equipped with safety door releases.

(c) The position taken by the Federal Trade Commission relative to advertising claims of safety benefits in the new safety doors.

4. As a product of this study and review, the Council finds:

(a) That positive precautionary measures should be taken with all units temporarily or permanently taken out of service in their refrigerative function. This is viewed as particularly significant to agencies having custodial responsibility for vacant housing.

(b) That in view of the limited safety benefits disclosed in the child behavior tests, positive precautionary measures should be taken with the new "push open" door type refrigerators.

5. The Council therefore recommends that one of the following safety measures be taken where a unit is to be taken out of service:

(a) *Completely remove doors.*—This precaution is seen as positive in eliminating the hazard of accidental entrapment and suffocation, and should be taken in all cases where the unit is discarded and not to be used again in its refrigerative function.

(b) *Secure with metal strapping.*—This should be applied with hand-operated baling equipment to insure a tamperproof seal. Use of "wire or stout rope" is not recommended.

(c) *Toggle and plate device.*—This device has been demonstrated to be adequate protection on units; the locking design will allow easy installation. Its use has the advantage of simplicity and will allow the door to swing freely without locking accidentally. It also permits inspection of the interior. This is viewed as helpful in cases of vacant housing which is subject to inspection from time to time by prospective tenants, or maintenance personnel. (Attached is a diagram demonstrating the installation and use of the toggle and plate device.)

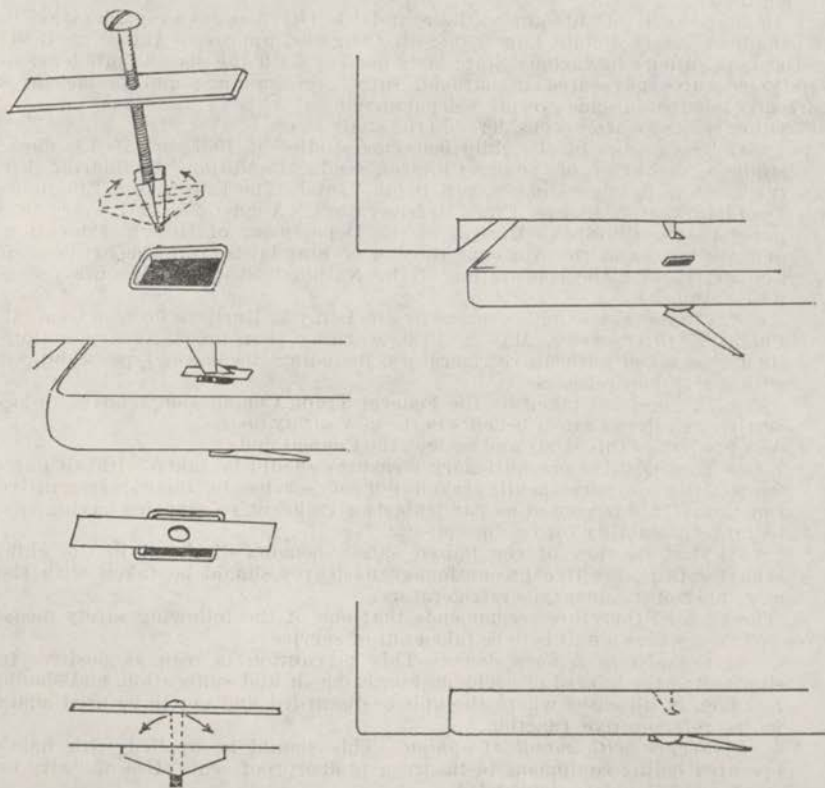
(d) *Lock with padlock.*—In rare cases where handles are so constructed as to receive a padlock, this action would be adequate.

(e) *Metal or wood blocking.*—In those cases where the removal of latch, magnetic plate, or other locking feature, will leave screw holes exposed, the following action is recommended: attach a metal or wooden block utilizing the exposed screw holes. The block to be of sufficient thickness so as to prevent the door gasket from coming in contact with the face of the cabinet and closing off air to the inside. In some instances, longer screws may have to be employed or the block countersunk to accommodate the added thickness.

6. The Council feels that these are the only foolproof precautionary measures that are available to date.

If anyone has an idea, or a device, that will provide for complete child protection against refrigerator entrapment, submit it to the Federal Safety Council, U.S. Department of Labor, Washington, D.C.

7. Private citizens, manufacturers, dealers, and Federal and State agencies owning refrigerators and deep freezers should check State, municipal, and local laws and regulations concerning the abandonment, storage, or "junking" of refrigerator units.



U.S. DEPARTMENT OF JUSTICE,
OFFICE OF THE DEPUTY ATTORNEY GENERAL,
Washington, D.C., September 20, 1963.

HON. KENNETH A. ROBERTS,
*Chairman, Subcommittee on Public Health and Safety,
Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: Although we have advised Mr. Williamson that no witness will appear for the Department of Justice at the hearings to be conducted by the subcommittee to receive a progress report on the operation of Public Law 84-930, relating to safety devices on household refrigerators, I should like to report that no violations of this act have as yet been reported to the FBI and no investigations have been conducted.

I trust this information will be of assistance to the subcommittee.

Sincerely yours,

NICHOLAS DEB. KATZENBACH,
Deputy Attorney General.

Mr. ROBERTS. We will at this time call Dr. A. T. McPherson, special assistant to the Director of the National Bureau of Standards, Department of Commerce, Washington, D.C.

Doctor, it is a real pleasure to welcome you again to our subcommittee. I have not seen you for about 7 years but I know of the fine work you have done in this field and we are deeply gratefully for the efforts that you have made.

I think that you carried out the intent of the Congress as spelled out in the report and in the law itself, in the best possible manner. We are deeply grateful for the fact you are here today and are filing a statement of the progress that is being made on this safety device.

STATEMENTS OF DR. A. T. McPHERSON, SPECIAL ASSISTANT TO THE
DIRECTOR, AND ROBERT WYLY, NATIONAL BUREAU OF STAND-
ARDS, DEPARTMENT OF COMMERCE

Dr. McPHERSON. Thank you, Mr. Chairman. I am pleased to give you a progress report on Public Law 84-930 dealing with safety standards for refrigerator doors.

A "Standard for Devices To Permit the Opening of Refrigerator Doors From the Inside" was promulgated by the Secretary of Commerce on August 1, 1957, pursuant to the provisions of Public Law 84-930. That law makes it unlawful for any person to introduced in interstate commerce a refrigerator unless it is equipped with a safety device enabling the door to be opened from the inside, which meets the standards prescribed by the Secretary of Commerce.

The standard prescribed was based on an investigation conducted jointly by the Children's Bureau and the National Bureau of Standards with funds in the amount of \$25,000 provided by the National Electrical Manufacturers Association. In this investigation, a study was made of the behavior of 201 children of ages 3 to 5 when entrapped in an enclosure specially designed and equipped to permit the children to be observed in total darkness and records of movements and sounds to be made by means of infrared motion pictures and sound recordings. These records and other data were reviewed by a joint committee of Government and industry representatives who recommended requirements for the standard to the Secretary of Commerce.

Based upon these recommendations, the Secretary of Commerce promulgated a standard which was published in the Federal Register on August 1, 1957.

These requirements, in brief, provide that refrigerators shall be designed so that the door can be opened by a force not to exceed 15 pounds, applied to the leading edge, or by means of a door knob. A simulated-use test is included in this standard which requires the release devices to meet these requirements during and after 300,000 openings and closings of the door.

The standard, as published, provides that any person wishing to propose a change shall submit it to the Director of the National Bureau of Standards who shall secure advice and consultation from public and private sources, particularly the refrigerator manufacturing industry and the Children's Bureau, and shall make a recommendation to the Secretary of Commerce.

The only proposal within the scope of Public Law 84-930 which has been made to date relates to the installation of a luminous marker to indicate the leading edge of the door. A special committee appointed by the Director to consider this proposal reported that there was not sufficient evidence to determine its merit.

Accordingly, a special investigation was conducted under the joint direction of the Children's Bureau and the National Bureau of Standards with funds provided by the National Electrical Manufacturers Association and the National Bureau of Standards. In this investigation, 202 children of ages 3 to 5 were subjected to entrapment in an enclosure simulating a child's playhouse. An interior luminous marker was placed on the leading edge of the door for half of the children and no marker for the other half. Observations and records of the children's behavior were made as in the earlier investigation. The difference between the tests made with and without the luminous marker was too small to be significant, and it was concluded that there would be no advantage in revising the standard to call for the use of the luminous marker.

It should be emphasized that the purpose of these two investigations was primarily to observe the behavior of children. Of the 202 subjects that were tested in the second investigation, 60 percent released themselves within 10 minutes; 31 percent were released early because they became upset; and 9 percent were released after 10 minutes because they had not released themselves. Under real life conditions, some of the children who were released early would probably have escaped through their own efforts.

The National Bureau of Standards has taken continuing interest in the adequacy of the standard and has considered possible improvements that have been suggested by members of its staff and by others. To date, none of the suggestions that have been made, which come under the scope of Public Law 84-930, appear to justify amending the standard.

Continuing research within the industry has resulted in improvements in the performance of release devices, particularly as evidenced by the development of the magnetic gasket which will permit the opening of a refrigerator door by a force well within that specified by the standard.

The Underwriters Laboratories provide an inspection and certification service whereby manufacturers may assure themselves of compliance with the standard. This service is in addition to the usual inspection for electrical safety, and is provided when requested by the

manufacturer. The Underwriters Laboratories "Electrical Appliance and Utilization List" of May 1963 shows that a number of models of several different makes of household refrigerators have been so inspected and certified.

Public Law 84-930 does not specifically assign any enforcement or regulatory responsibility to the Secretary of Commerce. We understand that when criminal statutes are silent in regard to enforcement, the Department of Justice retains general investigative and enforcement responsibilities. However, from observations on refrigerators on the local market and discussions with representatives of industry, there is no reason to think that the law is being violated.

Further, information based on contacts with the Refrigeration Service Engineer Society which maintains statistics regarding fatal entrapments indicates that there are no records of casualties with refrigerators manufactured after the law became effective.

That concludes my statement, Mr. Chairman.

Mr. ROBERTS. Thank you, Dr. McPherson.

