

ALASKA LEGISLATURE COMMITTEE FILES 1993-1994 8672

8250 SENATE COMMUNITY & REGIONAL AFFAIRS

Sponsor Statement
HB 467
Rep. Eileen P. MacLean

HB 467 makes changes to the Rural Loan Program of the Alaska Housing Finance Corporation in order to increase the availability of loan services and to encourage more investment in rural housing.

Current law does not specifically authorize regional housing authorities to originate or service loans in areas where AHFC has a regional office. This prevents housing authorities in Fairbanks, Kotzebue, Nome, Bethel, Dillingham and Juneau from generating and servicing loans for AHFC. Some of these authorities are located in areas with the greatest need for new housing.

Housing authorities often have more contact with villages and a better understanding of local conditions in remote areas. Many authorities are involved in HUD housing projects in the outlying communities. This makes them ideally suited to handle AHFC loans. HB 467 would authorize this practice in statute.

The bill also encourages greater investment in rural housing by allowing owner-occupants to finance up to four units in a complex and by allowing owners to inhabit larger rental complexes.

Finally, HB 467 allows AHFC to increase its participation in projects with unusually high water and sewer installation costs without reducing the amount of the federal contribution to such projects.

HB 467 has a zero fiscal note and is supported by AHFC and builders throughout the state.

DIVISION OF LEGAL SERVICES

**LEGISLATIVE AFFAIRS AGENCY
STATE OF ALASKA**

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Juneau, Alaska 99801-2105

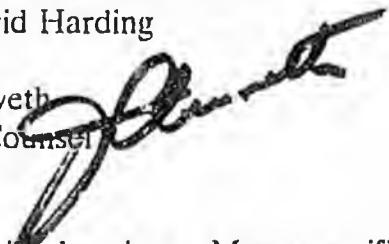
MEMORANDUM

February 17, 1994

SUBJECT: House Bill 467 -- Sectional analysis (Work Order No. 8-LS-1613\E)

TO: Representative Eileen MacLean
ATTN: David Harding

FROM: Jack Chenoweth
Legislative Counsel



The measure deals, generally, with housing. More specifically, it modifies key elements or features of housing programs of the Alaska Housing Finance Corporation that operate in rural areas and authorizes regional housing authorities to serve as seller-servicers of loans in the state's small communities.

Bill section 1: This section, an amendment to AS 18.55.997 relating to the powers granted to regional housing authorities, (1) would add to the powers currently granted that of originating and serving residential housing loans (in AHFC parlance, it would grant the regional housing authorities the status of "seller-servicer" of AHFC loans) and (2) expands the authorities' ability to operate geographically by substituting reference to "small community" for "rural" and by eliminating the limitation that restricts program operations to parts of the state outside of "an area where the corporation has a loan office."

Bill section 2: The substantive amendment made in this bill section incorporates reference to the exception made by AS 18.55.998(f).

Bill section 3: Under current law, the portion of the grant that may be made by AHFC for residential housing for which financial assistance is to be provided by the U.S. Department of Housing and Urban Development is limited to 20 percent of the total development cost per unit. This bill section proposes an exception under which the AHFC contribution may increase to as much as 30 percent of total development cost per unit if the corporation determines that "costs of installation of safe and sanitary on site sewer and water facilities to serve [the] residential housing" would cause the total project cost to exceed the 20 percent limitation on total development cost per unit. The draft intends no reciprocal reduction or loss in the amount of

support by the federal agency, only an increase in the AHFC contribution to try to be responsive on these additional water and sewer installation costs.

*

The remainder of the bill makes changes in the current "nonowner-occupied" housing program of the Alaska Housing Finance Corporation. The nonowner-occupied housing program now limits financial assistance to each of the following **in which the owner may not reside**: single-family units and multi-plex buildings containing up to eight units. As its name implies, the AHFC program chiefly supports the development of rental units. The changes made in the following sections are intended to remove the restriction imposed on owner-occupancy in order to allow the owner to occupy. Since the program could no longer properly be styled "non-owner occupied housing," the bill proposes to describe it as "rental" housing.

Bill section 4: The changes made in this bill section are technical. Since the nature of the changes made in the following bill sections is to remove the restriction on owner-occupancy (and the program ought not, therefore, to bear the name "nonowner-occupied" housing), the revision on page 4 restates the current restriction on total AHFC loans in terms that reflect the change.

Bill sections 5 and 6: AS 18.56.580 now sets out the "non-owner occupied housing program." The amendments in the respective sections substitute reference to "rental" for reference to "nonowner-occupied" to describe this program.

Bill section 7: The changes (1) substitute the term "rental housing" for "non-owner occupied housing"; (2) expand the limitation on the number of eligible multi-plex units from 8 to 16; (3) permit the owner to occupy one of those multi-plex units; and (4) limit the program to operating in the state's "small communities," a term already defined for purposes of these housing programs. See AS 18.56.600(2), set out in the bill's section 8.

Bill section 8: The amendments (1) broaden, in subparagraph (A), the definition of "housing" for purposes of certain other AHFC programs to cover owner-occupied housing with as many as four units under one roof (the limit in the current definition is two units), and (2) excludes, in subparagraph (B), assistance under the various other AHFC programs for development of housing units that would be built under the former "non-owner occupied", now retitled "rental," housing program of AS 18.56.580. The purpose of subparagraph (B) is to preclude a prospective borrower from being eligible under the various housing assistance programs.



520 East 34th Avenue
Anchorage, AK 99503-4199
(907) 561-1900

P.O. Box 101020
Anchorage, AK 99510-1020

To: House CRA Committee

From: Robert L. Brean
Director, Rural Housing
AHFC

RE: Agency comments on HB 467

AHFC feels that HB 467 is a positive pro-active bill that provides for flexibility and consideration of the Rural Housing programs providing service to Rural Alaska.

Rural Housing has worked jointly with Rep. MacLean and her staff to provide for the elements of HB 467 which are as follows:

1.) The Regional housing authorities statewide would be authorized through HB467 to originate and service residential loans in small communities in their respective regions. This provision further empowers the regional housing authorities to provide service in their region with the support of AHFC as apposed to AHFC attempting to duplicate a service at a local and regional level. AHFC supports and advocates this concept.

2.) AHFC,s Rural Housing Programs would be authorized through HB 467 to increase the allowable match of the Housing and Urban Development Grants to the Regional Housing Authorities from 20% to 30% on a case by case basis. Presently the Supplemental Housing Grant Program provides a 20% match to HUD,s total development cost of housing units in Rural Alaska. In some cases the 20% match is insufficient to provide for adequate water and sewer systems. This provision of the bill increases the allowable match to go up to 30% on a case by case basis for water and sewer features. AHFC supports and advocates this concept.

3.) AHFC,s Rural Housing Programs would be authorized through HB 467 to expand the definition of " rental housing" from eight units to sixteen units and allow the owner to occupy the complex in order to provide for on site operation an maintenance and protection of the owners investment. This action enhances local economic development opporrunities throughout Rural Alaska. AHFC supports and advocates this concept.

4.) AHFC,s Rural Housing Programs would be authorized through HB 467 to expand the definition of " housing" to mean a dwelling containing up to four units as apposed to a dwelling containing up to two units. This definition also allows for the enhancement of local economic development opportunities throughou+ Rural Alaska. AHFC supports and advocates this concept.

In general we feel that this legislation is positive, constructive, and promotes the local economies and well being of Rural Alaska. We recommend support of HB 467.

National Bank of Alaska



Mortgage Loan Department P.O. Box 107025 Anchorage, Alaska 99510-7025 (907) 257-3434 Fax (907) 257-3412
1300 W. Benson Blvd. Fourth Floor Anchorage, Alaska 99503-3656

Representative Eileen MacLean

RE: H B 467

Dear Representative MacLean:

We have reviewed House Bill 467; changes which would be implemented by passage of 467 would assist in providing affordable housing for rural Alaskans.

NBA has branches in many rural areas of the state and we recognize the need for housing in those areas. We support passage of H B 467.

Please call me at 257-3442 if I can be of any assistance.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Lucille Stierz'.

Lucille Stierz
Sr. Vice President



Kodiak Island Housing Authority

MEMORANDUM

TO: David Harding
% Rep. Maclean

FROM: Karen King
Kodiak Island Housing Authority

DATE: March 9, 1994

SUBJECT: House Bill No. 467

House bill 467 will further assist regional housing authorities in our efforts to offer housing opportunities to communities on a local level.

SECTION 1

Home mortgages will be promptly available for residents of small communities by authorizing regional housing authorities to make, originate, and service loans within their jurisdiction. Currently, AHFC loan originations are not readily available to all communities. By not having local origination authority, the service delivery is impeded, requiring residents to go through an inordinate amount of effort based solely on logistics. The current situation only serves to make procuring a home mortgage, which is a stressful situation in the best of circumstances, inefficient and daunting.

