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# NATIONAL LP-GAS ASSOCIATION

1301 WEST 22nd STREET



OAK BROOK, ILLINOIS 60521

Phone: 312-986-4810

J. D. Capps  
EXECUTIVE VICE PRESIDENT  
AND GENERAL MANAGER

January 28, 1980

TO: MARKETER MEMBERS

SAFETY BULLETIN

The attached letter from the Consumer Products Safety Commission points out a potentially serious problem. It deserves your careful attention.

The flexible brass connector that is being discussed can be identified by the following information provided on its metal name tag:

APPLIANCE CONNECTOR  
MFD. BY COBRA METAL HOSE  
CHICAGO 32

AGA

AGA

Connectors of this design have not been manufactured since January 1, 1968, when the ANSI Standard Z21.24 for flexible connectors was revised to prohibit this type of construction.

A safety notice and an "If You Smell Gas" notice - - both developed by the Consumer Products Safety Commission are also attached.

The CPSC would welcome your suggestions. You may contact them direct or forward your comments to Walter H. Johnson or Dan Myers.

Cordially,

A handwritten signature in cursive script that reads "Jace", which is a common nickname for J. D. Capps.

J. D. Capps

JDC:emo  
Encls.

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Service  
Company  
of  
Colorado

P.O. BOX 840 · DENVER, COLORADO 80201

# News

February 21, 1980

EDITORS AND NEWS DIRECTORS:

Attached is the text of a statement by Robert T. Person Jr., vice president of public affairs for PSCo, at a news conference at 10 a.m. Thursday, February 21, 1980, at PSCo's headquarters building in Denver.

Also attached is a list of PSCo participants in the news conference and copies of letters from the Consumer Product Safety Commission and the American Gas Association relative to a potential consumer problem with flexible brass gas connectors which have soldered or brazed ends.

The purpose of the news conference was to alert natural gas users in the state to a potential hazard presented by some of these gas connectors. Although PSCo is not a manufacturer of these connectors, an investigation originated by two members of the company's safety division uncovered information about the connectors which the company has shared with the Consumer Product Safety Commission, the American Gas Association and the public throughout Colorado. The company's intention is to encourage extra vigilance but not to panic or unduly alarm gas users.

If you need additional information on this subject, please contact the Media Relations Division or your local Public Service Co. office.

Regards,

R. A. Burns  
Manager, Media Relations Division

NEWS CONFERENCE

STATEMENT BY ROBERT T. PERSON JR.

VICE PRESIDENT OF PUBLIC AFFAIRS

PUBLIC SERVICE CO. OF COLORADO

FEBRUARY 21, 1980

Before I begin a more formal explanation of our conference today, let me thank all of you for being with us. What we will discuss with you is a matter with which Public Service Company has tried to deal in a responsible and vigilant manner, so as not to create unnecessary and potentially harmful alarm among the people of Colorado. And it is in the interest of protecting the safety of natural gas users that we have asked you here today. The proper and informed perception of the public on this matter can only contribute to their safety.

Now let me discuss the situation with you.

Prompted by a notification by Public Service Co. of Colorado, the U.S. Consumer Product Safety Commission -- through the American Gas Association (a national trade association and laboratory) -- has alerted gas utilities throughout the country of a potentially defective product sometimes used to connect gas appliances.

Flexible, corrugated metal connectors are used to attach some gas appliances. In our service area, as in many parts of the country, flexible gas connectors are used mainly for gas ranges and gas dryers, but may also be used for wall stoves, space heaters and water heaters.

We are specifically concerned about a type of flexible gas connector that is a brass tubing with end fittings on both ends that have been soldered to the tubing. This type of connector -- with soldered or brazed end fittings -- has been manufactured by a number of product manufacturers, so that brand names are not necessarily a reliable indicator of defectiveness; and furthermore not all such connectors are defective.

(more)

Flexible gas connectors with soldered endings can fail as a result of deterioration which our lab tests indicate may be due to such possible factors as: the age of the connector...the sulfur and moisture which occurs naturally in gas...temperature...or movement of the appliance (and, thus, the connector) by the owner.

Tomorrow we will begin expanding our present gas safety campaign via advertising and statement enclosures to encourage our customers to contact us or the gas company which serves them if they smell gas. We will advise our customers that they should not move their appliances to inspect or repair a flexible connector. If they suspect they have a faulty gas connector, they should call a qualified plumbing or heating contractor, an appliance dealer or their gas company.

Here, then, are some further details which may be helpful in understanding this situation.

Last April, two of our safety division employees began to suspect a link between kitchen fires and the failure of flexible gas connectors. We notified the U.S. Consumer Product Safety Commission of our suspicions at that time, and again later in the spring. Our safety investigators continued to study the possible link, and in October we again advised the U.S. Consumer Product Safety Commission of the increasing evidence that kitchen fires and gas leaks could be due to the separation of soldered end fittings from the brass tubing of gas connectors. Working closely with fire department investigators across our service territory, we estimate that two explosions, 25 minor fires and 10 leaks are suspected to have been caused by this type of connector within the past year.

The U.S. Consumer Product Safety Commission subsequently notified the American Gas Association which, in December, notified its gas utility company members of the potential hazard.

In the meantime, PSCo stepped up its own laboratory tests, as we began field surveys of gas appliances. The results were available to us last Friday, February 15, and we immediately began making plans to notify our customers without unduly alarming them.