The standard you referred to will be made part of the record.

(The document referred to follows:)

[Reprinted from the Federal Register, Aug. 1, 1957]

TITLE 15—COMMERCE AND FOREIGN TRADE

CHAPTER II—NATIONAL BUREAU OF STANDARDS, DEPARTMENT OF COMMERCE

SUBCHAPTER F—STANDARDS FOR SAFETY DEVICES

PART 260—STANDARD FOR DEVICES TO PERMIT THE OPENING OF HOUSEHOLD REFRIGERATOR DOORS FROM THE INSIDE

Pursuant to the provisions of section 3 of the act of August 2, 1956, "To require certain safety devices on household refrigerators shipped in interstate commerce," the following commercial standards are prescribed:

Sec.

260.1 Definitions.

260.2 Scope and application.

260.3 General requirements.

260.4 Detailed requirements.

260.5 Tests.

260.6 Provision for changes in the standard.

AUTHORITY: §§ 260.1 to 260.6 issued under sec. 3, 70 Stat. 953; 15 U.S.C. 1213.

§ 260.1 *Definitions.* As used in this standard, unless the context specifically states otherwise:

(a) The term "act" means Public Law 930, 84th Congress, 2d session, H.R. 11969.

(b) The term "device" means the mechanism or the means provided for enabling the doors of household refrigerators to be opened from the inside.

(c) The term "effective date" means the date under the provisions of the act after which all household refrigerators manufactured and introduced or delivered for introduction into interstate commerce must comply with this standard. This date is October 30, 1958.

(d) The term "household refrigerator" means a cabinet or any part of a cabinet designed for the storage of food at temperatures above 32° F., having a source of refrigeration and intended for household use.

(e) The term "opened" as applied to a refrigerator door means to effect release of the latching mechanism so that a trapped child would have to apply little or no further effort in order to escape.

(f) The term "shelving" means any shelf, basket, drawer, or baffle which can be readily removed from the refrigerator without the use of tools.

§ 260.2 *Scope and application.* This standard shall apply to devices furnished with household refrigerators manufactured and introduced or delivered for introduction into interstate commerce after the effective date which enable such

refrigerators to be opened from the inside. The requirements of this standard shall apply to household refrigerators in their normal operating position only. The releasing feature(s) of the device shall be accessible from all spaces which (a) are bounded by interior walls or shelving, (b) are directly accessible when the exterior hinged door(s) is (are) opened, and (c) have a minimum dimension of 8 inches or more and a volume of two cubic feet or more either with all shelving in place or as the result of the removal or the rearrangement of any or all of the shelving.

§ 260.3 *General requirements.* Household refrigerators shall be equipped with a device enabling the doors thereof to be opened easily from the inside, either by the application of an outwardly directed force to the inside of the door, or by the rotation of a knob similar to a conventional doorknob. The device shall not render the refrigerator unsatisfactory for the preservation of food under any or all normal conditions of use.

§ 260.4 *Detailed requirements—(a) Releasing forces.* As determined by the tests called for in § 260.5, the device (1) shall permit the refrigerator door to be opened on the application of a force equivalent to one which, if directed perpendicularly to the plane of the door and applied anywhere along the latch edge of the inside of the closed door, shall not exceed 15 pounds, (2) shall permit the refrigerator door to be opened on the application of clockwise or counterclockwise turning moment of not more than 5 in.-lb. to a knob on the door through an angle of rotation of 45° ($\pm 15^\circ$) in either direction, or (3) shall function automatically to permit the door to be opened with a force of 15 pounds or less applied as described in subparagraph (1) of this paragraph whenever space(s) exist or is (are) created with dimensions and volumes exceeding the dimensions and volumes imposed by § 260.2.

(b) *Description and location of knob(s).* The knob(s) shall resemble a conventional doorknob in shape and size, and shall be mounted near the latch side of the door extending into the cabinet at least $\frac{1}{4}$ inch beyond any inner door surface within a six-inch radius of the knob center. The knob(s) shall be mounted in such a manner that there is a minimum of $\frac{3}{4}$ inch clearance between the inner periphery of the knob(s) and adjacent inner door surfaces. The knob(s) shall be located so as to provide the accessibility required by § 260.2.

(c) *Wear.* The device shall comply with the requirements of paragraph (a) of this section after 300,000 cycles of operation of the door as determined by the tests called for in § 260.5.

(d) *Protection against adverse effects from spillage, cleaning defrosting, and condensation.* Devices shall be designed so that spillage of foods or beverages cleaning or defrosting in accordance with manufacturer's recommendations, or normal condensation will not so adversely affect the operation of the device as to result in its failure to meet the requirements of paragraph (a) of this section, as determined by the tests called for in § 260.5.

(e) *Devices which permit door to be opened as a result of forces or turning moments applied to movable components inside the refrigerator.* Those components of a device upon which the safety features of the device depend shall not break, crack, permanently deform, nor show other visible damage when subjected to forces and moments called for in the tests under § 260.5 (c). The requirements of paragraph (a) of this section, shall be satisfied after the device has been subjected to the tests under § 260.5 (c).

(f) *Power supply.* The device shall operate in accordance with the requirements of this standard with the electric, gas, or other fuel supply either on or off.

§ 260.5 *Tests.* It is the intent of this standard that where tests are not specified, the general and detailed requirements shall be checked by inspection, simple measurement, and by consideration of pertinent standard commercial practices. Compliance with requirements of § 260.4 (a), (c), (d) and (e) shall be checked with the aid of the following tests:

(a) *Test for releasing force on door.* The force measurement shall be made by means of a force gage with a calibrated accuracy within ± 0.3 pound when measuring a force of 15 pounds. The dial of the gage shall be graduated with finest divisions not exceeding 0.2 pound, and the full-scale range shall not exceed 30 pounds. Measurements shall be made at three points on the door near the inside latch edge—one point near the top of the interior space created by removal of all shelving, one point near the bottom, and one point midway between these two points. The requirements of § 260.4 (a) (1) shall be satisfied.

(b) *Test for knob torque.* The measurement of the turning moment required to operate the knob release shall be made with a torque gage adapted for

attachment to the knob or knob shaft. The gage shall have a calibrated accuracy within ± 0.10 in.-lb. when measuring a moment of 5 in.-lb. The finest graduations on the dial of the gage shall correspond to a moment increment not greater than 0.10 in.-lb. and the full-scale range shall not exceed 10 in.-lb. in each direction from the null reading. The turning moment shall be applied so as to rotate the knob the full amount required for release, in both a clockwise and a counterclockwise direction. The angle of rotation required for release shall be checked by means of an angle gage, adapted to measure the angle of rotation about the longitudinal axis of the knob shaft. The gage shall have a calibrated accuracy within $\pm 1^\circ$ at an angle of 45° , and the finest divisions shall not exceed 1° . The requirements of § 260.4(a) (2) shall be satisfied.

(c) *Tests for strength of device components which affect the safety features of the device.* These tests shall apply only to devices which permit the door to be opened as a result of forces or turning moments applied to movable components inside the refrigerator.

A turning moment of 20 in.-lb. shall be applied for 50 successive operations in a clockwise direction, followed by 50 successive similar operations in a counterclockwise direction, to components designed to permit the door to be opened as a result of the application of a turning moment to them. The turning moment shall be applied to the outer periphery of the component provided. The gage used for registering the moment applied shall have a calibrated accuracy within ± 0.4 in.-lb. when measuring a moment of 20 in.-lb. The finest graduations on the dial of the gage shall correspond to a moment increment not greater than 0.4 in.-lb. and the full-scale range of the gage shall not exceed 40 in.-lb. in each direction from the null reading. The turning moment applied in each operation shall be applied for a period of time sufficient for the component to come to rest after completing the extent of movement for which designed. A pushing force of 20 pounds shall be applied for 50 successive operations, followed, if applicable, by 50 successive similar operations with a pulling force, to components designed to permit the door to be opened as a result of the application of a force to them. Areas which may be, in service, subjected to pushing or pulling forces which create maximum stresses, as for example, points on the outer periphery of components designed to transmit a turning moment, or unsupported portions of members or areas designed for transmitting a force, shall be subjected to test. The gage used for registering the force applied shall have a calibrated accuracy within ± 0.4 pound when measuring a force of 20 pounds. The finest graduations on the dial of the gage shall correspond to a force not in excess of 0.4 pound and the full-scale range shall not exceed 40 pounds.

Upon being subjected to the tests in this paragraph, no device component on which the safety features of the device depend shall break, crack, permanently deform, or show other visible damage. The device must satisfy the requirements of § 260.4 (a) after being subjected to the tests in this paragraph.

(d) *Simulated use test.* Tests shall be conducted on the completely assembled refrigerator in its normal operating position to determine that the release device complies with the requirements of § 260.4 during and after 300,000 cycles of door operation, and following exposure to spillage of foods and beverages, to cleaning and defrosting in accordance with manufacturer's recommendations, and to condensation. The equipment provided for operating the door shall open the door sufficiently on each cycle to assure a complete cycle of operation for the latch mechanism.

§ 260.6 *Provision for changes in the standard.* Section 5 of the act provides for the possibility of changes in the commercial standard first established pursuant to section 3 of the act and allows a period of one year and ninety days for compliance with such changes after they are published. Any person wishing to propose a change in this commercial standard shall submit to the Director, National Bureau of Standards, United States Department of Commerce, Washington 25, D.C., the proposed change. Before a change is recommended, the Director, National Bureau of Standards, shall secure advice and consultation from public or private sources including particularly the household refrigerator manufacturing industry and the Children's Bureau of the Department of Health, Education, and Welfare, and shall then forward such proposal with his recommendation to the Secretary of Commerce for such action as the Secretary deems appropriate.

The standards prescribed herein shall become effective upon publication in the Federal Register.

A. V. ASTIN,

Director, National Bureau of Standards.

Approved: July 26, 1957.

SINCLAIR WEEKS,

Secretary of Commerce.

Mr. ROBERTS. Now prior to the enactment of the law, do you remember about how many lives we were losing with the old-type refrigerator a year? Do you have any estimate?

Dr. McPHERSON. I didn't understand the question.