SECTION 3

The Association of Alaska Housing Authorities strongly supports the corporation's increased contribution to federally funded housing developments from 20% to 30%. We would encourage a revision to the proposed language which would allow the funding to be utilized on "off-site" sewer and water facilities. Flexibility to permit the use of funding for on-site or off-site situations, based on local circumstances, will insure sufficient funds are available to develop viable, credible housing units.

A recently completed development in Craig, Alaska required an inordinate amount of development funds be utilized for off-site water/sewer facilities. The usual agencies available to the housing authority to support the development, PHS, BIA, and HUD, were unable to fully support the off-site needs which jeopardized the entire development. Combined with the difficulty in actually defining where on-site, off-site water/sewer expenses begin and end, and lack of funds, the community struggled with bringing the development to fruition.

By allowing the corporation's proposed 30% contribution to be utilized based on local circumstances, the State of Alaska could demonstrate strong support for the federal funds that are available for the housing needs of low-income Alaska residents.

ASSOCIATION OF ALASKA HOUSING AUTHORITIES
520 E. 34th Ave. #109
Anchorage, AK 99503
(907) 562-7119

Senator Randy Phillips
State Capitol
Juneau, AK 99801-1182

Dear Senator Phillips:

The Association of Alaska Housing Authorities would like to testify at a hearing on HB 467, currently in the Senate Community & Re Aff Committee.

The Association of Alaska Housing Authorities consists of 14 of the state's 14 regional housing authorities and the Alaska Finance Corporation, through its rural housing efforts.

We consider HB 467 to be a very important piece of legislation that will allow regional housing authorities to originate and service AHFC loans thus bringing needed housing finance opportunities to many remote areas of the state.

We would be happy to testify to the merit of this bill when a hearing is scheduled.

Thank you very much,

Sincerely,



Heather Arnett
Executive Coordinator
Association of Alaska Housing Authorities

RI

ASSOCIATION OF ALASKA HOUSING AUTHORITIES
520 E. 34TH #109
Anchorage, AK 99503
(907) 562-7119

APR-22-94 SAT 9:04

AK HOUSING FIN 3RD FLOOR

FAX NO. 5610364

P. 01

FAX TRANSMITTAL

TO: *Sen. Randy Phillips*

FROM: Heather Arnett

DATE: 4-21-94

SEND TO FAX NO: *465-4979*

.....
Cover Letter plus *1* page(s). Please call (907) 562-7119 and contact Heather if this was not properly received.

SPECIAL INSTRUCTIONS/NOTES:

HEB

543

- HB543 -

Mel - person
who sells unrented

373-6561 -

- Dale Baker - #
selling unrented
heaters in Wasilla

373-6561

\$100 - \$10 per month

Rinnai "Energy Saver" Direct Vent Heaters



Natural Gas or Propane

Model 551 - 22,000 BTU

Model 1001 - 38,400 BTU
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Alaska Contractor - Spring 1994



Official Business

COMMITTEE:

SENATE COMMUNITY & REGIONAL AFFAIRS

DATE: 4/21/94

Subject of meeting:

HB 543 UNVENTED GAS HEATERS IN RESIDENTIAL HOMES

SIGN-IN

PLEASE PRINT!
NAME

ADDRESS (MAILING) & (ZIP)

PHONE

REPRESENTING

DO YOU WANT TO TESTIFY?

KEW LGS	POB 111200 TUNERU 99811	465-4331	DPS, FIRE PREV	No
Richard Barnes	P.O. Box 92004 Anchorage 99509	264-3681	ENSTAR	yes
DAVE SINCLAIR	6840 SEQUOIA ANCHORAGE	345-0554	ENSTAR	yes
Jim Murphy	277.555 W Norton Lit 47 Auk 99503	272-5864	Long Assoc	yes
Joseph EASAW	Capitol Rm 102.	465-3719.	Rep Verney	yes

11111

State of Alaska

Rep. Al Vezey
Chairman

Rep. Pete Kott
Vice Chairman
Rep. Bettye Davis
Rep. Gary Davis
Rep. Harley Olberg
Rep. Jerry Sanders
Rep. Fran Ulmer




House State Affairs Committee

Session
Rm. 102
State Capitol
Juneau, AK 99801
(907) 465-3719

Interim
119 N. Cushman St.
Suite 211
Fairbanks, AK 99701
(907) 456-5081

April 18, 1994

From: Joseph Easaw Jr. 
Office of Al Vezey, Representative

To: Shirley Armstrong, Committee Aide
Senate Community & Regional Affairs

Subject: Documentation addressing opposition

This additional information may be very useful to the members of the committee at today's hearing on HB 543. GAMA (Gas Appliances Manufacturers Association) has taken a sampling of the letters written in opposition to HB 543 and directly addressed some of those comments and assertion.

Please add this information to the packet for the committee members. If you need additional copies please call me at 6822 and I will provide them for you. Thank you for your help.

APR 13 1993

Alaska State Legislature

While in Session:
State Capitol Building
Juneau, Alaska 99801-1182
907-465-3719

Interim:
119 N. Cushman
Suite 211
Fairbanks, Alaska 99701
907-456-5081

Representative Al Vezey

April 12, 1994

From: Representative Al Vezey, Chairman *AV*
House State Affairs Committee

To: Senator Randy Phillips, Chairman
Senate Community & Regional Affairs

Subject: Request for hearing on

We respectfully request a hearing before the Senate Community and Regional Affairs Committee or HB 543, "An Act relating to gas space heaters in residential buildings." . We request a hearing at the committee's earliest convenience. Included with this request is a sponsor's statement along with supporting documents. Please call me or Joseph Easaw in my office if there is anything additional we may do or provide with regards to this request.

Thank you for your favorable response to this request.

State of Alaska

Rep. Al Vezey

Chairman

Rep. Pete Kott

Vice Chairman

Rep. Bettye Lewis

Rep. Gary Davis

Rep. Harley Olberg

Rep. Jerry Sanders

Rep. Fran Ulmer



House State Affairs Committee

Session
Rm. 102
State Capitol
Juneau, AK 99801
(907) 465-3719

Interim
119 N. Cushman St.
Suite 211
Fairbanks, AK 99701
(907) 456-5081

March 31, 1994

SPONSOR STATEMENT HB 543

The intent of House Bill 543 is to allow the usage of unvented gas fired room heaters to be installed in residential dwelling in the state of Alaska. It mandates gas fired room heaters meets the requirements and standards of the American National Standards Institute (ANSI), Z21.11.2.

Unvented gas fired room heaters have been in existence for more than thirty years in Europe and there are more than two million of them in use in the United States with relatively a small number of fatalities or serious injuries. These instances of fatalities are attributable to unvented gas heaters not manufactured for indoor use. This claim cannot be made about the usages of vented room heaters.

Unvented heaters are far more efficient than vented heaters and thereby more economical to operate.

An analysis of the latest statistics (1986) compiled by the U.S. Consumer Product Safety Commission (CPSC) reveals that of the total 150,000 fires involving space heaters, gas fired types (i.e., electric, coal, gas, etc.), gas fired heaters accounted for only 3%.

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1901 North Moore Street • P.O. Box 9245 • Arlington, Virginia 22209 • 703/525-9565

*rebuttal
to letters of
opposition*

DATE: April 21, 1994

FROM: The Gas Appliance Manufacturer's Association
Vent Free Gas Products Task Group

TO: The Alaska Legislature

We have reviewed a sampling of the various letters submitted opposing the approval of vent free gas heating products for sale and installation in Alaska. These letters, while obviously well intentioned are grossly misinformed. It is not practical to address all erroneous information in this memo, but the following is a sampling of assertions that we strongly dispute:

1) Letter from Design Associates:

"People will die. Unvented space heaters will do this."

GAMA Response:

The Consumer Products Safety Commission data finds no evidence of deaths due to use of an oxygen depletion sensor (ODS) vent free gas product.

In fact, the action of the ODS extinguishing the vent free heater has often served to alert the home owner that service was required. Service then detected carbon monoxide production by another home appliance. In effect the vent free heater reacted as a CO detector. We are not recommending that vent free heaters be used as a CO detector, but their "fail-safe" performance is impressive.

2) Letter from Chuck Renfro:

"All literature ... reflects factory installation is to disallow the unit in sleeping quarters"

GAMA Response:

Effective April 1994, the American National Standards Institute and the National Fire Protection Assoc. (which administers the National Fuel Gas Code) approved the installation of vent free gas heaters of 10,000 BTU or less, wall hung, for sleeping quarters. This decision followed three years of careful review by the engineers, inspectors, and gas companies of the industry. All product manuals will be revised accordingly.



3) Letter from Scotts Heating and Air Conditioning Services:

"Each year there are many cases of carbon monoxide poisoning in homes, cabins, and yes, even tents, remembering the 6 people in the "Iditerod 1994" race that made the front page of the Daily News."