(more)

Our survey showed that approximately 43% of our customers have flexible gas connectors. We concluded from our field test that approximately six percent of the flexible gas connectors used by our customers are the type which might have deteriorated and could be defective.

These survey numbers translate into roughly 273,000 customers with approximately 567,000 flexible connectors of which 40,000 to 45,000 could possibly be defective. These numbers, I might add, are based on a statistical sampling and are rough estimates.

Our survey showed that the majority of problem connectors are likely to be found in homes that are 20 years of age or older. However, some defective connectors were also found in newer homes. We also learned that no gas connectors with soldered end fittings were manufactured after 1968. Similarly, these connectors may be found in commercial establishments.

Unfortunately, it is not easy to detect a faulty gas connector and we strongly discourage customers from trying to check for flexible connectors themselves. A plumbing and heating expert should do the job. Connectors may be defective under certain conditions and by moving an appliance or trying to examine the appliance connector, an individual could cause an otherwise safe connection to fail, creating an emergency.

We suggest that rigid piping is the best way to connect an appliance with a gas supply line. If rigid piping can't be installed, the best alternative to a brass connector with soldered end fittings is a flexible connector coated with protective epoxy that is gray to black and has screw-on end fittings.

Let me summarize, then, this very important message, for again, we sincerely need your help in responsibly conveying it to the public.

While there is no cause for alarm, there is cause for vigilance. First if you ever smell natural gas, open windows and doors for ventilation, leave the house, and call your gas company from a neighbor's phone. Second, if you don't smell gas, but believe that your gas appliance (such as a gas range or clothes dryer) may have been installed with a problem type flexible, corrugated metal connector, call an expert -- a plumbing and heating contractor, your appliance dealer, or us.

Thank you very much. I'll now be glad to answer your questions.

PARTICIPANTS IN PUBLIC SERVICE CO.

NEWS CONFERENCE

February 21, 1980

Robert T. Person Jr., Vice President, Public Affairs  
Jack Rouse, Vice President, Division Operations  
Eldon O'Neal, Manager of Safety  
Pete Midderts, Assistant to the Vice President, Gas Operations  
Ron Donovan, Manager of Division Operations

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DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT  
WASHINGTON, D.C. 20410

OFFICE OF THE ASSISTANT SECRETARY FOR  
HOUSING—FEDERAL HOUSING COMMISSIONER

IN REPLY REFER TO:

Mr. Richard A. Gross  
Executive Director  
U. S. Consumer Product Safety  
Commission  
Washington, D.C. 20207

Dear Mr. Gross:

This is in response to your January 2, 1980 letter to Deputy Assistant Secretary McHenry concerning corrugated metal connectors (brane name "Cobra") that allegedly caused a number of fires in dwellings.

There is a possibility that these connectors are in public housing projects. In order to warn Public Housing Agencies of their danger HUD will issue an appropriate Notice.

Thank you for the alert and if you discover other potential hazards which may be in public housing please notify us immediately.

Sincerely,

Jack R. VanNess  
Director  
Technical Support Division

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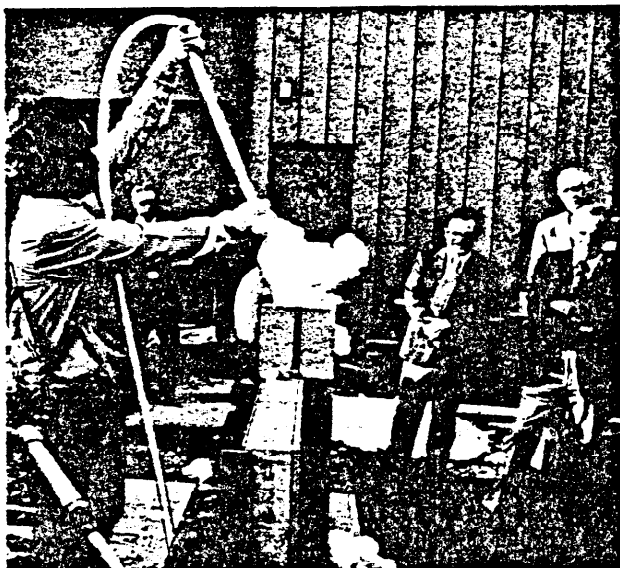
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# CPSC memo

MAY  
1980

FROM THE U.S. CONSUMER PRODUCT SAFETY COMMISSION, WASHINGTON, D.C. 20207



Doug Forslund of Dynafoam, Media, Pa., demonstrates the application of urea-formaldehyde foam insulation to a concrete block panel during technical workshop on formaldehyde conducted by CPSC in April.

## HAZARDS STUDIED AT FORMALDEHYDE MEET

Delegates from eight foreign countries joined representatives from America's industrial and scientific communities at a technical workshop on formaldehyde last month sponsored by the U.S. Consumer Product Safety Commission.

The three-day workshop at the Gaithersburg, Md., campus of the National Bureau of Standards, produced an estimated 600 pages of testimony on the chemical properties of urea-formaldehyde resins, and the techniques of measuring formaldehyde concentrations in the home.