Mr. ROBERTS. Do you have any knowledge as to how many children we were losing in lte old-type refrigerators prior to the enactment of Public Law 84-930?

Dr. McPHERSON. It is reported that there were 11 in 1954, 15 in 1959, 6 in 1960, but 25 in 1961.

We do not ourselves maintain statistics; we are dependent on published information. I think perhaps the Public Health Service can provide accurate statistics on the subject.

Mr. ROBERTS. So that our problem now relates mainly to the abandonment of refrigerators or the use of a refrigerator that was manufactured prior to the passage of this law; is that correct?

Dr. McPHERSON. Yes, sir.

Mr. ROBERTS. I have been wondering if you have any information on whether or not any deaths have resulted from the home freezer or the walk-in type refrigerator that is used commercially.

Dr. McPHERSON. I do not have that information, sir. I think perhaps the industry or the Public Health Service can provide it.

Mr. ROBERTS. Is it not true that this same magnetic device has been generally adopted by the industry in the freezer-type refrigerator, the large type?

Dr. McPHERSON. I understand that that is so, sir.

Mr. ROBERTS. From my personal observation at various times, I have noted that it provides for the opening by this magnetic device, so that without requiring them to comply with the law many segments of the industry have gone ahead and put this device on the large freezer-type refrigerator.

Again I want to thank you, Dr. McPherson, for the splendid job that has been done under your direction at the Bureau of Standards, and I compliment you on this work and on the very deep and devoted effort that you have made in this connection.

Mr. Nelsen.

Mr. NELSEN. No questions; thank you.

Mr. ROBERTS. Mr. Rogers.

Mr. ROGERS of Florida. Thank you, Mr. Chairman.

Dr. McPherson, I, too, want to join the chairman in complimenting you and your colleagues for your work in this area.

I am certain you should take satisfaction that there have been no deaths reported at least since the law has been effective, at least on those machines which have come out since the law has been passed or changed.

Now how many manufacturers are there of refrigerators, would you say? You may not know the exact number.

Dr. McPHERSON. I am sorry, sir. I can't answer that, but there is in the room a representative of the National Electrical Manufacturers Association who can give the information.

Mr. ROGERS of Florida. Maybe he can just give us this information, if he does have it.

Mr. SMITH. Seventeen members who belong to NEMA, and I am sure there are three or four others. There are 20, I would say.

Mr. ROGERS of Florida. And your name?

Mr. SMITH. R. D. Smith, of NEMA.

Mr. ROGERS of Florida. Thank you. Have any members of your organization ever gone to the manufacturers to check with them on their placing of the necessary safety requirements on the refrigerators?

Dr. McPHERSON. We have worked through the National Electrical Manufacturers Association. We have not checked with the individual manufacturers but we have observed the new models of refrigerators on the local market.

Mr. ROGERS of Florida. Would this not be a very easy thing to have someone from the Department to check with the major manufacturers which would practically be the entire source, I would think, of refrigerators?

Dr. McPHERSON. We could do that, sir.

Mr. ROGERS of Florida. I would think this would not be too expensive, not that they are not doing it, I am sure they must be, but I would think rather than to rely upon perhaps the Justice Department doing it unless I think a violation were called to their attention they probably would not make a prior inspection.

I just wondered, Mr. Chairman, whether it would not be advisable, I think, perhaps this committee might be interested, for this committee to have you have someone check and let us know if all of the major manufacturers are, in fact, complying with the law, as I feel they probably are.

Mr. ROBERTS. Will the gentleman yield?

Mr. ROGERS of Florida. Yes.

Mr. ROBERTS. I think it would be wise also and I think it would be interesting if in that report you would include information as to how many manufacturers are also complying with this standard in the homefreezer type of refrigerator. I think that would be very interesting to the committee.

Dr. McPHERSON. We shall be very glad to make that check and report to this committee, sir.

Mr. ROBERTS. Thank you.

(The information requested follows:)

INVESTIGATION OF COMPLIANCE OF HOUSEHOLD REFRIGERATORS AND HOME-FREEZERS WITH THE STANDARD PROMULGATED PURSUANT TO PUBLIC LAW 84-930 REGARDING THE FORCE REQUIRED TO OPEN THE DOORS

A. INTRODUCTION

1. *Request for the study*

The Subcommittee on Public Health and Safety of the House of Representatives' Committee on Interstate and Foreign Commerce (hearing on September 23, 1963) requested the National Bureau of Standards to ascertain (a) whether household refrigerators in current production comply with the requirement of the standard promulgated pursuant to Public Law 84-930 as regards the force (not to exceed 15 pounds) necessary to open the door from the inside, and (b) whether homefreezers in current production comply with the 15-pound force requirement of the standard now applicable only to household refrigerators.

2. *Methods of obtaining information*

The desired information was obtained in two ways: (a) by letter inquiry to all known manufacturers of household refrigerators and homefreezers in the United States, and (b) by making measurements on a considerable number of 1963 models of refrigerators and freezers offered for sale in Washington.

3. Summary of findings

The results of a questionnaire circulated to manufacturers indicated that all of the single-door household refrigerators and the refrigerator sections of two-door household refrigerator-freezer combination units complied with the force requirements of the standard. The measurements made on refrigerators and freezers offered for sale in Washington confirmed this indication except for two refrigerators provided with mechanical latches which required forces of 15.1 and 15.3 pounds, respectively. The results also indicated that most of the freezer doors of combination household units and upright homefreezers equipped with magnetic closures complied with the force requirements of the standard for refrigerators, while a much smaller proportion complied where mechanical closures were used. Most of the chest-type homefreezers complied.

B. REPORTS BY MANUFACTURERS OF HOUSEHOLD REFRIGERATORS AND HOMEFREEZERS

A letter of inquiry (exhibit A) was addressed to all manufacturers of household refrigerators and homefreezers listed in trade directories. The list included all of the 12 members of the National Electrical Manufacturers Association and 20 others. Responses were received from all except one who had apparently gone out of business. A summary of the replies is shown as exhibit B.

1. Household refrigerators

In response to the inquiry, all firms currently producing household refrigerators reported that the refrigerators of their manufacture complied with the requirements set up under Public Law 84-930. While the means of assuring compliance was not requested, some of the manufacturers reported that their refrigerators were being checked regularly by Underwriters' Laboratories, and others indicated that they made regular tests of their own production. Still others called attention to their use of magnetic gaskets which enable doors to be opened with a force considerably below the 15-pound limit set in the standard.

2. Homefreezers

With regard to homefreezers, 10 firms reported that all homefreezers of their manufacture complied with the 15-pound limit. Where information was furnished separately as to chest or upright models, exhibit B indicates that most of the chest-type freezers permitted opening within the 15-pound limit, since they were provided with counterbalanced lids.

Problems in design and construction of upright homefreezers.—With the upright models of homefreezers, three problems are encountered: (1) some models are provided with drawers or compartments having an inner door in which a child might become entrapped in such a way that he could not reach the outer door, (2) some models are provided with rollout drawers or compartments constructed so that the bottom and the door are effectively integral, thus rendering ineffective any force directed at the door by an entrapped child, and (3) manufacturers report that with very large upright freezers of 21 to 25 cubic feet capacity, it is not possible to seal the door adequately with a force as small as 15 pounds.

C. FIELD MEASUREMENTS ON HOUSEHOLD REFRIGERATORS AND HOMEFREEZERS

Through the courtesy of the Electric Institute of Washington and of local distributors and dealers, measurements were made by the National Bureau of Standards on 62 different household refrigerators and homefreezers which included most of the makes and models offered for sale in the Washington area. The results of these measurements are summarized in exhibit C for refrigerators and exhibit D for freezers.

1. Household refrigerators

The 37 household refrigerators on which measurements were made included 11 single-door models and 26 combination two-door refrigerator-freezer models. All but eight of these were equipped with either a magnetic gasket or a magnetic latch which permitted the door to the refrigerator section to be opened with a force of less than 12 pounds, and in most cases less than 10 pounds. The doors with mechanical latches, on the other hand, required forces of 11.1 to 15.3 pounds. One of the eight refrigerators equipped with a mechanical latch was from a manufacturer who reported that all 1964 production is equipped with a magnetic gasket, which permits opening with a much smaller force than indicated in the table.

2. Homefreezers

Many of the upright homefreezers and the freezer sections of the combination refrigerator-freezer units, like the household refrigerators, were equipped with magnetic closures. The forces ranged from about 3 to 12 pounds with the magnetic closures, depending largely on the size of the door. The models tested did not include the 21 to 25 cubic foot sizes of homefreezers on which one manufacturer reported that forces of about 14½ to 17½ pounds were required to open the door. On the other hand, forces greater than 15 pounds were observed with most of the upright models of freezers and the freezer sections of combination refrigerator-freezer units which were equipped with mechanical latches. These forces ranged from 10 to more than 20 pounds, the higher value being the upper limit of the instrument used to make the measurements.

Only one of the chest-type homefreezers on which measurements were made exhibited an opening force in excess of 15 pounds.

D. CONCLUSIONS

The following conclusions are based on the measurements and observations made on a conveniently available sample and on information provided by manufacturers. While the measurements were made on both household refrigerators and homefreezers, Public Law 84-930 is applicable only to household refrigerators.

1. Magnetic closures

Magnetic gaskets and magnetic latches as currently utilized both for single-door and two-door combination household refrigerators, and for upright homefreezers, permit the doors to be opened with forces considerably less than the 15 pounds set by the standard for refrigerators, except possibly in some models of very large upright homefreezers.

2. Mechanical closures

Mechanical latches of the designs currently used in the refrigerator sections of two-door combination household refrigerator-freezers and in single-door household refrigerators were found by measurement to permit the doors to be opened with forces not exceeding 15.3 pounds. However, the designs currently used in upright home freezers and in the freezer sections of two-door combination household units require opening forces ranging from about 10 to more than 20 pounds. The upper limit of this range exceeds the upper limit of force set by the standard for household refrigerators.

3. Chest-type home freezers

In most instances the current use of counterbalanced lids for chest-type home freezers enables the lids to be opened with forces less than 15 pounds.

4. Particular problems with upright home freezers

Special safety problems are presented by models of upright home freezers which have compartments with an inner door or which have rollout compartments with integral door-and-bottom construction. In these types of construction, forces applied to the accessible door or panel by an entrapped child would probably be ineffective in obtaining release.