GAMA Response:

The product involved in the unfortunate death of 6 Iditerod racers was a commercial (vs. residential) propane heater, mounted on top of a propane tank, it was not an ODS equipped vent free gas heater, and has no relevance to the product proposed for approval.

4) Letter from Bruce V. Zaulor

"Normal oxygen content in the atmosphere is 20.9% or 209,000 parts per million (ppm). Carbon monoxide at levels of 100ppm can cause severe health problems." ... inferring that vent free gas heaters lead to that effect.

GAMA Response:

Vent free gas heating appliances produce only "trace" amounts of carbon monoxide which translates to 10 - 50 ppm. of room air. No adverse health effects are known to result to these trace amounts of carbon monoxide, regardless of the Source.

5) Letter from the American Lung Association:

"Alaska has wisely adopted the Uniform Building Code (UBC) which prohibits such devices and feel that these standards should not be changed in cold climate regions. They are prohibited in other severe weather climates such as Minneapolis, New Hampshire, and New York State."

GAMA Response:

There are five major building codes in the U.S. only UBC prohibits vent free heaters and wrote that language into their code prior to introduction of the ODS in 1980. New Hampshire, in Dec. 1993, changed their state law to permit the installation of vent free gas heating products.

SW/lc

1901 North Moore Street - P.O. Box 9245 - Arlington, Virginia 22209 - 703/525-9565



DATE: April 21, 1994

FROM: Jack Langrade, Vice President
Technical Services

TO: Whom it May Concern

The consumer Products Safety Commission morbidity and mortality data base reveals that there have been no deaths caused by carbon monoxide poisoning attributed to use of vent free gas space heating products equipped with an oxygen depletion sensor (all such products manufactured and marketed since 1980 ... approximately 2.3 million units in residential use).

/lc



1901 North Moore Street • P.O. Box 9245 • Arlington, Virginia 22209 • 703/525-9565



DATE: April 21, 1994

FROM: The Gas Appliance Manufacturer's Association
Vent Free Gas Products Task Group

TO: The Alaska Legislature

While a representative of a Suburban propane branch in Alaska has written a letter opposing vent free gas products, it is important to acknowledge that while there are two branch locations of Suburban in Alaska; there are 784 total branches in 49 states in the U.S.. The corporate headquarters of Suburban Propane in Whippany, New Jersey solidly supports vent free gas products as evidenced in the attached fall '93 promotional brochure published by Suburban Propane.

SW/lc



JOURNEY INTO SAVINGS

WEAN PROPANE'S ANNUAL FALL SPECTACULAR SALE

Most Locations Open Saturday Sale Ends November 30, 1993

VF = Vent Free

Blower Included

EMPRE

40,000 BTU DELUXE VENT FREE GAS HEATER (VF)

LOWEST PRICE

NEW ONLY \$349.93 w/3-yr. Extended Warranty

Regular \$51.40

- Cozy visual blue flame
- 100% efficient
- Vent free installation

\$529.93 w/3-yr. Extended Warranty

Regular \$20.45

- Auto on/off thermostat
- 100% ODS (oxygen depletion sensor) for maximum safety
- Matchless piezo ignition

Warm Morning

VENTED RADIANT-FRONT GAS ROOM HEATER Model #VR650

NEW ONLY \$499.93 w/3-yr. Extended Warranty

Regular \$952.95

- Cozy fireplace appearance
- Top-mounted controls

3000 BTU INFRARED GAS SPACE HEATER WITH THERMOSTAT CONTROL Model #VP2200T

NEW FOR 93!

WINTERBELL

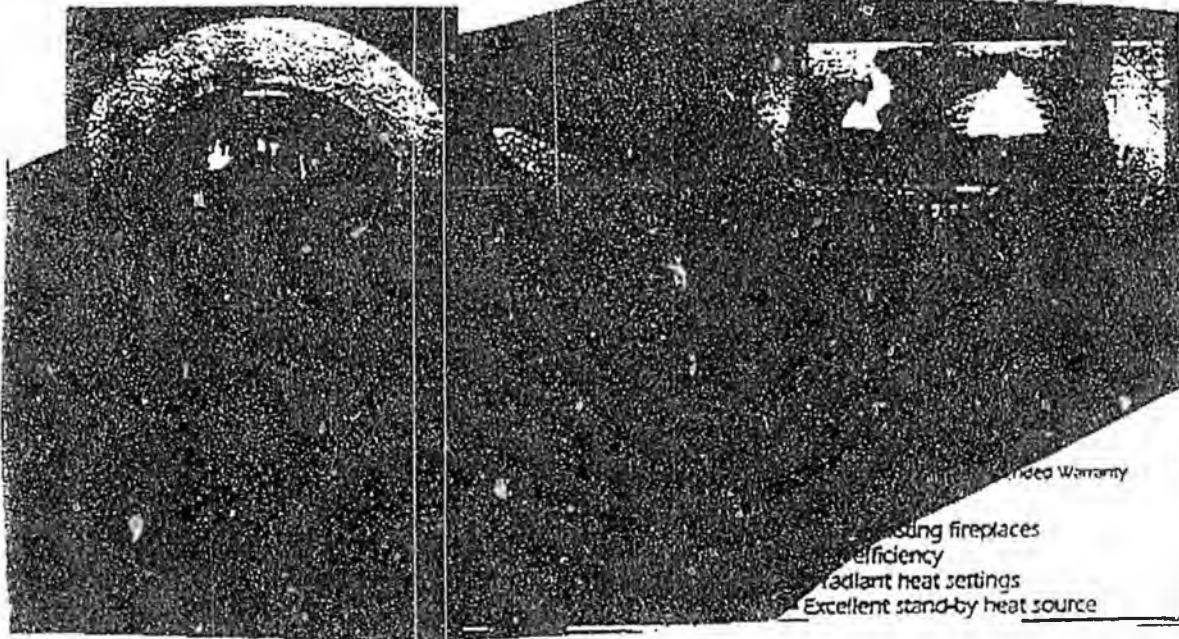
NEW ONLY \$399.93 w/3-yr. Extended Warranty

Regular \$437.10

- Four heaters in one!
- Fast efficient infrared

• Remote control Included

(VF)



VF = Vent Free

Top 25 Propane Retailers

An updated look at the leading propane retail marketers in the United States.

To no one's surprise, Suburban Propane/Petrolane continues to rank as the leading United States retail marketer of propane, according to *LP/Gas* magazine's annual and newly-expanded poll of LP-gas retailers.

The New Jersey firm, based in Whippany, led the way with sales of 1.125 billion gallons.

Much to the great delight of company officials, Suburban Propane/Petrolane, headed up by president Dennis J. Spina, saw its retail gallonage rise during the past year...despite a seige of unseasonably warm weather which haunted most propane marketers. Sales at the retail level in 1990 totaled 1.097 billion gallons (see January 1991 issue of *LP/Gas*).

However, the company's wholesale gallonage fell by 50 million gallons...producing a 22 million gallons loss.

Ferretigas of Liberty, Missouri reported that its retail sales during the past year (525 million gallons) were identical to those of 1990, though its sales in the wholesale arena were off 165 million gallons, when its figures are compared to 1990 data which it furnished.

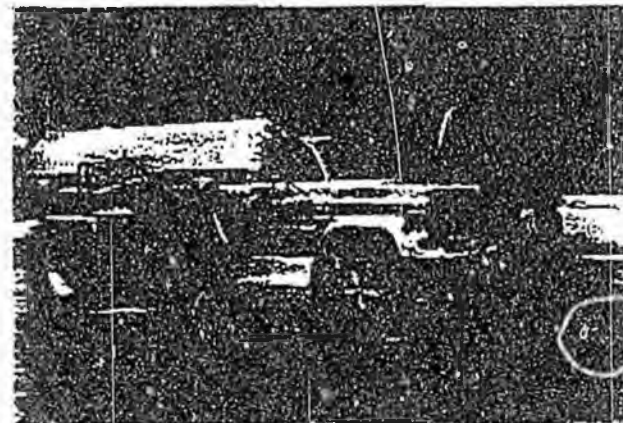
AmeriGas also reported that its retail sales were off during the past year, posting an 18 million gallons loss. The Pennsylvania-based (Valley Forge) recorded 1991 propane retail sales of 353.732 million gallons. Its wholesale gallons sales, which were 108 million the previous year, were only 5.981 million last year.

Empire Gas of Lebanon, Missouri, headed up by Bob Plaster, was also among those reporting drops in retail sales. During the past year, retail gallonage fell by 15 million gallons...the slippage being attributed to a seige of unseasonably warm weather which has been negatively impacting propane marketers throughout the country for the past several years.

Star Gas, headquartered in Mt. Laurel, New Jersey, and headed up by Jim Bullen, was another company

which saw its retail sales slip...falling 19 million gallons to 99.1 million gallons during the past year. Its sales in the wholesale area also slipped by 11.5 million gallons.