The 145 persons attending heard presentations from 35 speakers on the release of formaldehyde from wood products and urea-formaldehyde foam insulation. Emphasized were the importance of proper installation in minimizing formaldehyde exposure, the reliability of measurement techniques used to determine formaldehyde concentrations in the air, and the chemical techniques and processes employed by manufacturers to alleviate the formaldehyde problems.

While there are some unanswered questions delegates said the workshop raised many issues important to solving problems involving formaldehyde. Among the issues spotlighted were:

1. Factors that should be considered by installers before proceeding with the manufacture of urea-formaldehyde foam insulation on site;

*continued page 2*

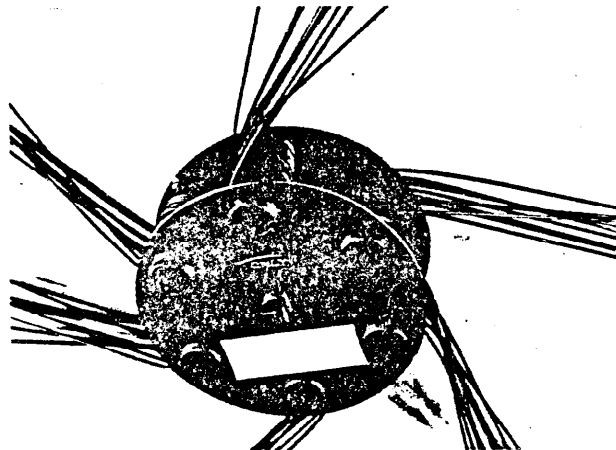
## NEW EXPORT POLICY ANNOUNCED BY CPSC

Exporters of products declared unsafe by the U.S. Consumer Product Safety Commission and not allowed on U.S. markets will now have to notify CPSC of their intent to export such products, as a result of regulations approved in April by the Commission.

In addition, they must tell CPSC certain details of the exports — most importantly, the identity of the firm which will receive these products in the importing country.

Under the terms of the new policy, all U.S. exporters of the hazardous products must notify CPSC at least 30 days before they expect to ship the products; during this time CPSC will inform the recipient foreign government of the shipment and also provide the name of the consignee. Officials of the receiving country may then make an informed judgment as to whether to permit entry of these goods which do not comply with CPSC safety and health standards.

*continued page 2*



Rotary paint strippers, similar to the one pictured above, have been involved in serious injuries to users when the wires have spun off during use.

## PAINT STRIPPERS TO HAVE WARNING LABEL

A voluntary program to place a warning label on rotary paint strippers, which may cause serious injuries to users, is being carried out by the manufacturers and distributors of these products in cooperation with the Consumer Product Safety Commission.

CPSC staff is recommending that several manufacturers and distributors of rotary paint strippers affix labels to the unit, the packaging and the instructions which

*continued page 2*

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Among CPSC personnel who fought to reduce the backlog of Hotline calls about aluminum wiring was Executive Director Richard A. Gross.

## ALUMINUM WIRE CALLS FLOOD CPSC HOTLINE

In the first hour after a 10 p.m. April 3, 1980 ABC-TV news program last month citing the possible fire hazards of old technology aluminum wiring used in American homes, more than 20,000 consumers tried to call CPSC on the agency's toll-free Hotlines.

Hotline staffers were on duty and ready for the calls. Alerted by the network, they had watched the late evening national telecast of ABC's "20/20" program and were prepared to answer their phones which began ringing immediately. The staffers answered calls until 3 a.m. the following morning.

CPSC staff were unable to answer many of the more than 20,000 calls during those first hours, and the callers often heard a busy signal. Only 16 toll-free lines lead into CPSC's hotline service, so only 16 calls can be answered at any one time. Ken Giles, chief of the consumer services branch, said the telephone company reported that the flood of calls to the CPSC hotline caused mechanical blockages in the phone company's system on the East Coast.

The number of calls declined to about 5,000 a day by April 20, the phone company reported. CPSC's hotline staffers, assisted by volunteers from other CPSC divisions, receive and handle about 1,500 of these calls daily. They have been staffing the phones from 8:30 a.m. to 8 p.m. Monday through Fridays, and on Saturdays from 10 a.m. to about 3 p.m.

Some of the more technical questions being asked by callers are being answered by CPSC's Bob Kelly, a licensed master electrician, and by staff engineers. Kelly is a retired District of Columbia Fire Department official. He

## UTILITY BILL WARNING AVERTED HOME TRAGEDY

A U.S. Consumer Product Safety Commission safety message in a gas company utility bill is credited with averting a possible tragedy to a Colorado family.

According to a report filed with the Public Service Company of Colorado, it was Easter Sunday morning when the housewife started dinner preparations. When she opened the cabinet beneath the gas range, she detected an odor and heard the hissing sound of escaping gas. The husband promptly shut down the master valve on the gas line and called the utility company. Repairs were made and no injuries or damages were sustained.

Source of the problem was a flexible gas connector which was the subject of a warning distributed by Public Service Company of Colorado to all its gas customers in March of this year. Having read of the warning, the housewife assumed that the hose connecting the range to the gas line was at fault. After the gas was turned off, the hose fell off at each end of the connector while she examined it.

CPSC's involvement dates back to the fall of 1979 when the agency joined with the American Gas Association to urge member gas firms throughout the nation to warn consumers about potential hazards of a flexible corrugated metal connector used to attach gas appliances to household gas lines. The safety warning noted that the connector hoses were in use at a number of gas leaks and fires, and suggested that consumers should have all such connectors inspected by plumbing and heating contractors or the gas company.