EXHIBIT A

U.S. DEPARTMENT OF COMMERCE,
NATIONAL BUREAU OF STANDARDS,
Washington, D.C., October 30, 1963.

Subject: Information on household refrigerators and home freezers.

The House of Representatives' Committee on Interstate and Foreign Commerce, Subcommittee on Health and Safety, recently held hearings on the safety of refrigerators, with particular reference to Public Law 84-930, and the standard promulgated by the Secretary of Commerce pursuant to this law. Copies of these documents are enclosed.

In the course of the hearings, a member of the committee asked me as the National Bureau of Standards representative to " * * * check and let us [the committee] know if all of the major manufacturers [of household refrigerators] are, in fact, complying with the law, as I feel sure they probably are. * * *



The chairman of the committee concurred, and added, " * * I think it would be wise also and I think it would be interesting if in that report you would include information as to how many manufacturers are also complying with this standard in the home-freezer type of refrigerator * * *"

In order to respond to these requests we would appreciate it if you would answer the following questions:

1. Do the household refrigerators of your current production comply with the requirements of the "Standard for Devices To Permit the Opening of Household Refrigerator Doors From the Inside?"

2. Although home freezers are not covered by the law, do the freezers—both upright and chest type—of your current production also comply with the requirements of the standard?

I shall appreciate a prompt reply in order that the Bureau may respond to this request from the congressional committee without delay.

Sincerely yours,

A. T. MCPHERSON,
Special Assistant to the Director.

EXHIBIT B.—Information supplied by manufacturers on compliance with the standard promulgated pursuant to Public Law 84-930 regarding the force required to open the doors of household refrigerators and homefreezers

Firm name and address	Person supplying information	Refrigerators compliance with Public Law 930	Homefreezers, compliance with 15-pound requirement of standard		
			All	Chest type	Upright type
Acme National Sales Co., Long Island City, N. Y.	Joseph Rosenhaft.	Complies.	Does not manufacture freezers.	Does not manufacture freezers.	Does not manufacture freezers.
Almco Wholesale Corp. ¹	T. J. Villa, Director, Bureau of Standards.	Complies.	Complies.	Complies.	Complies.
Amara Refrigeration, Inc., Amara Iowa.	R. D. Maxwell, director of engineering.	do.	Complies.	Does not manufacture freezers.	Does not manufacture freezers.
Chambers Corp., Oxford, Miss.	Don C. Sevey, chief engineer.	do.	do.	do.	Do.
Crane Co., Johnstown, Pa.	C. W. Pollock, manager, air-conditioning engineering.	do.	Complies.	Complies on some models.	Complies.
Dwyer Products Corp., Michigan City, Ind.	D. D. Sweeney, vice-president, engineering.	do.	Complies.	Does not comply.	Complies insofar as possible.
Franklin Appliance Division, Studebaker Corp.	R. T. Putterbaugh, director, refrigeration engineering.	do.	Complies.	Complies.	Complies.
Frigidaire Division, General Motors Corp., Dayton, Ohio.	Byron Booher, engineering department.	do.	Complies.	Complies.	Complies.
Frostmaster Co., Tyler, Tex.	Gordon Bryson, engineering, manager.	do.	Complies.	Complies.	Complies.
General Electric Co., Louisville, Ky.	Fred Holt, general manager, household refrigeration department, Major Appliance Division.	do.	Complies except in largest sizes of upright types.	Complies.	Complies.
Gibson Refrigerator Division, Hupp Corp., Greenville, Mich.	Tom Dolan, manager of engineering.	do.	Complies except in 1 large model.	Complies.	Complies.
Glasco Division, ² Universal Match Corp., Muncie, Ind.	Thomas O. Yingst, manager, product engineering, and W. T. Janney, manager, Food Service Division.	do.	Complies.	Complies.	Complies.
B. F. Goodrich Co., ³ Akron, Ohio.	John T. Hart.	Complies.	Complies.	Complies.	Complies.
Hotpoint Division, General Electric Co., Chicago, Ill.	C. H. Brown, manager, refrigeration engineering department.	do.	Complies.	Complies.	Complies.
Kelvinator Division, American Motors Corp., Detroit, Mich.	W. E. Watson, staff assistant to director, applied engineering and research.	do.	Complies.	Complies.	Complies.
King Refrigerator Corp., Glendale, N. Y.	John T. Johnson, chief engineer.	do.	Complies except on the largest size.	Does not manufacture.	Complies.
Manitowoc Equipment Works, Manitowoc, Wis.	R. H. Swanson, chief engineer.	do.	Complies.	Complies.	Complies.
Marquette Corp., ⁴ Minneapolis, Minn.	E. B. Petersen, assistant general manager.	Complies.	Complies.	Complies.	Complies.
Midwest Manufacturing Corp., subsidiary of Admiral Corp., Galesburg, Ill.	Herbert Squire, engineering department.	Complies.	Complies.	Complies.	Complies.

See footnotes at end of table.

EXHIBIT B.—*Information supplied by manufacturers on compliance with the standard promulgated pursuant to Public Law 84-930 regarding the force required to open the doors of household refrigerators and home freezers—Continued*

Firm name and address	Person supplying information	Refrigerators, compliance with Public Law 930	Home freezers, compliance with 15-pound requirement of standard		
			All	Chest type	Upright type
Norcold, Inc., Gardena, Calif.....	Norman H. Lee, president.....	do.....	Does not manufacture freezers.....	Does not manufacture freezers.....	Does not manufacture freezers. Complies.....
Norge Division, Borg-Warner Corp., Fort Smith, Ark.....	D. F. Williams, cabinet engineer.....	do.....	.....	.....	.....
Philco Corp., subsidiary of Ford Motor Co., Philadelphia, Pa.....	C. R. Quinn, chief engineer, refrigeration engineering.....	do.....	.....	.....	Complies except on the largest model. Does not manufacture freezers.....
Freway, Inc., Wisconsin Rapids, Wis.....	K. S. Jensen, chief engineer.....	Does not manufacture.....	Does not manufacture freezers.....	Does not manufacture freezers.....	Does not manufacture freezers.....
Quickfreeze Corp., ¹ Fond du Lac, Wis.....	Wayne F. Hesel, chief engineer.....	Complies.....	.....	Does not manufacture.....	Complies. ²
Ranney Refrigerator Co., Greenville, Mich.....	E. J. Von Arb, vice president, director of engineering.....	do.....	.....	Complies.....	Does not manufacture.....
Revco, Inc., Deerfield, Mich.....	Gerald K. Springer, vice president.....	.....	.....	.....	.....
Springer Industries, Inc., ³ Long Island City, N.Y.....	R. J. Kelley, chief engineer.....	Complies.....	.....	Does not manufacture.....	Complies.....
Sub-Zero Freezer Co., Madison, Wis.....	Robert L. Howell, chief engineer.....	Does not manufacture.....	Does not manufacture freezers.....	Does not manufacture freezers.....	Does not manufacture freezers.....
Victor Products Corp., Hagerstown, Md.....	A. J. Pfeiffer, advisory engineer.....	Complies.....	.....	Complies.....	Complies on all except 21 and 25 cubic foot models.....
Westinghouse Electric Corp., Major Appliance Division, Columbus, Ohio.....	.....	.....	.....	.....	Does not comply.....
Whirlpool Corp., Evansville, Ind.....	F. J. Hausfeld, director of engineering.....	do.....	.....	do.....	.....

¹ Letter returned, marked "Out of Business."

² This company states that some difficulties have been experienced with forces above 15 pounds in mechanical latches for upright freezers, but that corrective action is being taken in future production.

³ This company states that it does not manufacture household refrigerators or home freezers, but that all "refrigeration devices" manufactured by it do comply with the standard.

¹ This company states that it does not manufacture refrigerators or freezers but distributes products manufactured by the Hupp Corp. and by the Franklin Division of the Studebaker Corp.

² This company states that it manufactures only refrigerators designed for commercial or restaurant use.

³ This company states that it does not manufacture refrigerators, but does manufacture refrigerator gaskets.

⁴ This company states that it does not manufacture refrigerators or freezers, but distributes products manufactured by the Franklin Division of the Studebaker Corp.

EXHIBIT C.—Measurements of opening force for household refrigerator doors (both for single-door refrigerators and for the refrigerator section of 2-door combination refrigerator-freezers)

Closure	Manufacturer	Door size ¹	Force (pound) average ²
Magnetic latch	E.	Medium	11.6
		do.	10.4
		do.	10.0
Magnetic gasket	D.	Small	7.6
		Medium	10.3
	O.	do.	10.1
		do.	9.4
		do.	8.5
	K.	Large	10.1
	B.	Medium	10.0
		Large	9.9
		Medium	7.7
	A.	do.	6.8
		Large	9.0
		Medium	8.3
	S.	do.	5.1
		do.	7.7
	H.	do.	7.7
	R.	Small	7.7
	Q.	Medium	7.3
		do.	6.8
	N.	Large	7.1
	M.	Medium	6.8
		do.	5.9
Mechanical latch	F.	do.	6.6
	J.	do.	6.2
	G.	do.	6.5
		do.	6.4
	P.	Small	3.8
		do.	3.6
	Q.	do.	15.3
	L.	Medium	15.1
	L.	do.	14.3
	D.	do.	13.2
	O.	Large	13.1
	G.	do.	12.7
		do.	11.9
	D.	do.	11.1

¹ Door size classification is related to length of perimeter (gasket length):

"Small": Length+width=less than 60 inches.

"Medium": Length+width=between 60 and 72 inches.

"Large": Length+width=greater than 72 inches.

² For all except undercounter and portable units, the values reported are the averages of measurements made in duplicate at the level of the top, bottom, and approximate midpoint of the inside leading edge of the door. For the doors of undercounter and portable units, measurements were made only at a point approximately in line with the midpoint of the inside leading edge. The forces reported were obtained by pulling on rubber suction cups attached to the outside surface of the door. To determine how this convenient method compared with the more difficult method of pushing from the inside, measurements were made on 4 home freezers and 2 household refrigerators by both methods. The differences in average opening forces by the 2 methods did not exceed 0.4 pound. In 2 cases the forces were equal, in 2 cases the inside-applied forces were greater, and in 2 cases the outside-applied forces were greater.