Agway Energy of Syracuse, New York, enjoyed a slight increase in its retail sales, from 90 million gallons



Empire Gas was among those reporting drops in gallonage.

to 92.8 million gallons during the past year due in part to the acquisition of several new outlets.

Heritage Propane of Tulsa, which was founded just three years ago (May 1, 1989) this month, saw its 1991 retail gallonage (70 million) increase 3 million gallons. But, like Agway, the growth was the result of 13 more outlets acquired via the firm's acquisition program.

Overall, sales for the Top 10 LP-gas retail marketers were down across the board. Most of the slippage, the marketers agree, was spawned by mild winter weather. □

TOP 25 UNITED STATES RETAIL PROPANE MARKETERS

RANK	COMPANY (Headquarters)	RETAIL	WHOLESALE	TOTAL GALLONS	OUTLETS	STATES	CUSTOMERS
1	Suburban Propane (Whippany, NJ)	1,125,000,000	491,000,000	1,526,000,000	784	49	1,800,000
2	Ferretigas (Liberty, MO)	525,000,000	110,000,000	600,000,000	500	48	800,000
3	AmeriGas (Valley Forge, PA)	353,732,000	5,981,500	368,713,500	304	37	417,000
4	DKC Propane Co. (Miami Beach, FL)	185,000,000	13,000,000	178,000,000	148	21	NA
5	Neeco Gas Products (Tulsa, OK)	160,000,000	50,000,000	210,000,000	133	11	105,000
6	Empire Gas (Lebanon, MO)	157,000,000	4,000,000	161,000,000	300	22	210,000
7	Synergy (Farmingdale, NY)	130,000,000	NA	130,000,000	123	17	154,000
8	Star Gas, Inc. (Oak Brook, IL)	125,000,000	15,000,000	140,000,000	108	10	144,000
9	Enro Propane (Flint, MI)	102,000,000	None	102,000,000	60	4	140,000
10	Star Gas (Mt. Laurel, NJ)	99,100,000	50,500,000	149,600,000	93	12	204,000
11	Agway Energy (Syracuse, NY)	92,800,000	None	92,800,000	95	10	194,000
12	Heritage Propane (Tulsa, OK)	70,000,000	21,000,000	91,000,000	80	11	140,000
13	Blochman Gas (Ocean Springs, MS)	52,500,000	None	52,500,000	70	7	110,000
14	Vision Energy (New York City, NY)	51,450,500	38,847,650	90,298,150	60	7	40,000
15	Central/Land O'Lakes (St. Paul, MN)	50,000,000	235,500,000	245,500,000	320	14	190,000
16	ProFlame (Nevada, CA)	35,000,000	37,000,000	72,000,000	28	3	40,000
17	MFA Oil Co. (Columbia, MO)	34,500,000	None	34,500,000	90	1	42,000
18	Commonwealth Propane (Richmond, VA)	31,700,000	20,600,000	54,300,000	25	8	63,600
19	Dowdle Butane (Columbus, MS)	31,925,000	11,100,000	43,025,000	34	3	68,000
20	Piedmont Propane (Charlotte, NC)	30,450,000	4,455,000	33,900,000	20	3	38,000
21	Gas Supply, Inc. (Minneapolis, MN)	30,000,000	90,000,000	120,000,000	12	3	25,000
22	Lakes Gas (Forest Lake, MN)	22,500,000	None	22,500,000	25	3	40,000
23	1st Gas (Honolulu, HI)	22,000,000	1,750,000	23,750,000	7	1	35,000
24	Peoples Gas (Tampa, FL)	20,000,000	None	20,000,000	10	1	35,000
25	Jenkins Gas (Folkeville, NC)	17,300,000	None	17,300,000	10	1	30,000

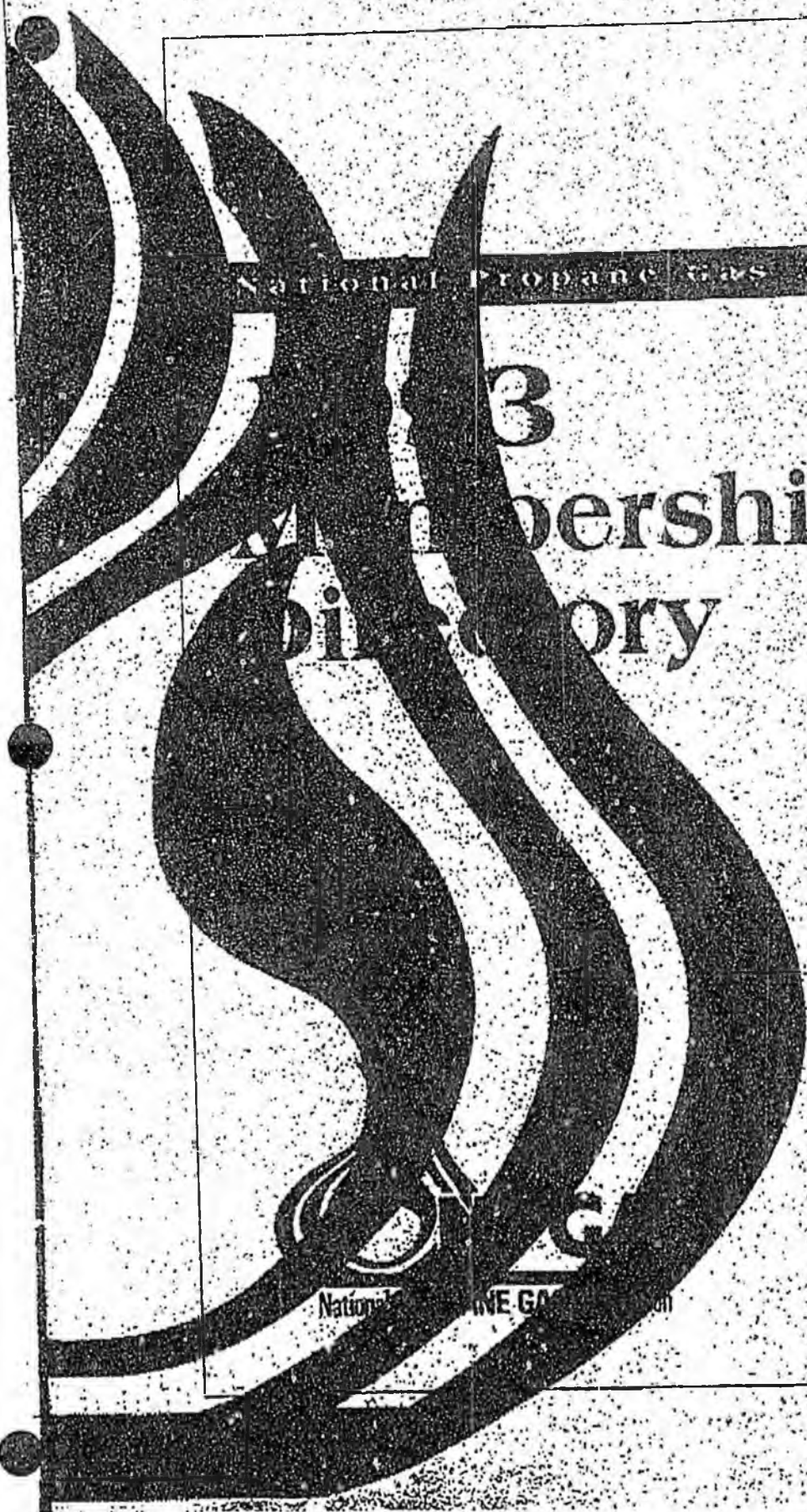
SOURCE: Annual survey of marketers by *LP/GAS* magazine. E - Estimated, based upon industry data.