If there is a suspicion of any gas leaks, immediately extinguish all flame sources in the house, open the windows, and summon the gas company. CPSC warns that consumers should not attempt to move the appliance to determine if they have a faulty connector. This could actually cause an otherwise safe connection to fail.

reviews the information sheets prepared on each Hotline call at regular intervals each day. As time allows, he and others call individual consumers whose questions appear to be of immediate concern.

A new method for connecting aluminum wiring systems by permanently crimping short leads of copper wire to the ends of the aluminum wire has recently been developed. Under this method the copper lead is connected to the switches, receptacles, fixtures, or appliances in a normal fashion and a crimping method is used to connect the copper and aluminum wiring. In the view of the Commission's staff, this method of connection will reduce the fire hazard in the "old technology" aluminum-wired houses.

This method requires power-driven, high pressure tooling which should be operated by a specially trained electrical contractor. The tooling and information essential to this technology may not yet be available in many areas. At present, the Commission staff is aware of only one manufacturer who is marketing the tools and components for this type repair to the residential market. For further information regarding this type of repair, consumers may wish to write directly to the manufacturer - AMP Special Industries, Valley Forge, Pennsylvania 19482.

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Memorandum

TO : Doug Noble, Office of Program Management  
 Thru: Edwin F. Tinsworth, Associate Executive Director, *T*  
 Field Operations  
 FROM : Drucie Besley, Field Operations Staff

DATE: August 1, 1980

SUBJECT: Cobra Gas Connector Notice

Per your request on the 7/29 Conference Call, each Regional and District Office surveyed employees to see who had seen a notice in their gas bill regarding cobra gas connectors. We received the following results:

Office	Yes, have seen notice	No, haven't seen notice	Not Sure
Atlanta	3	14	3
Boston	0	9	0
Chicago	1	31	0
Cleveland	0	20	1
Dallas	1	22	0
Denver	8	0	0
Kansas City	0	18	0
Los Angeles	3	?	0
New York	12	11	0
Philadelphia	0	17	0
San Francisco	2	20	0
Seattle	1	2	0
Twin Cities	0	12	0
	<u>31</u>	<u>176</u>	<u>4</u>

It should be noted that both Seattle and New York only surveyed employees with gas service. One of the most common comments made during the surveys was that a majority of people receiving gas bills simply pull the bill out of the envelope and discard all other inserts without looking at them. This might account for the low number of people who recall seeing the notice.

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300 Boulevard, Arlington, Va. 22209  
(703) 841-8600

George H. Lawrence

December 19, 1979

SAFETY BULLETIN

TO: ALL DELEGATES OF A.G.A. MEMBER COMPANIES

A.G.A. has been notified by the Consumer Product Safety Commission (see attached letter) of the potential failure of certain flexible metal connectors manufactured prior to 1968. The potential for failure appears to increase with the length of time the connector has been in service.

The connectors in question were manufactured with a button type end brazed directly to the corrugated tube. This design is recognizable by the fact that the tubing nut is not tapered and does not resemble a flare tube fitting such as those connectors used in refrigeration or automotive applications.

A.G.A. listed connectors of this design have not been manufactured since January 1, 1968, when the ANSI Standard Z21.24 for flexible connectors was revised to prohibit this type of construction.

Attached for your information is a portion of a service bulletin initially used by one utility to alert appropriate personnel to this potential problem. It is suggested that if necessary, you promptly initiate appropriate corrective action within your company.

The Consumer Product Safety Commission has asked for our suggestions for any subsequent Commission actions and Roy Siskin, Director, Operating & Engineering Services, A.G.A., 703/841-8451, will coordinate any suggestions you might have or you may wish to contact CPSC directly. Please contact Mr. Siskin if you have any questions.

Sincerely,

George H. Lawrence

GHL:eh

Enclosures

cc: A.G.A. Customer Service Committee

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American Gas  
Association

1515 Wilson Boulevard, Arlington, Va. 22209  
Telephone (703) 841-3400

March 26, 1980

President

TO: CUSTOMER SERVICE DEPARTMENT MANAGERS  
CUSTOMER ACTIVITIES COMMITTEE  
CUSTOMER AND UTILIZATION COMMITTEE

On December 19, A.G.A. notified Member Company Delegates of the potential for failure of certain flexible metal connectors manufactured prior to 1968. The Consumer Product Safety Commission requested A.G.A. notify your company of this potential hazard and to ask that if you believe the connectors of the type described in the various attached bulletins were used in your service area that you initiate appropriate corrective action.

Some member companies have informed us that they have enclosed as bill stuffers notices similar to that suggested by CPSC or that the connectors are not in use in their service areas. Additional member companies have taken various other corrective actions or have requested additional information on methods to identify the connectors with the potential to fail. In order to assist you in locating connectors which may potentially fail, we have prepared the additional attached information for your use.

We would appreciate receiving any information concerning this problem that you feel might be of assistance to other companies in a similar situation. We, therefore, are distributing this material and would encourage that you contact Mr. Roy Siskin, Director, Operating and Engineering Services, A.G.A. (703/841-8451) if you desire additional information or if you have any suggestions for subsequent Commission action.