EXHIBIT D.—Measurements of opening force and homefreezer doors (including both chest and upright homefreezers, and also the freezer section of 2-door combination refrigerator-freezers)

Type of freezer	Closure	Manu- facturer	Door size ¹	Location of freezer com- partment	Force (pound) ² average	
Upright.....	Magnetic gasket.....	B	Large.....		11.8	
		C	do.....		11.0	
		R	do.....		10.4	
		J	do.....		10.3	
		G	do.....		9.6	
		K	Small.....		7.3	
		F	do ³		4.8	
			Medium ³		4.8	
		Mechanical latch.....	I	Large.....		>20.0
				do.....		>20.0
	M		do.....		>20.0	
	D		do.....		>20.0	
	O		do.....		>18.0	
	L		do.....		18.4	
	E		do.....		18.2	
	H		do.....		17.6	
	K		do.....		16.0	
	A		do.....		13.9	
	T	do.....		10.6		
	Chest.....	Counterbalanced lid, plain gasket.	R	Small.....		16.8
			Large.....		10.7	
		J	do.....		10.4	
		R	do.....		10.3	
Freezer door of 2- door combination unit.	Counterbalanced lid, mag- netic gasket.	O	Small.....		5.6	
			Large.....		10.9	
	Magnetic gasket.....	H	do.....		7.4	
		O	do.....	Lower.....	7.4	
			do.....	Upper.....	7.2	
			do.....	do.....	6.7	
			do.....	do.....	5.8	
			do.....	do.....	4.8	
		S	do.....	Lower.....	5.6	
			do.....	do.....	5.5	
		C	do.....	do.....	5.5	
			do.....	Upper.....	4.5	
		N	Medium.....	Lower.....	5.3	
		B	Small.....	Upper.....	4.7	
			do.....	Lower.....	4.5	
			do.....	Upper.....	4.5	
		J	do.....	do.....	3.8	
		F	do.....	do.....	3.8	
		M	do.....	do.....	3.7	
			do.....	do.....	3.4	
G	do.....	do.....	3.2			
	do.....	do.....	2.7			
	Magnetic latch.....	E	do.....	do.....	9.3	
	D	do.....	Lower.....	6.9		
	Mechanical latch.....	E	Medium.....	do.....	>19.0	
		Small.....	do.....	15.4		
	I	Medium.....	do.....	>17.5		
	K	Small.....	Upper.....	13.8		
	L	do.....	Lower.....	13.5		

¹ Door size classification is related to length of perimeter (gasket length):

"Small": Length+width=less than 60 inches.

"Medium": Length+width=between 60 and 72 inches.

"Large": Length+width=greater than 72 inches.

² Except for the freezer doors of combination units and a few of the upright homefreezer doors, the values reported are the averages of measurements made in duplicate in line with the extreme ends and the approximate midpoint of the inside leading edge of the door. For the freezer doors of combination units and a few of the upright freezer doors, measurements were made only at the approximate level of the midpoint of the inside leading edge. The forces reported were obtained by pulling on rubber suction cups attached to the outside surface of the door. To determine how this convenient method compared with the more difficult method of pushing from the inside, measurements were made on 4 homefreezers and 2 household refrigerators by both methods. The differences in average opening forces by the 2 methods did not exceed 0.4 pound. In 2 cases, the forces were equal and in 2 cases, the inside-applied forces were greater and in 2 cases, the outside-applied forces were greater.

³ This unit was a 2-door upright homefreezer with a small lower door and a medium upper door.

Mr. ROGERS of Florida. Now, Mr. Chairman, just a question or two more.

Mr. ROBERTS. Certainly.

Mr. ROGERS of Florida. I notice that you say that 9 percent of the children did not release themselves and had to be released after about 10 minutes, 31 percent were upset and you released them because of that, and 60 percent released themselves.

What seemed to be the reaction of those who did not release themselves? I presume you or your staff have seen those movies, and so forth.

Dr. McPHERSON. I think that they usually simply sat quietly. Let me refresh my memory on that, please.

Mr. WYLY. Mr. Rogers—

Mr. ROGERS of Florida. Would you identify yourself, please?

Mr. WYLY. I am Robert Wyly of the National Bureau of Standards.

I had some part in some of the earlier tests. The children who were released early and did not get out by themselves generally either sat quietly; some of them became somewhat mildly upset. A considerable number just didn't do anything.

Mr. ROGERS of Florida. Just did nothing?

Mr. WYLY. Just did nothing. Some few got disturbed and moved around and did the wrong thing or became somewhat confused. But there was a fairly large percentage who just didn't do much of anything.

Mr. ROGERS of Florida. What do you have to do to get out of a refrigerator now?

Mr. WYLY. Well, the refrigerators now on the markets are designed to open with a force applied to the door, an outward force.

Mr. ROGERS of Florida. Just a push?

Mr. WYLY. Just a push, by and large. Sometimes a kick or a thrust or anything in the nature of a force directed at the door, particularly a push.

Mr. ROGERS of Florida. What force does that have to be?

Mr. WYLY. The standard requires not more than 15 pounds applied near the leading edge of the door. Now current production seems to be running somewhat less than that on the refrigerators today.

Mr. ROGERS of Florida. It does not require that much?

Mr. WYLY. It does not in our observation require that much. The tests were conducted in the second investigation with something like 12 pounds; perhaps this is representative of much of the production; perhaps in some cases it may run even less.

Mr. ROGERS of Florida. Yes. I noticed perhaps some of them; do they put knobs inside or not?

Mr. WYLY. This was true in the days when the standard was first applicable. We find that the knob is not now being used. The magnetic gasket seems to be a more satisfactory device.

Mr. ROGERS of Florida. What is the magnetic gasket? How does that work?

Mr. WYLY. Well, it is in essence a gasket which is in itself magnetic. It has particles of magnetic metal embedded in a rather flexible

substance. This enables the gasket, which is attached to the door, to grip the metal of the refrigerator box, and this keeps the door sealed along the edge.

Mr. ROGERS of Florida. I wondered for that 9 percent or maybe more of the 31 percent, do you think this luminous material would excite them to action, at least to see some place in the dark where they might be attracted to?

Mr. WYLY. This was the reason that the second investigation, described by Dr. McPherson, was conducted. It developed that the results of that experiment showed no significant advantage in the use of a luminous marker.

Mr. ROGERS of Florida. What were the results there?

Mr. WYLY. We have a report on that. I can't give you the specific numbers but it was about a 2 percent overall difference.

Mr. ROGERS of Florida. Increase?

Mr. WYLY. Yes; but this was considered not statistically significant.

Mr. ROGERS of Florida. Thank you very much.

Thank you, Dr. McPherson.

Dr. McPHERSON. Thank you, sir.

Mr. ROBERTS. Our next witness is Mr. William White, who is Chief of the Family Safety Branch of the Department of Health, Education, and Welfare.

**STATEMENT OF WILLIAM V. WHITE, CHIEF OF THE FAMILY SAFETY
BRANCH, DIVISION OF ACCIDENT PREVENTION, DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE**

Mr. WHITE. Thank you.

Mr. Chairman and members of the committee, as you are aware, the Division of Accident Prevention of the Public Health Service is concerned with the broad public health aspects of injuries and deaths resulting from accidents, and particularly with the human factors involved in accident causation.

Dr. Paul V. Joliet, the Chief of the Division is very much interested in the accident problem among children but was unable to appear before the committee because of a prior commitment. Since the problem of accidental entrapment and suffocation of children in idle refrigerators is one of the many areas of concern of the Family Safety Branch of the Division of Accident Prevention, Dr. Joliet has asked me to present the views of our Division on this subject.

The Public Health Service is concerned with the problem of accidental deaths due to entrapment of children in refrigerators temporarily out of service or abandoned. We approve the principle of having household refrigerators and home freezers equipped with appropriate safety devices.

However, since responsibility for the administration of Public Law 84-930 is in the Department of Commerce, we defer to that Department for a report.

Although we are not submitting a progress report on specific legislation, we are happy to have this opportunity to convey to the committee our sincere interest in this problem and some of our activities relating to its solution.

Suffocation by entrapment in refrigerators does not rank high among all causes of accidental death. According to nonofficial estimates, there was a record number of such deaths—35 in 1962. During 1961, the Division of Accident Prevention made a study of deaths due to accidental mechanical suffocation. The study covered those deaths occurring in the United States during calendar year 1959. There were 1,716 in this group.

In reviewing this study, special note was made of those deaths which occurred by entrapment of a child in a refrigerator. There was a total of 23 recorded deaths in 1959 due to entrapment, 22 of these were children under 11 years of age.

We have a table here which I will point out. The youngest was 3 years—we had a total of five in that category—one was 10 years old. The median age was 5, and we had eight in that category. If you will look at your totals by race and sex, you will find that the white male was responsible for 11, the nonwhite male for 6, the white female 4, and nonwhite female 1.

We did not include one case which was a white male over 28. This was excluded from the tally.

In looking over these abstracts, and I might point out these were from the official death certificates, one observes six deaths were attributed to abandoned or discarded iceboxes, and three to vacant or discarded refrigerators. Twelve abstracts gave the cause of death as refrigerator entrapment, not mentioning if it was abandoned or in use. One child died by suffocation in a deep freeze in the garage. This is the actual language that was used on the death certificate. There is a variation; we cannot explain the variation.

Along with the abstracts on refrigerator entrapment, there were some other abstracts classified as "trapped in airtight place." There were three cases where a child was entrapped in a clothes or cedar chest, and one where a 7-year-old boy died in the baggage compartment of a stationary aircraft. For comparison, we now are conducting a similar study on 1961 death certificates and should have this information shortly.

We call attention to the number of deaths involved (23 in 1959) so that it may be considered as a part of the total problem of home accidents resulting in death. Accidents in and about the home caused more than one-fourth of all accidental deaths in the same year, 1959. There were 23,020 deaths from such accidents reported, and the total number is estimated to be as high as 28,000 annually—including an estimate for deaths with place not reported. The home and its premises are the scene of almost two-thirds of all accidental deaths of children under 5 and almost one-half of the accidental deaths of persons 65 and over.