National Propane Gas Association

1983

Membership Directory

National Propane Gas Association



ALABAMA MARKETERS - Continued

- 2224 Forrest Ave
Gadsden, AL 35904-2097
205/547-6971
- PO Box 307
Heflin, AL 36264-1131
205/463-2171
- PO Box 12694
Huntsville, AL 35802-2134
205/882-2118
- P O Box 555 Highway 31
Jemison, AL 35085-9999
205/688-2450
- PO Box 728
Leeds, AL 35094-0728
205/629-6650
- PO Box 532
Pell City, AL 35125
205/338-3318
- PO Box 527 Highway 35
West
Rainsville, AL 35986
205/638-2555
- Tri-Cities Gas Co
Jack Clemons
PO Box 551
Florence, AL 35530
205/381-7741
- Uneda Gas Co Inc
Larry D Ray
PO Box 925
Alexander City, AL 35010
205/234-7201
- Vaughen Gas & Appliance
Co Inc
Bob Vaughan
PO Box 1612
Decatur, AL 35602
205/353-2546
- PO Box 134
Moulton, AL 35650
205/974-0628
- W & J Propane Gas
Jim Cassidy
PO Box 776
Greenville, AL 36037
205/382-3158
- PO Box 375
Andalusia, AL 36420
205/222-4525
- PO Box 628
Butler, AL 36904
205/459-2949
- P O Box 245
Dadeville, AL 36853
205/825-4338
- PO Box 148
Ertaw, AL 35462
205/372-2169
- PO Box 88
Evergreen, AL 36401
205/578-3059
- P O Box 525
Florida, AL 36442
205/858-3716
- PO Box 154
Georgiana, AL 36033
205/376-2211
- PO Box 9
Greensboro, AL 36744
205/624-4984
- P O Box 247
Heflin, AL 36264
205/463-2221
- PO Box 418
Huntsboro, AL 36860
205/667-6457
- PO Box 342
Luverne, AL 36049
205/335-3356
- PO Box 159
Sweetwater, AL 36782
- PO Box 1025
Troy, AL 36081
205/566-1670
- PO Box 5040
Union Springs, AL 36089
205/738-3050
- P O Box 500
Wedowee, AL 36278-0500
205/363-2411
- Wan Bon Gas Inc
R Ed Wakrip
PO Box 26
Westover, AL 35185
205/678-6681
- Waters LP-Gas Co
PO Box 668
Moulton, AL 35650
205/974-1360
- ALASKA**
- AmeriGas L P Gas Division
Wayne Canary
19244 E Valley Hwy
Kent, WA 98032
206/395-4428
- PO Box 32279
Juneau, AK 99801
907/789-7897
- Northern Gas & Oil Co
Fred J Schikora
3374 S. Yukon St
Fairbanks, AK 99709
907/452-1176
- Petrolane
2250 Cushman St
Fairbanks, AK 99701
907/452-1178
- PO Box 33857
Juneau, AK 99801-3857
907/789-7840
- Rt 1 Box 1143
Ketchikan, AK 99901
907/225-4060
- SRA Box 8185 A3
Palmyra, AK 99645
907/745-4841
- P O Box 410
Soldotna, AK 99669
907/252-4683
- Suburban Propane
J T Davis
1851 S Central Place #217
Kent, WA 98031
206/852-5900
- 1200 E Whitney Rd
Anchorage, AK 99501
907/272-7581
- ARIZONA**
- Aand Propane Gas CO
Johnny Martin
888 W Scouter
Apache Jct, AZ 85220
602/982-8280
- AmeriGas
Bob Burns
9559 East Valley Blvd
El Monte, CA 91731
602/444-0658
- P O Box 1599
Cottonwood, AZ 86325
602/848-8034
- PO Box 838
Holbrook, AZ 86025
602/524-3504
- Highway 264 & Luepp
Road
Kykotsmovi, AZ 86039
902/734-2480
- 510 S Lewis St
Mesa, AZ 85210
602/969-2315
- 2651 N Grand Ave #23
Nogales, AZ 85621
602/281-1341
- PO Box 1029
Overgaard, AZ 85933
602/535-6123
- PO Drawer 2258
Show Low, AZ 85901
602/537-4944
- PO Box 1648
Sierra Vista, AZ 85638
602/378-2326
- 2455 West Westmore Rd
Tucson, AZ 85705-2018
602/887-7120
- Apache Propane Co
Steven Mutyron
1787 S Wick-up Road
Apache Junction, AZ 85219
602/988-1712
- Arrow Gas Company,
Subsidiary National Propane
Corporation
Robert L Guest
Box 1777
Roswell, NM 88201
505/822-8031
- PO Box 1392
Camp Verde, AZ 86322
802/634-5408
- PO Box 218
Congress, AZ 85332
602/427-3317
- PO Box 2578
Flagstaff, AZ 86001
802/528-0659
- Barnett Propane
Roger Barnett
Box 1325
Sierra Vista, AZ 85636
502/458-1541
- Black Mountain Gas Co
Tom LeNeau Mayne
PO Box 427
Cave Creek, AZ 85331
602/488-3402
- P O Box 3025
Page, AZ 86040
602/645-2391
- Blue Flame Bottle Gas
Service
Harold Malott
2803 N Fairview Ave
Tucson, AZ 85705
602/822-1491
- Blue Flame Bottle Gas
Hwy 92
Sierra Vista, AZ 85636
502/822-1491
- Century Propane Company
Inc dba Discovery Propane
Steve Baze
PO Box 8128
Kingman, AZ 86401
602/753-9596
- 54 North Lake Havasu
Avenue
Lake Havasu City, AZ
86403
602/453-6633
- Empire Gas Corp
Paul Lindsey
PO Box 303
Lebanon, MO 65538
417/532-3101
- HCO2 Box 1128
Globe, AZ 85501
602/425-1143
- Flame Inc
C Barrott
475 North South St
Prescott, AZ 86302
802/445-3191



1901 North Moore Street • P.O. Box 9245 • Arlington, Virginia 22209 • 703/525-9565

DATE: April 21, 1994

FROM: The Gas Appliance Manufacturer's Association
Vent Free Gas Products Task Group

TO: The Alaska Legislature

Many concerns have been raised regarding the issue of "opening a window" to provide combustion air for the use of vent free gas heating appliances.

All vent free products manuals refer the installer to the National Fuel Gas Code for combustion air guidelines (see excerpt from sample attached product manual). The National Fuel Gas Code is very definitive regarding residential space that is "confined or unconfined" and provides clear direction on combustion air requirements in either situation. Vent free gas appliance manufacturers integrate these guidelines in their manuals, and train installers accordingly. When these guidelines are followed there is no reason for an open window.

The "open window" language is an "anachronistic" phrase carried from the early '80's. The American National Standards Z.21.11.2 subcommittee which oversees standards for these products, in May of '94 will take action to eliminate this language, and put exclusive focus on the National Fuel Gas Code combustion air guidelines.

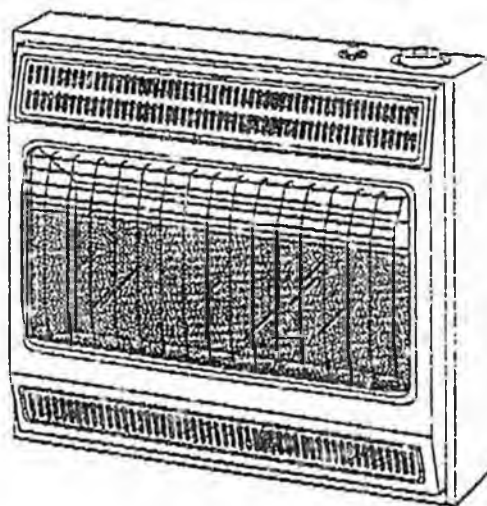
SW/lc



An Association of Manufacturers of Appliances and Equipment for Utilization, Distribution and Control of Gas

BLUE-FLAME VENT-FREE NATURAL GAS HEATER

OWNER'S OPERATION AND INSTALLATION MANUAL



Heater Sizes: 18,000 BTU/Hr Non-Thermostat,
18,000 BTU/Hr Thermostat, and 28,000 BTU/Hr Thermostat
"A" Model Heaters

WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury, or loss of life.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- **WHAT TO DO IF YOU SMELL GAS**
 - Do not try to light any appliance.
 - Do not touch any electrical switch; do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. Refer to this manual for correct installation and operational procedures. For assistance or additional information consult a qualified installer, service agency, or the gas supplier.



Save this manual for future reference.

PRODUCT IDENTIFICATION

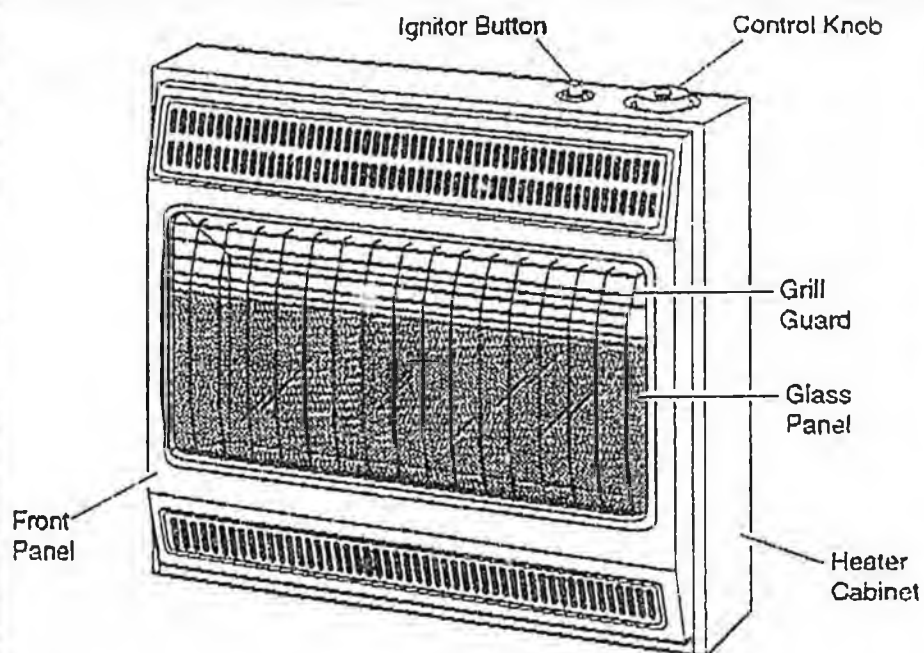


Figure 1 - Vent-Free Natural Gas Heater (20,000 BTU/Hr Model Shown)

LOCAL CODES

Install and use heater with care. Follow all local codes. In the absence of local codes, use the latest edition of the National Fuel Gas Code ANSI Z223, also known as NFPA 54*.