Sincerely yours,



George H. Lawrence

GHL/tdt

Enclosures

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U.S. CONSUMER PRODUCT SAFETY COMMISSION  
WASHINGTON, D.C. 20207

December 14, 1979

Mr. George Lawrence, President  
American Gas Association  
1515 Wilson Boulevard  
Arlington, Va. 22209

Dear Mr. Lawrence:

The Consumer Product Safety Commission staff has learned of the failure of a corrugated metal connector (brand named "Cobra") which was produced between 1955 and 1965 by a Chicago-based manufacturer that is no longer in business. This connector was certified by the AGA Labs as conforming to the requirements of the then existing American National Standard issued by the ANSI Z-21 Committee. The failure of this connector has allegedly caused a number of fires in homes in one particular service area. We have reason to believe, however, that since this type of connector was used in other areas of the country, that similar problems could develop elsewhere.

In light of the above, the Commission staff requests the assistance and cooperation of the American Gas Association in notifying all of the gas utility companies and in recommending a course of action that will be appropriate to the degree of this potential hazard. We understand that this connector was not permitted to be installed in some jurisdictions and that this type of connector has been replaced in other areas. We believe, however, that many connectors of this type may still be in service, and therefore may be susceptible to creating a significant hazard to the occupants of those residences equipped with such connectors.

The staff of the Commission has developed a statement (enclosed) that is designed to inform the occupants of residences of the need to be aware of the potential for failure of this type of corrugated metal connector and to appropriately respond to any sign of a gas leak. We believe that such a statement should be issued to alert gas company customers to the hazard without causing undue alarm or encouraging homeowners to attempt to correct any problem by themselves.

If the gas utility companies choose not to issue such a notice, yet have reason to believe that these connectors are still in use in their service areas, we would recommend that they immediately provide the enclosed "If you smell gas" notice to all of their customers and perhaps take ads in the newspapers in their area similar to the one enclosed.

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American Gas  
Association

1515 Wilson Boulevard, Arlington, Va. 22209  
Telephone (703) 841-8400

September 26, 1980

Mr. Douglas Noble  
Office of Program Management  
420 B  
Consumer Product Safety Commission  
Washington, D.C. 20207

Dear Doug:

As you requested, I am enclosing a copy of A.G.A.'s March 26, 1980 notice concerning the potential for failure of certain flexible metal connectors as well as the attachments to that notice. A.G.A. repeated the message of the December 19 "Safety Bulletin" sent to all A.G.A. member companies along with the December 14 letter from the CPSC concerning Cobra metal connectors. Our March 26 notice and safety bulletin was expanded to assist in identifying those additional connectors which have shown a potential for failure (not limited to the Cobra connector alone). This notice was mailed to the Customer Service Department Managers as well as A.G.A.'s Customer Activities Committee and Customer and Utilization Committee.

The Association continues to carry in its Directory of Certified Appliances and Assessories a special announcement concerning flexible metal connectors and advising those who desire further information to contact their local gas company who have been supplied with the various technical notices and information. Our Directory receives a wide distribution in the gas industry as well as other interested persons.

A.G.A. would be willing to assist you in the distribution of further notifications of importance to the gas industry or to meet with you or Commission personnel to discuss further appropriate action if you believe it would be helpful to the Commission. We would appreciate information which you might obtain from manufacturers of flexible metal connectors concerning their effort and knowledge in the area.

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Mr. Douglas Noble  
Page Two

- September 26, 1980

I am enclosing a July 1, 1980 Directory of Certified Appliances and Accessories for your information. Page 482 of that Directory lists the manufacturers and appliance connectors tested under American National Standard Z21.24 and page 491 lists those connectors tested under American National Standard Z21.45. The notices discussed above are on page xi of the Directory under "Special Announcements."

If I can be of any further assistance to you in this matter, please contact me.

Very truly yours,

*Kevin B. Belford*

Kevin B. Belford  
Deputy General Counsel

KBB/tdt

Enclosures

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AUG 18 1980

Catherine C. Cook, Director, CEPD  
THROUGH: D. Schmeltzer, AEDC&E  
THROUGH: Bert G. Simson, Director, OPM  
Douglas L. Noble, Program Manager for Emerging Hazards,  
Office of Program Management

Additional Reports of Potentially Defective Gas Connectors  
for Appliances

On August 15, 1980, I contacted representatives of the Public Service Company (PSC) in Colorado to obtain information on two gas connectors, in addition to "Cobra" brand-named connectors, which were reported to be the cause of serious gas leakage while in service.

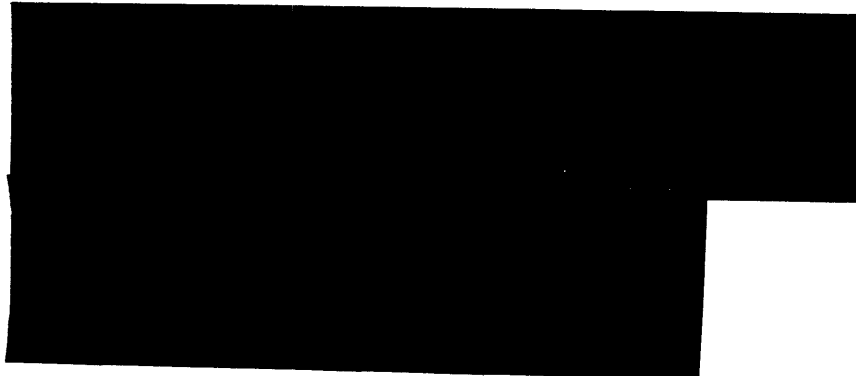
I contacted Mr. James Shumaker at PSC who told me that PSC had completed a survey of flexible connectors in its service area. PSC determined as a result of this survey, that a total of nine (9) various brands of connectors, other than Cobra, were potentially defective due either to a common construction feature, or to a tendency to corrode at an accelerated rate.