It seems appropriate to point out that accidents in the home are responsible for more than three-fourths of all deaths from fire and explosion, almost two-thirds of those from poisonous gases and vapors, about one-half of the deaths from falls, solid and liquid poisons, and firearm accidents.

We are concerned about every accidental death in the home, particularly the 15,000 children under age 15 who die needlessly each year. In the category of mechanical suffocation where entrapment

in refrigerators is involved, we are concerned with approximately 30 deaths per year at the current rate. All of these are preventable.

Since Public Law 930 was enacted in 1956, there has been no recorded case of a fatality involving a refrigerator equipped with a prescribed inside release.

In addition to factfinding, the Division of Accident Prevention is engaged in extensive health education programs designed to call attention to numerous hazards which cause accidental injury or death.

On March 19, 1963, we sent out to about 100 key accident prevention workers in the United States a special memorandum on the subject of refrigerator entrapment. This document listed a chronology of pertinent safety developments during the decade 1953 to 1963, included a copy of the "Safety Standard" for the prevention of refrigerator entrapment issued that month by the Federal Safety Council and requested action by State and local health authorities to assist in the control of this problem.

On June 19, 1963, the Division brought together a group of key people from the following organizations: The Federal Safety Council; Refrigeration Service Engineers Society; Children's Bureau of the Department of Health, Education, and Welfare; the American Academy of Pediatrics; the National Safety Council; National Electrical Manufacturers Association; and the Public Health Service.

The purpose of the June 19 meeting was to elicit the viewpoint of all concerned groups so that we could prepare adequate program guidelines for State and local health departments. This is another example of a cooperative attempt to define the problem and a logical course of program action by consulting associates in Government, in the business and industrial community, and voluntary agencies associated with the problem. This meeting pinpointed the problem statistically and called particular attention to the fact that the majority of the deaths involving entrapment of children in refrigerators were related to the refrigerator temporarily idle and was not restricted to those completely abandoned. Pertinent activities of each organization represented were reviewed and documented.

It was concluded that intensive epidemiological investigation of every death and near death is necessary at least for a limited period, if we are to learn the true facts associated with these accidents. For instance, we do not know if these were mechanical refrigerators or old-fashioned iceboxes. We do not know anything about the child's activities immediately preceding the accident or what degree of supervision was involved, how long the refrigerator was out of operation, what type of home, socioeconomic group, et cetera, was involved. These and many other facts could give clues to effective preventive action.

Several recommendations were made for immediate attack on the problem. Removal of the latch, use of a toggle bolt, removal of doors, securing with metal strapping, locking with a padlock, and metal or wood blocking were suggested. The Division of Accident Prevention is encouraging its trained men assigned to State and local health departments to assist in program development. Particular emphasis is being placed on information programs. Key groups to initiate action

are utility companies; electrical manufacturers and distributors; health departments; safety councils; physicians, particularly pediatricians; women's groups; youth organizations; and engineering groups.

The Division of Accident Prevention is preparing educational materials on prevention of refrigerator entrapment for promoting action programs through State health departments. Of necessity, this item must be a proportionate part of a balanced, total accident prevention program and will not stand as an independent activity.

This concludes my statement, Mr. Chairman.

Mr. ROBERTS. Thank you, Mr. White. It is a pleasure to have you appear here as the representative of the Division of Accident Prevention.

This committee is well aware of the work that this Division is doing and appreciates the work that Dr. Joliet assists in doing. It has been my pleasure to meet with you and Dr. Joliet and other associates at various times and promote safety standards.

I recall particularly one joint effort on the part of the Health, Education, and Welfare Department's Division of Accident Prevention in cooperation with the National Safety Council and I believe the National Education Association in encouraging the industry to put on an educational program with reference to the use of safety belts. I think this has had quite an impact on the industry, so much so that next year, I am told or informed by announcements, that all major manufacturers will install belts in their new models as standard equipment. This is a great step forward. I congratulate you on the work that is being done there, and on your statement.

I just have one or two questions. One would be with reference to the recommendations you refer to on page 5 and it says several recommendations were made for immediate attack on the problem. Use of a toggle bolt, removal of doors, security metal strapping, locking with a padlock, and metal or wood blocking suggested.

We have before us today a suggestion as to the use of a toggle bolt.

Do you have any particular suggestion as to which one of these various devices would be of the most value?

Mr. WHITE. We could not evaluate the devices, Mr. Chairman, because we have no facility for making this sort of test or observing the use of various devices under controlled conditions. Until we could subject the proposed devices to a series of tests involving a number of children it would be impossible to recommend any particular item.

Mr. ROBERTS. But is it your feeling that there ought to be some type of program that would reach this abandonment refrigerator problem?

Mr. WHITE. Very definitely, and this becomes a matter of ventilation. So, any of these devices would allow ventilation into the box. We can disseminate information on all of these and actually give the homeowner or the householder a choice as to which he might employ in his particular refrigerator.

Mr. ROBERTS. It has been my experience that what happens is when some of these deathtraps are left on someone's premises that the type of device that is often used, if any is used, is either to tie a rope around it or, in some cases, the use of wire, metal strapping, and that sort of thing.

It has also been my observation that this does not usually solve the problem. It would seem to me that there must be a more permanent type of device that is used that will not be very easy to undo.

I actually saw this not too long ago at a place where hundreds of children are constantly in attendance—a large refrigerator, with two doors. I called it to the attention of the owner of this box. Later I looked at his attempt to correct this situation. He had used a device of taking two or three rounds with a rope and tying a rather simple knot in that rope or wire. It is my feeling that we could work out some kind of a program that would promote the use of some very simple but yet effective device, I believe the public would be more inclined to buy such device rather than have you suggest a multitude of things. Because, if you do that, normally the tendency seems to be that they reach for whatever is the most convenient and that, many times, is not effective.

Mr. Rogers.

Mr. ROGERS of Florida. Thank you, Mr. Chairman.

I certainly agree with the chairman that just tying a rope around an abandoned refrigerator, just binding it up, is not the solution at all, but it would seem to me that taking the door off completely so that there is no possibility, perhaps that could be brought out in your education program when you get started.

Do you feel that the standards that have been set are sufficient for the industry?

Mr. WHITE. The only thing that we would have to base an answer to that on would be that there has been no evidence of a death recorded since the prescribed standard went into effect.

Mr. ROGERS of Florida. So you do feel it is safe?

Mr. WHITE. If this is a true picture, we would so feel. Again, we need additional information.

Mr. ROGERS of Florida. Would you know otherwise?

Mr. WHITE. No, sir.

Mr. ROGERS of Florida. Your Department would not know?

Mr. WHITE. No, sir; not under the present method of reporting, we would not, because we accept the statement of the physician on the death certificate and use this information in lieu of personnel and budget to have men investigate each item that we received information on.

Mr. ROGERS of Florida. But, from all reports, this appears to be sufficient?

Mr. WHITE. Yes, sir.

Mr. ROGERS of Florida. Thank you.

Now is there any reason from your June 19 conference you did not call in the Bureau of Standards?

Mr. WHITE. We extended an invitation to the Bureau of Standards, sir, and they did not send a representative at that time.

Mr. ROGERS of Florida. They did not?

Mr. WHITE. They indicated that since this was primarily to discuss information for State and local health departments, that the meeting was not on a subject that they needed personal representation.

Mr. ROGERS of Florida. Did you participate in any of the tests made by the Bureau of Standards on the children?

Mr. WHITE. No, sir; not personally. At that time, I was not in the Washington area. I was on a field assignment. I am familiar with the studies and have read them.

Mr. ROGERS of Florida. And did people from your Department participate in them or not?

Mr. WHITE. In an advisory capacity only, sir.

Mr. ROGERS of Florida. I see. All right.

Mr. WHITE. The Children's Bureau participated actively; the Health Department in an advisory capacity.

Mr. ROGERS of Florida. So you feel there is good liaison on this?

Mr. WHITE. On this and other subjects.

Mr. ROGERS of Florida. Thank you.

Thank you, Mr. Chairman.

Mr. ROBERTS. Mr. Nelsen.

Mr. NELSEN. No questions.

Mr. ROBERTS. Thank you very much, Mr. White.

Before I introduce the next witness I would like to read the statement of Joel T. Broyhill that has just been introduced in the record which introduces the third and final witness for the day. The statement is as follows:

STATEMENT OF HON. JOEL T. BROYHILL, A REPRESENTATIVE IN CONGRESS FROM THE
STATE OF VIRGINIA

When Public Law 930 was enacted in 1956, I, along with many others, was impressed and enthusiastic over the prospect that in the foreseeable future the threat of accidental entrapment and suffocation of children in idle household refrigerators and freezers would be eliminated.

However, when the results of the first child behavior tests made by the National Bureau of Standards in 1957 with live children was brought to my attention, I was deeply concerned. Respective analysts, such as Nate Haseltine, of the Washington Post, maintained that less than 50 percent of the children managed to escape their simulated entrapment. Precise percentages are not important. If a few children sit quietly and await death by suffocation, the dependability of the devices should be viewed as unacceptable. This should not rest as the ultimate in assistance that the public should expect from the producers.

It should be noted that the more recent child behavior test held by the Bureau of Standards in 1961 showed no improvements in child escapees.

Col. Gaylord B. Kidwell, a senior member of my constituency, has devoted many years to a study of this safety problem. Colonel Kidwell called my attention to the fact that disappointing results of the child behavior tests would require prudent citizens to take equal safety precautions with the new boxes, equipped with push-open doors, and in the cases of older types, equipped with conventional locking mechanisms.

The precautionary measures then advocated by the National Safety Council and other organizations, ranged from complete removal of doors to boring holes in the cabinets with an electric drill. These actions are cumbersome and mutilating to a box if it is intended for further use for refrigeration of food. I understand that the Federal Safety Council and the Public Health Service have recently advanced several novel and more simple means to ventilate boxes even when they are only temporarily out of service.

These novel precautions still require mechanical performance to utilize and would thus seem unfair to impose on housewives and mothers who have the primary and continuing interest in the protection of children, and the supervision of this common household equipment.

I think that 10 years is long enough to search for an escape device which requires action by a captured child to operate and other avenues should be explored.