*Available from:

American National Standards Institute, Inc.
1430 Broadway
New York, NY 10018

National Fire Protection Association, Inc.
Batterymarch Park
Quincy, MA 02269

UNPACKING

1. Remove heater from carton.
2. Remove all protective packaging applied to heater for shipment.
3. Check heater for any shipping damage. If heater is damaged, promptly inform dealer where you bought heater.

PRODUCT FEATURES

Safety Device

This heater has a pilot with an Oxygen Depletion Sensor Shutoff System (ODS). The ODS/pilot is a required feature for vent-free room heaters. The ODS/pilot shuts off the heater if there is not enough fresh air.

Piezo Ignition System

This heater has a piezo ignitor. This system requires no matches, batteries, or other sources to light heater.

Thermostatic Heat Control (Thermostat Models Only)

Thermostat models have a thermostat sensing bulb and a control valve. This results in the greatest heater comfort. This can also result in lower gas bills.

FRESH AIR FOR COMBUSTION AND VENTILATION

Continued

DETERMINING FRESH-AIR FLOW FOR HEATER LOCATION

Determining if You Have a Confined (Closed) or Unconfined (Open) Area

Use this worksheet to determine if you have a confined or unconfined area.

1. Add the BTU/Hr of all fuel burning appliances in the area.

Vent-free heater	_____	BTU/Hr
Gas water heater	_____	BTU/Hr
Gas furnace	_____	BTU/Hr
Vented gas heater	_____	BTU/Hr
Gas fireplace logs	_____	BTU/Hr
Other gas appliances*	+ _____	BTU/Hr
Total	= _____	BTU/Hr

Example:

Vent-free heater		18,000	BTU/Hr
Vent-free heater	+	28,000	BTU/Hr
Total	=	46,000	BTU/Hr

* Do not include direct-vent gas appliances.

2. Determine the volume of the room (length x width x height).

Length x Width x Height = _____ cu. ft. (Volume of room)

Example: Room size 20 ft. (length) x 16 ft. (width) x 8 ft. (ceiling height) = 2560 cu. ft. (Volume of room)

If additional ventilation to adjoining room is supplied with grills or openings, add the volume of these rooms to the total volume of the room.

3. Divide the room volume by 50 cubic feet to determine the maximum BTU/Hr the room can support.

_____ (Volume of room) ÷ 50 cu. ft. = _____ (Maximum BTU/Hr the room can support)

Example: 2560 cu. ft. (Volume of room) ÷ 50 cu. ft. = 51.2 or 51,200 (Maximum BTU/Hr the room can support)

4. Compare the maximum BTU/Hr the room can support with the actual amount of BTU/Hr used.

_____ BTU/Hr (Maximum the room can support)
 _____ BTU/Hr (Actual amount of BTU/Hr used)

Example: 51,200 BTU/Hr (Maximum the room can support)
 46,000 BTU/Hr (Actual amount of BTU/Hr used)

The room in the above example is an unconfined (open) area because the actual BTU/Hr used is less than the maximum BTU/Hr the room can support. See *Locating Heater in Unconfined (Open) Area* page 7.

If the actual BTU/Hr used is more than the maximum BTU/Hr the room can support, you must provide additional fresh air. See *Locating Heater in Confined (Closed) Area* on page 7.

WARNING

You must provide additional fresh air in a confined (closed) area.

FRESH AIR FOR COMBUSTION AND VENTILATION

Continued

Locating Heater in Unconfined (Open) Area

NOTICE*

An unconfined area has a minimum air volume of 50 cubic feet for each 1000 BTU/Hr input rating of all appliances in the area (cubic feet equals length x width x height of area). Include adjoining rooms only if there are no doors between the rooms or if you add ventilation grills between the rooms.

In an open area, the air that leaks around doors and windows may provide enough fresh air for combustion and ventilation. However, in buildings of unusually tight construction, additional air shall be provided using the methods described in *Providing Permanent Fresh-Air Ventilation for Confined Areas and Unusually Tight Construction*, page 8.

NOTICE*

Unusually tight construction is defined as construction where:

- a. walls and ceilings exposed to the outside atmosphere have a continuous water vapor retarder with a rating of one perm or less with openings gasketed or sealed *and*
- b. weather stripping has been added on openable windows and doors *and*
- c. caulking or sealants are applied to areas such as joints around window and door frames, between sole plates and floors, between wall-ceiling joints, between wall panels, at penetrations for plumbing, electrical, and gas lines, and at other openings.

Locating Heater In Confined (Closed) Area

NOTICE*

A confined area has an air volume of less than 50 cubic feet for each 1000 BTU/Hr input rating of all appliances in the area (cubic feet equals length x width x height of area). Include adjoining rooms only if there are no doors between the rooms.

If you install this heater in a confined area, you must provide additional fresh air.

* Excerpt from NFPA54/ANSI Z223.1, Section 5.3

Ventilating Confined Area

This fresh air would come from an adjoining open area or outdoors.

WARNING

The adjoining open area must have enough fresh, outside air ventilation to supply any appliance in that area plus the confined area. Follow instructions under *Locating Heater in Unconfined (Open) Area*, above, to make sure fresh air ventilation is adequate.

When ventilating to an adjoining open area, you must provide two permanent openings: one within 12" of the ceiling and one within 12" of the floor on the wall connecting the two areas. Follow the National Fuel Gas Code NFPA 54/ANSI Z223.1. It lists fresh-air requirements for fuel-burning appliances.

Continued

FRESH AIR FOR COMBUSTION AND VENTILATION

Continued

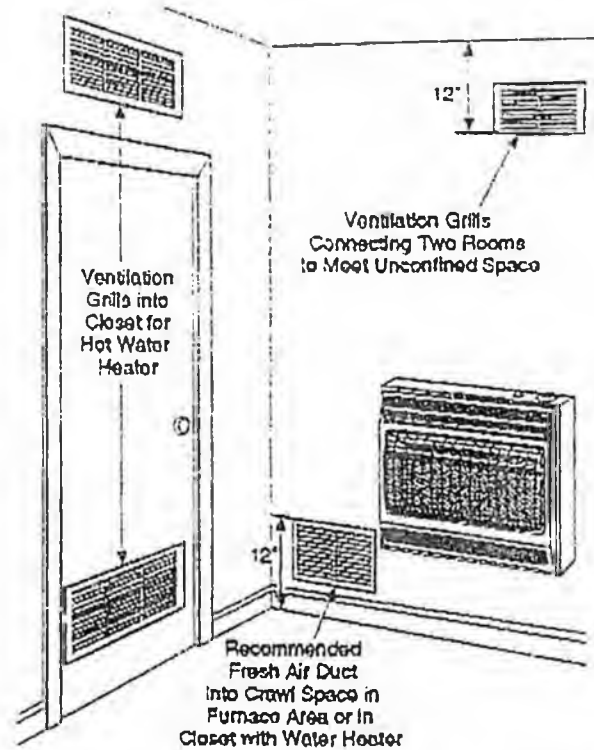


Figure 2 - Ventilation Air from Inside Building

Providing Permanent Fresh-Air Ventilation for Confined Areas and Unusually Tight Construction

Provide extra fresh air by using ventilation grills or ducts. Connect these items directly to the outdoors or spaces open to the outdoors. These spaces include attics and crawl spaces. If you install this heater in an area with other gas appliances, you must total the BTU/Hr input rating of all appliances. Follow the National Fuel Gas Code NFPA 54/ANSI Z223.1, Sec. 5.3, Air for Combustion and Ventilation. It lists fresh-air requirements for fuel-burning appliances.

IMPORTANT

Do not provide openings for inlet or outlet air into attic if attic has a thermostat controlled power vent.