The connectors in question all share the common construction feature which provides for the end ferrules being soldered to the bellows section by only its wall thickness, which allows only a minimum of strength. (See attached diagram.)

I was referred by Mr. Shumaker to Mr. Ron Donovan, also of PSC, when I asked if copies of the survey results were available. Mr. Donovan told me he would look into the matter and have someone call me on Monday, August 18, 1980.

At this point, I only have the names of the manufacturers who produced the connectors cited by the survey:

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I will provide you with more information when Mr. Donovan's office contacts me on August 18, 1980.

I have requested that this memorandum be marked RESTRICTED.

Attachment

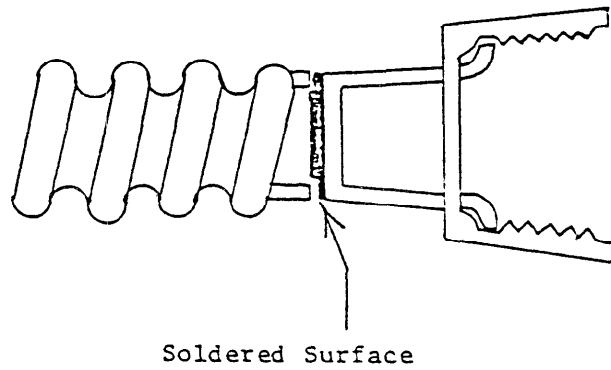
cc:

M. KATMER, CEPD  
R. KOESER, EO-S

OPM:Dirjoble:lrh:8-18-80

Common Construction Feature of Potentially  
Defective Connectors

Cross Sectional View



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9/80

Reaction to request for consideration & issuance of new letters.

Jack Valdez at National LP Gas Association

- believes his association would be willing to cooperate but membership would prefer if the action were taken in form of recall just because of sheer volume of gas connectors that might have to be checked if <sup>other</sup> no specific info. is available than time of mfr.

Kevin B. Belford at AGA

- would be willing to cooperate but has sent out at least 2 subsequent notifications; the last one, which he will copy me on, addressed the problem generally. The cost to their members can be considerable e.g. So. Calif. Utility spent millions of dollars carrying out their notification and inspection campaign. Would ~~be~~ suggest that any new campaigns include manufacturers also.

Archie M. Verriss at American Public Gas Association

- would reserve making any commitments until he had seen suggested wording and put it before his organization's executive council

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COPY OF  
UTILITY COMPANY SERVICE  
BULLETIN

Subject:

Flexible Brass Range Connector Failures

The occurrence of failure, while in use, of the "Cobra" brand-name, brass flexible connector, has become increasingly common. The type, age and construction all appear to be nearly the same in each case.

This particular brand of connector, although no longer in production, has been involved in at least two fires and several bad leak situations. It can be identified by the following information provided on its metal name tag:

APPLIANCE CONNECTOR  
MFD. BY COBRA METAL HOSE  
CHICAGO 32

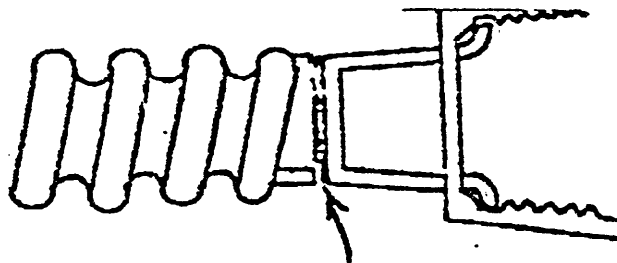
AGA

AGA

Note: This connector was manufactured prior to 1967.

Recently, two (2) other brand name connectors, utilizing the same general type of construction, have been found to be the cause of serious gas leakage while in service.

The connectors in question all share the common construction feature which provides for the end ferrules being soldered to the bellows section by only its wall thickness, which allows only a minimum of strength. (See diagram below.)



Action:

Soldered Surface

If connectors with this type of construction are encountered while on the job, the customer should be made aware of its history of failure, due to its end ferrule separating from the corrugated main section of the connector.