The fatal characteristics of the product is its airtight seal necessary to insure the protection of food under refrigeration. Therefore, I believe solution lies in providing a simple manual means in new manufacture whereby anyone can ventilate a unit whenever it is out of service and exposed to entry by playing children. This is the general provision of H.R. 4931 and I urge its early consideration by the committee.

This statement will be filed for the record.

I might say that the comment or statement on this, while I agree with him, the test to which he referred may not have shown that more than 50 percent of the children were released themselves. Our experience shows that no deaths have occurred in this type refrigerator—magnetic household refrigerator—or we would have had some tragic statistics.

I do agree with him that there should be some type of device which would afford a simple yet efficient means of rendering the old-type refrigerators and the new type, also, safer.

Mr. NELSEN. Mr. Chairman, at that point, didn't the studies show that some of the youngsters just sat quietly in the refrigerator and made no effort of any kind to get out? So that, regardless of what kind of device you would have, whether it be magnetic or otherwise, if the child makes no effort to get out, there would not be anything you could do but have air which would destroy the use of the refrigerator, so that there is a problem of a child that just passively sits there and does nothing and becomes suffocated.

Mr. ROBERTS. That is true. That is true, also, I might say, with reference to any safety device or any effort to achieve safety. It is never 100 percent effective.

Our next witness is Col. Gaylord B. Kidwell, U.S. Army, retired, Arlington, Va.

STATEMENT OF COL. GAYLORD B. KIDWELL, U.S. ARMY, RETIRED

Mr. ROBERTS. Colonel, I want to welcome you to the hearing and to congratulate you on the splendid work that you have done. This has been, you might say, a noncompensated effort on your part.

I believe that since your retirement you have devoted several years trying to come up with some type of a device that would protect children against the hazard of the abandonment of refrigerators. It has been my pleasure to talk with you many times and to know of the fine work you have done, the many hours you have spent trying to come up with this type of device.

Primarily, I thought on this progress type of hearing today that we would want to hear from you and see if you can shed any further light on the situation. We are glad to have you.

Colonel KIDWELL. Thank you very much, Mr. Chairman.

May I express my appreciation for the invitation to appear here today. It was my privilege to appear before this committee in May of 1956 at hearings held immediately prior to the enactment of Public Law 930, and, more recently, at hearings held in April of this year

when a bill for the establishment of an accident prevention center was under consideration.

Shortly after my retirement from active military service in 1953, the problem of accidental entrapment and suffocation of children in idle household refrigerators and freezers was high in the public mind. There was much concern over the mounting incidence of these tragic deaths among children which was strongly reported in the press.

I strongly felt that here might be an opportunity for an interested private citizen to render a public service in a worthy cause. Since then, I have worked continuously to induce reforms, primarily in the area of public educational programing conducted by governmental and nongovernmental organizations. This has been done mainly by direct contact and collaboration. This effort throughout the years has been in the capacity of a private citizen and without remuneration of any kind.

True progress toward the alleviation of this distressing childhood hazard, to which my voluntary collaboration may have contributed, may most properly be reflected in the progress reports of the organizations concerned.

One of my most gratifying associations was that with the Federal Safety Council in the Department of Labor. Early in 1961, I approached the Chairman of the Council, Mr. A. W. Motley, offering a "toggle and plate" safety device for the free use of the Government and the general public which I considered suitable to use in rendering certain types of refrigerators and freezers harmless. In this contact, I was generously sponsored by the esteemed chairman of this committee, the Honorable Kenneth A. Roberts, of Alabama.

As an outgrowth of this contact, I was invited to continue my collaboration and to advise with the Standards Committee of the Council in drafting a safety guide to be used throughout the Government. The recently published "Safety Guide for Prevention of Refrigerator Entrapment" is an end product.

This "guide" embodies much broader concepts of the hazard, and advocates a variety of novel and simple precautionary measures that may be taken by an owner to render even a temporarily idle unit harmless. This "guide" has been embraced and endorsed by the Accident Prevention Division of the Department of Health, Education, and Welfare, and the National Safety Council, a nongovernmental organization.

The guide states two concepts on the extent of the hazard that have not been generally pointed up in prior safety educational planning, as follows:

4. As a product of this study and review, the Council finds:

(a). That positive precautionary measures should be taken with all units temporarily or permanently taken out of service in their refrigerative function. This is viewed as particularly significant to agencies having custodial responsibility for vacant housing.

(b). That in view of the limited safety benefits disclosed in the child behavior tests, positive precautionary measures should be taken with the new "push open" door-type refrigerators.

It may appear somewhat surprising to the committee that the safety assistance realized in the publication of the Federal Safety Council's

guide took so many years to accomplish. I venture to suggest that much delay in achieving this goal came through the absence of centralized safety management, and a lack of independent research and testing capabilities within the framework of safety organizations.

While I have been most courteously and considerately received in every contact, I found no single agency with the authority and the funds to explore all facets of the problem I believe it contained.

Before the publication of the child behavior report in 1957, the conviction was quite widespread that the new push-open doors entirely removed the danger to children. Some manufacturers advertised the new doors to be "child safe"; some States excluded refrigerators from liability under its safety law if equipped with doors that could be pushed open from the inside, and one prominent and respected writer on childhood accidents wrote in two nationally circulated magazines that the new devices made it impossible for a child to be entrapped and suffocated.

I thought that the disappointing safety benefits reflected in the child behavior report of 1957 indicated that certain actions should be taken in the public interest. Among these was a review of the national advertising that was claiming absolute child protection in the new devices, and to completely realine national safety programs to point up the continuing danger in the new devices.

Consequently, with the assistance of my Congressman, the Honorable Joel T. Broyhill, of Virginia, we referred samples of advertising to the Federal Trade Commission and invited attention to the child behavior report. In a short time, we were both advised that the questioned advertising had been discontinued, and to let the Commission know if we noticed any repetition.

Similarly, we suggested to the National Safety Council that it realine its safety material to Public Law 930. We received a reply that they had some 300,000 data sheets, and 500,000 posters on hand, and that when the demand would justify a reprint they would include information as to Public Law 930. So far as I know, this was never done; however, the Council has recently endorsed the new guide of the Federal Safety Council and published it in its organization magazine.

In the instance of the prominent writer on childhood accidents, I wrote the author and the magazine editors direct in 1959, calling attention to the child behavior report. In each case, I received replies to the effect that the advice was incorrect and that much more needed to be done to afford complete child protection.

I hope it may be of interest to the committee to learn that Mr. H. Peter Stern, president of the Star Expansion Industries Corp. of Mountainville, N.Y., recently became interested in my private efforts on this safety problem. As a result, and as a generous public service, his firm is donating, through me, a quantity of toggle bolts to selected organizations engaged in national safety programming to be used as visual aids.

This free donation has been accepted by the Accident Prevention Division, Department of Health, Education, and Welfare; the Gen-

eral Federation of Women's Clubs; the Refrigeration Service Engineers Society; and the American Academy of Pediatrics. They are distributing these bolts to their 50 State chairmen or representatives and this should assist materially in local safety education and demonstration. They are also placing a copy of the new Federal Safety Council's guide in the hands of these State officers at the same time.

With a more specific reference to the safety benefits derived from Public Law 930, I respectfully suggest that the child behavior studies of 1957 and again in 1962, both show unacceptable limits in child protection under the present standards, and I urge that the search for improvement through design in new manufacture be vigorously pursued. I lean toward the provision of a simple manual means whereby a unit may be ventilated whenever the situation demands, by legislation, if necessary.

I would like to add, Mr. Chairman, that in reviewing my records in the preparation of my statement today, I was induced to recall my testimony before the committee last April. At this time, H.R. 133, a bill to establish an accident prevention center, was under consideration. I stated in part:

*** had a center, such as proposed by H.R. 133 been in existence at the time legislation was enacted regarding refrigerators, many years of time required to obtain the results desired by the legislation would have been saved, to say nothing of the effort and the cost thereto.

The establishment of a central depository or clearinghouse for information and data as proposed by H.R. 133, I believe, would serve a vital and beneficial purpose.

In conclusion, I would respectfully ask to include the following documentation as exhibits:

The recently published Federal Safety Council's Guide.

Next, the press release from the Public Health Service dated May 8, 1959, urging parents to still view the new release devices with concern. Coverage of this release in the Washington Post and the Washington Star, the headlines of which read "Parents Warned on Refrigerators" and "Refrigerators Still Peril to Children."

An article in the Washington Post of April 1958 by Nate Haseltine who is a respected writer of national reputation on health and safety matters, in which he states in one paragraph—he is talking about the child behavior studies of 1957:

The results were sometimes ominous. Many of the 2- and 3-year-old children made no escape attempt at all. They showed far less fear—or comprehension—than the 4- and 5-year-olds. They would surely have suffocated had the "playhouse" been a real refrigerator.

An editorial from the Washington Star, on April 17, 1957, which reads in part:

A test of 201 children between 2 and 5 years of age, designed to study the reaction of a youngster trapped in a refrigerator has produced findings which do not make pleasant reading.

We hope that some good will come of the tests—that some lives will be saved through safety devices on new refrigerators. But the results were not specially encouraging. Only 97 of the 201 tested children were able to release themselves.



An article in the Washington Post of September 14, 1961, the title of which is "Light Found No Help in Refrigerator 'Trap' Tests," and in part says:

As in previous tests in 1957 in unit refrigerators, some children just sat and sat and would have suffocated had they been caught inside real refrigerators.

An article in the Washington Post, of March 17, 1963, entitled "Old Refrigerators Still Taking a Lot of Young Lives."

An excerpt from the Congressional Record of January 10, 1962, which deals with my participation in this effort, and I value it very highly and think that its content has some bearing on today's consideration.

That concludes my statement.

Thank you, Mr. Chairman.

Mr. ROBERTS. Thank you, Colonel, for your statement.

We are certainly happy to have you before the committee and I feel that the effort which you have made may well serve to alert parents and people generally. In fact, this is a continuing danger and we have not solved the problem. We must continue to make every possible effort to eliminate this danger.

I congratulate you again on the fine effort you have made and your acceptance by these important organizations as a valuable contributor to the safety effort that is being made in this respect.