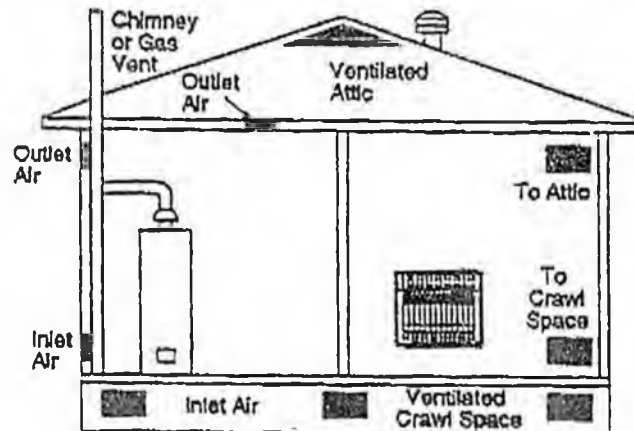


Figure 3 - Ventilation Air from Outdoors



1901 North Moore Street • P.O. Box 9245 • Arlington, Virginia 22209 • 703/525-9565

DATE: April 21, 1994

FROM: The Gas Appliance Manufacturer's Association
Vent Free Gas Products Task Group

TO: The Alaska Legislature

While some staff of ENSTAR Gas of Alaska oppose vent free gas heaters it is important to acknowledge that many major natural gas utilities merchandise, install, and service these products. The following utilities with 200,000 to 1,000,000 residential customers have for many years sold vent free gas products. Many of these companies are in New Jersey and Pennsylvania where there are extended periods of very cold weather.

UGI (Pennsylvania)

Pennsylvania Gas & Water (Pennsylvania)

Philadelphia Gas Works (Pennsylvania)

South Jersey Gas (New Jersey)

Public Service North Carolina (N. Carolina)

Piedmont Natural Gas (N. Carolina)

Peoples Gas (Iowa & Nebraska)

Atlanta Gas Light (Georgia)

Entex Gas (Mississippi)

Mississippi Valley Gas (Mississippi)

United Cities Gas (Tennessee)

Nashville Gas (Tennessee)

Alajanco (Alabama)

Mobile Gas co. (Alabama)

An Association of Manufacturers of Appliances and Equipment for Utilization, Distribution and Control of Gas



ODS PILOT TAMPER RESISTANT FEATURES

ODS OPERATION:

The Oxygen Depletion Sensing system (i.e. oxygen sensitive pilot, thermocouple and safety shut-off valve) is a proven technological innovation with an unmatched safety record for the last thirty plus years.

Introduced first in Europe and then mandated in the U.S. in 1979, the ODS operates as follows:

If the oxygen level in the surrounding atmosphere drops to 18% (from a normal level of approximately 20.9%) a lifting of the pilot flame occurs. This cools the thermocouple, causing the gas supply to the heater to be shut off.

TESTING OF COMPONENT PARTS:

A.G.A. certification requires parts to be tested prior to assembly and then random "life" tests after assembly. Most manufacturers test every assembled unit as it finishes the production process.

RUBY ORIFICE:

Every ODS contains a ruby chip with a lazer drilled orifice. If someone attempts to drill out the orifice to enlarge the pilot flame, the orifice will completely disintergrate. If someone attempts to plug and redrill the orifice, the reduced BTU output will not generate sufficient millivolts to hold the gas valve open.

NON-REMOVEABLE ACCESS NUT:

The access nut to the ruby orifice is notched in such a fashion as to cause the threads to be "stripped" or destroyed should someone attempt to access the ruby orifice.

NOTCHED THERMOCOUPLE BRACKET:

The thermocouple base and bracket are notched and grooved in such a fashion as to clearly indicate correct placement. Should someone attempt to move the thermocouple further up into the flame, the ODS will still function as the pilot flame also lifts away from the pilot tube and thermocouple as well as up from the thermocouple.

COMPLETE PILOT FLAME EXTINGUISHMENT:

The ODS pilot flame will extinguish totally at 18 % oxygen level.



April 1, 1994

The Honorable Al Vezey
Chairman, House State Affairs Committee
Alaska State Legislature
State Capitol
Juneau, Alaska 99801-1182

Dear Representative Vezey:

The Gas Appliance Manufacturers Association (GAMA) is a national trade association whose membership includes the vast majority of U.S. manufacturers of vented and unvented residential space heating equipment. At the request of Mr. Joseph Easaw of your staff, GAMA has reviewed a work draft of a bill to allow the installation and use of unvented gas space heaters in residential buildings.

GAMA recommends that Section 2 of the draft bill be revised to read as follows:

Sec 2. AS 18.60.705 is amended by adding a new subsection to read:

(c) Notwithstanding subsection (a) of this section, unvented gas space heaters are allowed in residential buildings provided: (1) they are listed by a testing agency qualified under the American National Standards Institute Accreditation Program as complying with the American National Standard for Gas-Fired Room Heaters, Volume II, Unvented Room Heaters, (ANS Z21.11.2); and (2) they are installed in accordance with the manufacturer's installation instructions.

The above language insures that only unvented gas space heaters that comply with relevant national product safety and installation standards will be allowed. For your information, manufacturers' installation instructions are reviewed and approved as part of the product safety certification process and must conform with the National Fuel Gas Code, ANS Z223.1/NFPA 54 (see enclosed excerpt from ANS Z21.11.2). The product is installed and operated by the testing agency per the

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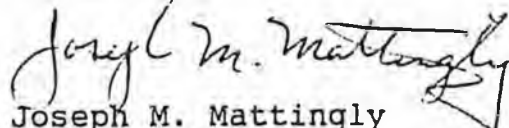


Page 2 of 2
The Honorable Al Vezey
April 1, 1994

manufacturer's instructions and is then tested for safe operation. Therefore, there is no need to reference the National Fuel Gas Code in the bill.

GAMA supports the passage and enactment of this legislation as amended to include the language we have proposed above. If GAMA can be of further assistance in this matter, please let me know. Thank you.

Sincerely,



Joseph M. Mattingly
Director of Government Affairs
and General Counsel

JMM:gjr-1
Enclosure

1.18.2 Motor, blower or fan bearings shall be either (a) permanently lubricated or (b) provided with accessible means for lubrication. (Also see 1.19.5.)

1.18.3 It shall be possible to oil the motor, blower or fan bearings, which require that lubricant be added, when the room heater is installed in accordance with the manufacturer's instructions.

TABLE IX

MAXIMUM ALLOWABLE MOTOR WINDING TEMPERATURES, F (°C)

<u>Motor Condition</u>	<u>Class A Insulation</u>	<u>Class B Insulation</u>
1. Locked rotor, during first hour of operation.	392 (200)	437 (225)
2. Maximum temperature, locked rotor, after first hour of operation.	347 (175)	392 (200)
3. Average temperature, locked rotor, after first hour of operation.	302 (150)	347 (175)
4. Motor operating at any load.	284 (140)	329 (165)

1.18.4 Bearings of motors, blowers or fans shall be of a type suitable for the temperatures to which subjected in normal operation.

1.18.5 On belt-driven blowers or fans, means for adjusting belt tension shall be provided and shall be readily accessible.

1.19 INSTRUCTIONS

1.19.1 Each room heater shall bear a Class IIIB marking with letters on a contrasting background, located adjacent to the controlling device or in an equally conspicuous position where the instructions can be easily read. These instructions shall include the statement:

"Keep burner and control compartment clean. See installation and operating instructions accompanying heater."

On an appliance of such design that space does not permit proper location of these instructions, they may be furnished on a metal tag attached to the appliance.

1.19.2 The printed instructions accompanying the room heater shall include at least the following information in a readily obvious and prominent manner, such as by being underlined, encircled, or printed in larger or different color type:

- a. Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies.
- b. Children and adults should be alerted to the hazard of high surface temperature and should stay away to avoid burns or clothing ignition.
- c. Young children should be carefully supervised when they are in the same room with the appliance.
- d. Do not place clothing or other flammable material on or near the appliance.
- e. Any safety screen or guard removed for servicing an appliance must be replaced prior to operating the heater (see 1.2.3).
- f. Installation and repair should be done by a qualified service person. The appliance should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that control compartments, burners and circulating air passageways of the appliance be kept clean.
- g. "WARNING: Any change to this heater or its controls can be dangerous."

1.19.3 When provision is made for manual operation of the automatic valve, operating instructions shall be clearly indicated on Class V marking material on or adjacent to this valve.

1.19.4 Each room heater shall be accompanied by printed instructions and diagrams adequate for proper field assembly, installation and safe operation of the appliance, including all controls and accessories.



The front cover or, in the absence of a cover, the first page shall bear the following boxed warning. It shall be boxed as shown:

WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

— Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

— **WHAT TO DO IF YOU SMELL GAS**

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

— Installation and service must be performed by a qualified installer, service agency or the gas supplier.

The letters used for the boxed warning above shall be boldfaced type having a minimum uppercase letter height of 0.120 inch (3.05 mm). The minimum vertical spacing between lines of type shall be 0.046 inch (1.17 mm).^{*} Lowercase letters shall be compatible with the uppercase letter size specification.

These instructions shall specify:

- a. Adequate clearances around air openings.
- b. Provisions for adequate combustion and ventilation air.
- c. Adequate clearances for accessibility for purposes of servicing and proper operation.
- d. The installation instructions for an appliance for installation on combustible flooring shall specify that when the appliance is installed directly on carpeting, tile or other combustible material, other than wood flooring, the appliance shall be installed on a metal or wood panel extending the full width and depth of the appliance.