Figure 2A

Soldered sleeve joint

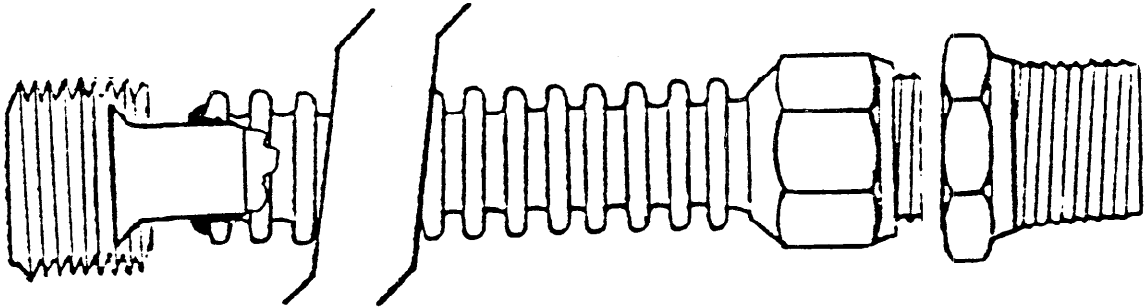
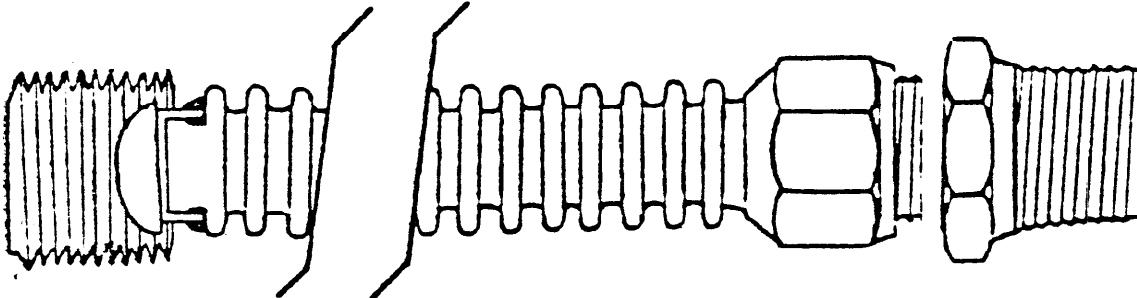


Figure 2B

Soldered sleeve joint



Note that the sleeve as shown in Figure 2A may be either internal or external to the body of the connector.

Butt joint construction was prohibited effective in 1959 for connectors design certified under ANS Z21.24 because of reported field failures due to end separation at the soldered joint.

While sleeve joint construction was recognized as superior to butt joint in terms of mechanical strength, both butt joint and sleeve joint type construction proved susceptible to failure if fabricated using solder containing phosphorus.

Connectors with soldered end fittings which are not plastic coated may be connectors with the potential for failure.

Potential failures have not been reported in connectors of one piece construction regardless of presence or absence of plastic coating or year of manufacture.

Any connector not having the year of manufacture stamped on the name band is 19 or more years old.

# **Attention** **Safety Notice**

## IF YOU SMELL GAS

Natural gas is odorless in its original state, BUT - we add a disagreeable smell to make it easily detectable in the rare case any should escape.

Gas leaks can occur from various sources - loose connections, defective appliances, gas services lines either within or outside your home, or from leaking gas mains. Gas can be dangerous and should be dealt with promptly by experts.

IF YOU EVER SMELL GAS - CALL ----- Gas Company immediately at ----- . If the odor of gas is strong and persistent - and you are indoors, extinguish any candles, cigarettes, or other open flames, ventilate immediately by opening nearby outside doors or windows. Go outside. Call us from a neighbor's house.

IMPORTANT - do not turn electric switches ON or OFF, do not smoke or strike matches, do not create any source of combustion.

Recently the U.S. Consumer Product Safety Commission, through the American Gas Association brought to our attention the fact that some types of corrugated metal hose (usually made of brass) used to connect appliances to household gas lines may have deteriorated with time and become defective. Some made with brazed or welded end fittings have been reported to be responsible for gas leaks and fires. Some connectors of this type may have been used in this area.

If you had a gas appliance installed in your home between July 1955 and July 1966, it may be installed with the type connector which, under certain conditions, could be unsafe.

If you believe you had a gas appliance with a corrugated metal hose installed at about that time, please complete and return the enclosed post-paid postcard indicating when and by what plumber or dealer it was connected. We will make an appointment to have a service representative call to examine your installation. If a suspect connector is located, we will suggest how you may wish to have it replaced.

## WARNING

Do not attempt to examine or move any gas appliance yourself. You could cause an otherwise safe connection to fail creating an immediate emergency.

REPEAT - do NOT attempt to move your gas appliance to inspect the gas connection.

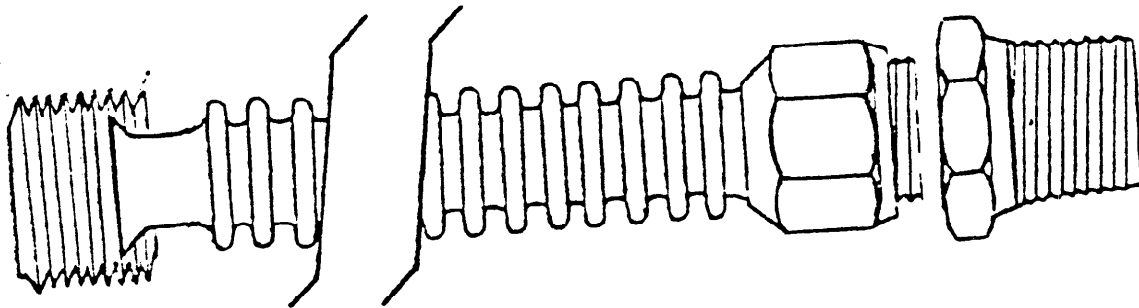
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Some soldered joint connectors have been fabricated using silver brazing alloys which do not contain phosphorus. Such connectors have not been reported as being subject to the type of failure described in the Safety Notice suggested in the CPSC letter attached to the A.G.A. Safety Bulletin.