I also would like to tell you that I, personally, appreciate your endorsement of my bill, H.R. 133, which would set up a type of accident prevention research center to coordinate and correlate the efforts of these various agencies.

I think you have very clearly pointed out that it has taken you many, many months and much time to contact the various segments of the Federal Government which deal with this general problem of safety. It has been my feeling for some time since accidents in the home, on the highway, and in industry and all the way across the board constitute the great loss of lives and money, we should make this type of clearinghouse available. We have not been too pleased with the endorsement of this idea that I have received from some departments of the Federal Government. While I respect their position, I simply think they are wrong.

We could save the taxpayers a great deal of money. I think we could have adequate storehouses of information for all the people in the Federal Government to go to. I would not want this center to displace the splendid effort that is being made by many private, nonprofit organizations, and I do not think it would have that effect.

I think one of the best examples I know of of a gap in this respect is the fact that the Interstate Commerce Commission which regulates the safety on the railroads and also on the highways in connection with interstate carriers, in many instances vehicles that travel in interstate commerce, has approved this type of clearinghouse and has said, although it sets up requirements for drivers who are employed in interstate commerce, it has no place in Federal Government where it can go and find this information.

We have made some effort in trying to curb the dangerous substances, hazardous substances, which are introduced in the home, either poisons, detergents, or perhaps some drug that is thought to be harmless and generally used in the home, and we have had fine cooperation from the American Medical Association in setting up poison centers in various hospitals throughout the country.

But there has still not been any great field there for reduction of injuries and saving of lives. Many of the things in use about the home, of course, could stand a great deal of improvement.

I know that you are pretty familiar with the fact that in poisons alone we have a very lethal weapon. There are many of these fields that I think an actual prevention research center would be of great value.

Again, I want to thank you for your statement and to say that, in my opinion, you performed a real public service in continuing your efforts to do something about this situation.

Colonel KIDWELL. Mr. Chairman, may I please reopen my statement briefly to refer to this icebox and some photographs that we have?

Mr. ROBERTS. I wanted to ask you about that before you left.

I was going to see if Mr. Nelsen had any questions and then I wanted to ask you if you would demonstrate to the committee how this toggle device is applied to the box and how it works, what it consists of.

Colonel KIDWELL. Well, this is the device. It is simply a combination of two very common articles that you can buy in a hardware store; a toggle bolt and a mending plate. On this lock-type refrigerator, which runs into the millions in use, if you want to take it out of use temporarily in vacant apartments or summer cottages and any other place where we read about the children being killed in when it is not abandoned but is going to be used again in a little while, you can insert the device in this built-in aperture and while it is installed the door can't close and trap a child.

When you want to put it back in use, you merely take a screwdriver and take it out.

Mr. ROBERTS. Now the base of the toggle that fits in the opening near the handle inside, would you show us just how that is inserted?

Colonel KIDWELL. It is pushed into the aperture and these wings collapse and expand catching the edge and then you tighten it up and you have this plate tightly secured to the panel as you see it here.

Mr. NELSEN. That is the same type of bolt you would buy to put into a plaster wall, for example, to hang a picture?

Colonel KIDWELL. Yes.

Mr. NELSEN. Available at any hardware store?

Colonel KIDWELL. Yes; that is the most common use of it. This is one of the new techniques that the Federal Safety Council advocated.

Mr. NELSEN. The question is, Is it a little difficult to get it out?

Colonel KIDWELL. No.

Mr. NELSEN. It spreads open?

Colonel KIDWELL. Well, it takes a little jiggling, I will say, but the size is not such that it makes it too difficult to remove.

Mr. NELSEN. Better not buy one that is too large; you may not get it out at all.

Colonel KIDWELL. That might be; but it is intended primarily for use by janitors and maintenance and other custodial personnel rather than individuals—unless he is a “do it yourself” owner like myself, who would select a proper size. That is the limit of its intended purpose but I think it is a good one because for years we have gone along ignoring these refrigerators in vacant apartments and summer cottages and the like and you pick up the newspaper all too frequently and see where a child has been killed under such circumstances.

The only other thing you can do is rip the gaskets off or drill holes in the cabinets which is not practical in such instances.

The Accident Prevention Division of HEW has taken some photographs to be used in connection with its distribution of safety material which I think may be of interest to the committee. Would it be your pleasure to have them held up to view?

Mr. ROBERTS. Yes, sir.

(Five blown-up photographs were then held up in order.)

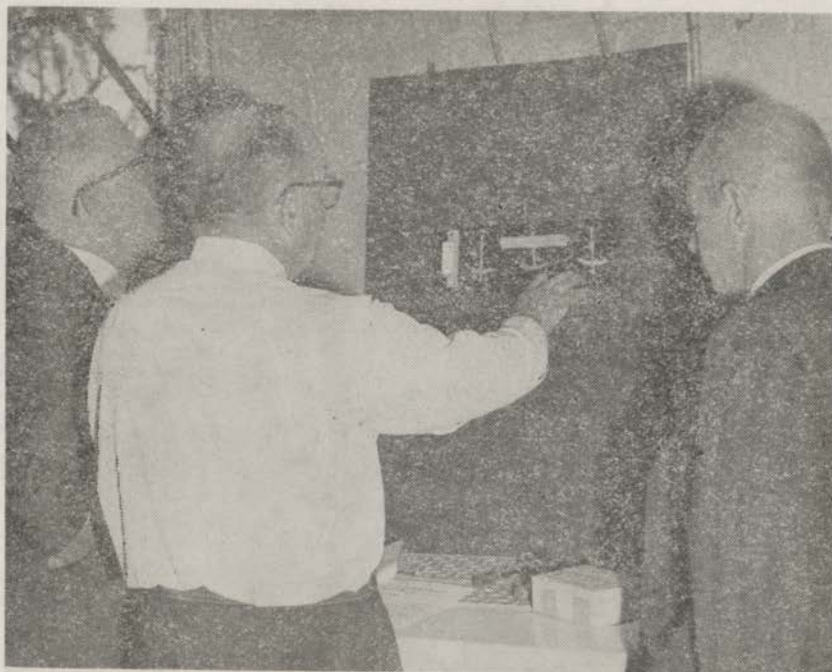
Mr. ROBERTS. If you have these photographs in a length of 8½ by 10, black and white, I would like to include them in the record of this hearing, if you can supply them.

Colonel KIDWELL. Certainly, sir.

(The photographs referred to follow.)



Colonel Kidwell attaching wood blocking after magnetic plate latch has been removed on refrigerator.



Colonel Kidwell with W. W. Taylor, Chief Visual Aids Section, and Walter U. Johnson, Chief, Community Services, Public Health Service, Division of Accident Prevention, showing toggle and plate device for reducing hazard of abandoned or temporarily out of use refrigerators.



Colonel Kidwell demonstrating how plate device can be attached to refrigerator door. W. W. Taylor, Division of Accident Prevention, looks on.



Colonel Kidwell holds necessary items for reducing hazard of abandoned and temporarily out of service refrigerators. W. U. Johnson, Public Health Service, Division of Accident Prevention, looks on.



Colonel Kidwell demonstrates device for Chairman Roberts.

Mr. WHITE. I would like to identify Mr. W. W. Taylor, of the Accident Prevention Division, who was holding the pictures.

Mr. ROBERTS. Thank you very much, Mr. White.

Any questions?

Mr. NELSEN. I have no questions except to add my thanks to the gentleman for his efforts in this area. I appreciate the colonel's efforts in this work.

Colonel KIDWELL. Thank you, sir.

Mr. ROBERTS. Mr. Brotzman?

Mr. BROTZMAN. I have no questions, sir.

Mr. ROBERTS. Thank you again, Colonel.

This will conclude the progress hearings on the safety of the refrigerator problem.

(The following statement was submitted for the record:)

STATEMENT OF THE GENERAL FEDERATION OF WOMEN'S CLUBS ON SAFETY LATCHES
ON REFRIGERATORS

The General Federation of Women's Clubs has been concerned for a long time over the tragic and needless deaths which occurred when young children, while playing in abandoned and out-of-service refrigerators and freezers, became trapped in them and suffocated because they could not get out once the door was shut.

Last year the death toll from this cause was the highest ever recorded, despite the fact that we have been aware for many years of this particular hazard to the safety of our children and also despite the fact that 36 States have made it illegal to discard a refrigerator in a hazardous condition.

The General Federation of Women's Clubs feels that the protection of children is of utmost importance and at its annual convention in June of this year, adopted the following resolution:

"Whereas the safety of children is continually menaced by faulty appliances, refrigerators, iceboxes, and plastic bags, and accessibility to dangerous drugs, cleaning agents, and other hazardous materials: therefore,

"Resolved, That the General Federation of Women's Clubs call upon its member clubs to initiate and promote actively programs for safety through inspection, education and legislation."

Mrs. Frederic J. Knorr, General Federation of Women's Clubs' safety chairman, has recently undertaken the project of distributing a quantity of "toggle and plate" safety devices to all the safety chairmen in the various States. These devices will be used as visual aids in safety conferences and demonstrations. These toggle bolts were supplied as a public service by the Star Expansion Industries Corp., of Mountainville, N.Y., through Col. Gaylord B. Kidwell, U.S. Army (retired), of Arlington, Va. Colonel Kidwell, as the committee is aware, has waged a long and commendable campaign in a private capacity to improve child protection from this danger.

Copies of the new safety guide, furnished by the Federal Safety Council in the Department of Labor, have also been sent to our State chairmen.

The General Federation of Women's Clubs applauds the improved protection that may be afforded by the standards under Public Law 930, but it feels that the child behavior studies which children under simulated refrigerator entrapment in 1957, and again in 1962, indicate that more improvement should be sought in future manufacture.

The law now requires that newly manufactured refrigerators shipped in interstate commerce must be equipped with safety devices so that a child who is entrapped may be able to open the door. This law does not, of course, offer protection to children so far as the old out-of-service refrigerators are concerned. It is up to each of us to publicize this potential death trap and educate the American public on how a very simple precaution can save the lives of children. The saving from tragic death of even one child would be more than worth any efforts we might take. The General Federation of Women's Clubs will certainly do its utmost in this direction and our concern over this problem will not be lessened until it has been solved.

(Whereupon, at 11:30 a.m., the hearing was concluded.)