So called "one-piece" construction (Figure 3) appeared about 1961 or 1962. By the mid-1960's, it had been adopted by most manufacturers for part if not all of their production.

Figure 3

One Piece Construction



Some corrugated brass connectors are "plastic coated" to protect against external corrosion. Plastic coating has been available as a premium since the late 1950's or early 1960's.



# PLAY IT SAFE.

## Some basic precautions for using natural gas safely

Inspect your chimney and flue pipe to make sure they are in good condition and provide a good draft. A clogged chimney is a hazard.

Never allow an addition to be built on your home without first being sure no gas lines are underneath it.

If you cover your chimney flue with wire screening to keep out birds and leaves, be sure to use coarse (half-inch or larger) wire mesh. Finer mesh can clog and become hazardous.

Your gas furnace and water heater must be properly vented to the outside of the building with a sufficient flow of air available at all times in and around this equipment. If you have any doubt about this, have them checked by a qualified heating contractor, at once.

Always keep the area near your furnace free of paints, solvents, papers, rags and other combustibles.

### If you smell gas...

Although natural gas is odorless in its natural state, we add a disagreeable smell to make it easily detectable in case any should escape.

Gas leakage may occur from faulty appliances, loose connections, service lines inside or outside your home, or from gas mains. Such leakage can be dangerous and should be dealt with promptly by experts.

If you ever smell gas—even if you do not use it in your own home, call Frederick Gas immediately at 662-2151.

If the odor is very strong and you are indoors, open windows and doors to ventilate. Go outside. Call us from a neighbor's house.

Do not turn any electrical switches on or off. And do not light matches, smoke cigarettes or create any source of combustion.



## Frederick Gas

FREDERICK GAS COMPANY

The Energy Shortage is A Natural Gas Shortage.

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**FILE**

October 17, 1980

Mr. Thomas Lietch  
Director of Product Certification  
American Gas Association  
8501 E. Pleasant Valley Road  
Cleveland, Ohio 44134

Re: CPSC HEB 81-2526

Dear Mr. Lietch:

You may recall that in 1979 the CPSC informed the American Gas Association of a potential safety problem involving one or more manufacturers of gas appliance connectors (flexible metal hoses). A number of home fire incidents were reported to the Commission as being associated with the deterioration of the "Cobra" gas connector or other unidentified brand connectors. These connectors were installed in homes or residences more than 10 years ago. The Cobra Metal Hose was certified by AGA and was manufactured to conform with an ANSI standard that was later revised in 1967. Our information indicated that the gas appliance connectors were failing at their soldered ends. This identified a defect which was associated with the pre-1967 standard.

As a result, AGA notified its gas utility company members of the gas connector problem in December, 1979. Despite this gas company/consumer notification program, the Commission has learned of other recent gas leak or fire incidents involving gas connectors either not identified or identified as other than "Cobra." Also, nine gas connector brands have been identified during a gas company survey as being potentially defective due to their common construction or the tendency to corrode.

The manufacturers of these gas connectors are as follows: [REDACTED]

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Page 2'  
Mr. Thomas Lietch  
American Gas Association

In order to obtain the scope of the problem regarding the old style gas appliance connectors, (manufactured prior to the 1967 ANSI standard revision), CEPD request that you identify all firms (name and address) who were certified by AGA to manufacture the old style gas appliance connectors. Also, please provide information regarding the current status of these firms (in business, out of business, change of name or address, etc.). Finally, please indicate whether the nine firms identified above manufactured the old style gas appliance connector.

Sincerely,

John K. O'Connor, Chief  
Hazard Evaluation Branch  
Product Defect Correction Division

By: Timothy Jones

cc: File  
Reading  
Chron  
CEPD TJONES:cf 10/17/80

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# Memorandum

TO : File  
 Through: Assoc. Exec. Director for Compliance & Enforcement *DATE: October 31, 1980*  
 Through: Catherine C. Cook, Director, CEPD *CC*  
 FROM : Through: Marvin Everhart, Acting Chief, HCB/CEPD *ME*  
 Through: Lynn S. Lichtenstein, Staff Attorney, CEPD *LSL*  
 Elizabeth Haught, Project Officer, HCB/CEPD *EH*

SUBJECT: ID 79-172 Masco Corporation  
 Gas Connectors

### Action

Close file - Class II

### Significant Dates

- Date of Report: June 6, 1979
- Date ID File Opened: July 20, 1979
- Date Corrective Action Begun by Company: June 6, 1979
- Date Area Office Submitted Close Out Recommendation: August 18, 1980

### Number of Products Involved and Corrected

	<u># Involved</u>	<u># Corrected</u>
• Total		
• with manufacturer		
• with distributor		
• with plumbing contractors		
• or installed		

### Background

The product consists of varying lengths of epoxy coated brass tubing with gold anodized 1/2 inch steel flare nuts attached to each end. The company reported a possible defect in its Ameri-Flex Model 4G series gas connector manufactured between March 19, 1979 and April 17, 1979. According to Masco, the gas connectors may be subject to shearing or weakening when the gas connector nut is tightened onto the adaptor. The damaged or weakened gas connector may result in gas leakage.

The defect was discovered during a routine installation. No incidents or injuries have been reported to the company.

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