^{*} This letter height and line spacing corresponds to 12 point type.

e. The installation instructions for an appliance for installation at a specified minimum distance above combustible flooring shall specify that the specified clearance shall be maintained from the top surface of carpeting, tile, etc.

f. Minimum clearances to combustible construction as verified by test (see 2.15).

In addition to the minimum clearances the installation instructions shall identify the left and right side and front of the appliance. For those clearances where a second side wall is specified, accessibility for purposes of servicing shall also be addressed.

g. If applicable, clearances from any projection(s) such as shelves, window sills, fireplace mantles, etc., above the appliance (see 1.20.7).

h. As applicable:

1. An unvented room heater having input rating of more than 10,000 Btu per hour shall not be installed in a bedroom or bathroom; or
2. An unvented room heater having a input rating of more than 6,000 Btu per hour shall not be installed in a bathroom.

When instructions for a series of similarly constructed room heaters are included in a common printing, the instructions shall identify by model number and input rating any installation restriction pertaining to the above.

- i. Information to adequately cover cleaning of the appliance including the burner(s).
- j. The manufacturer's, distributor's, jobber's or dealer's name, as it appears on the appliance rating plate, and address and appliance model or series number.

k. The installation must conform with local codes or, in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1.

l. The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any



1901 North Moore Street • P.O. Box 9245 • Arlington, Virginia 22209 • 703/525-9565

March 19, 1993

TO: DIRECT HEATING DIVISION
(Delegates, Alternates, Technical Representatives and
Government Affairs Coordinators)

FTC Proposes to Continue
Exemption of Direct Heating
Equipment From Its Appliance Labeling Rule

In a notice of proposed rulemaking published in the March 5, 1993, Federal Register, the U.S. Federal Trade Commission (FTC) solicits public comment by April 19, 1993, on various proposed amendments to its Appliance Labeling Rule for NAECA-covered appliances. The FTC proposes to continue to exempt electric space heaters and vented gas space heaters from its Appliance Labeling Rule, and also proposes to exempt unvented gas space heaters. Unless Division members instruct otherwise, GAMA will submit written comments by the April 19 deadline supporting these decisions. A copy of the FTC's Federal Register notice is attached to the delegate's copy of this bulletin.

The FTC's Appliance Labeling Rule dates from 1979. In the original FTC rulemaking proceeding, the FTC exempted electric space heaters and vented gas space heaters from its energy efficiency labeling requirements. In June 1988 the FTC commenced a new rulemaking proceeding to consider possible amendments to its Appliance Labeling Rule. In a notice of proposed rulemaking published in the June 13, 1988, Federal Register, the FTC solicited public comment on several questions. One of those questions was whether the FTC should prescribe efficiency labeling requirements for unvented gas space heaters in view of the fact that the U.S. Department of Energy (DOE) had published efficiency test procedures for unvented gas space heaters in 1984.

The FTC received two comments on this issues, one from GAMA and one from the Coalition for Energy Efficient Appliance Labeling (CEEAL) an ad hoc coalition composed of consumer, utility and environmental advocacy organizations. GAMA recommended exemption of unvented gas space heaters from the FTC's Appliance Labeling Rule. CEEAL recommended that the FTC require labeling of both vented and unvented gas space heaters.

/Continued . . .



In its March 5, 1993, Federal Register notice, the FTC proposes to exempt unvented heaters fueled by natural gas, propane and kerosene from its Appliance Labeling Rule. The FTC's reasoning is that "because all models are 100% efficient, and because there is no significant difference in operating cost among similarly sized models, labels disclosing costs would not help consumers make purchasing decisions." (page 12828) The FTC also makes the following statement regarding labeling of vented heaters:

"The Commission exempted the category of vented heaters (all fuel types) during the original rulemaking proceeding. The Commission finds that the present record does not contain sufficient justification for reversing that decision." (page 12828, footnote 102)

Joseph M. Mattingly
Director of Government Affairs
and General Counsel

JMM:gjr-1
Attachment (delegate's copy only)



August 24, 1993

Mr. Mark A. Nolan
Supervisor
Gas Standards & Technology
Public Service Company of Colorado
P. O. Box 840
Denver, Colorado 80201-0840

Dear Mark:

This is in response to your letter of August 13, 1993 regarding unvented room heaters.

High Altitude Performance of the ODS:

As you know there have been many vent-free appliances sold and used throughout Colorado. In fact, one manufacturer alone is now selling three semi-truckloads of vent-free fireplaces per month in Colorado.

Consideration of high altitude installation and usage is accounted for in the ANSI Z21.11.2 standard by reference to the National Fuel Gas Code, ANSI Z223.1/NFPA 54. A.G.A. Laboratories continues to certify designs for compliance with the applicable national safety test standards with confidence concerning safe operation due to the immense consensus approach taken to develop the standards in use.

Although I recognize you do not have the capability to test under the ANSI standard, my understanding from your comments in Denver on June 25th was that your June 93 testing in Denver and Leadville confirmed that:

1. The ODS shut off the gas supply to the pilot and main burners before the oxygen level reached 18 percent.
2. The CO levels you measured were always lower than the level allowed by the ANSI standard.
3. You experienced no "Nuisance outages".

/Continued . . .



On some appliances, A.G.A. requires the manufacturer to include a statement in the Operating Instructions stating that, "The product is designed to be operated at elevations of less than 5,000 feet. If operated at higher elevations, nuisance outage may occur." Let me stress that this does not apply to all vent-free appliances and, although it may be a nuisance, it is not a safety concern. The Gas Research Institute (GRI) is currently running vent-free heaters up and down the Colorado mountains. I can assure you that insight from this effort to avoid nuisance shut downs will be incorporated into the national safety standards.

The "accompanying noise" from the pilot when you turned the control to "pilot" after operating the appliance for extended periods is completely normal. This low-level noise lasts until the appliance cools down (about 5 minutes) and presents no operational or safety hazard. It is completely eliminated by following the manufacturer's instructions to turn the control knob to the "off" position when not using one of the three heat settings.

Production and Accumulation of Carbon Monoxide:

The ODS will ensure the gas supply to the pilot and main burners is shut off if the oxygen in the surrounding atmosphere is depleted to a level at or above 18.0 percent.

In addition to the 30 million ODS-equipped appliances sold in Europe since 1961, there have now been over 2,250,000 sold in the U.S. since 1981 without a single CO-related fatality. This is a lot of appliances used for a long period of time without causing a CO-related fatality. Since there has never been a CO-related fatality from an ODS-equipped appliance, the concern for CO production in an atmosphere with more than 18 percent oxygen is an unjustified concern.

*This number is new
over 2,600,000!*

The Statement to Open a Window When Using the Heater.

All gas appliances require make up combustion air. This can be accomplished in several ways:

1. In homes of ordinary tightness, all or a portion of the combustion air may be obtained from infiltration when the requirement for 50 cubic feet per 1000 Btu/h input is met. (Section 601(a) and Section 605(d)1 of the Uniform Mechanical Code (UMC)). NOTE: Some cities and counties that have adopted the UMC use this as a guide for vent-free appliances in all construction since Section 601(a) of the UMC exempts "domestic clothes dryers and listed cooking appliances" from the combustion air requirements of Chapter 6 of the UMC.

/Continued . . .

2. For homes which are built to "unusually tight construction" standards, combustion air for the central heating system must be obtained from outside through permanent openings. NOTE: These combustion air ducts should not terminate adjacent to a vent-free appliance because this would eliminate the effectiveness of the ODS.
3. Opening a window an inch or two.

While I know of no published analysis concerning how many residents open a window for fresh air, I believe the fact that there have been over 2,250,000 vent-free appliances sold in the U.S. since 1981 without a single CO-related fatality makes this an academic rather than a practical concern. If there is insufficient make-up air, the ODS will simply shut off the gas supply to the pilot and main burners.

Violation of the 1991 Uniform Mechanical Code:

International Conference of Building Officials (ICBO) is the only national model code that does not allow vent-free appliances in residences. Council of American Building Officials (CABO), Building Officials and Code Administrators International (BOCA), Southern Building Code Congress International (SBCCI), and the National Fuel Gas Code all recognize the use of vent-free room heaters and decorative gas logs and fireplaces in residences. We are very pleased that many cities and counties throughout the area where the ICBO codes are adopted have made an exception to this restriction based on the enviable safety record of the appliances. I believe this can only help in the process of changing the UMC to align with all the other national building codes.

ICBO has given two reasons for not allowing vent-free appliances:

1. The equivalent safety of an oxygen-depletion sensor to a conventional venting system which carries the products of combustion to the outside has not been established.
2. The condensation of water vapor (1.6 quarts per hour) at maximum burn (39,000 Btu/h) creates corrosion and potential structural damage problems.

We know of No Basis (scientific or historical) for either of the above stated reasons. The Facts are:

1. In addition to the 30 million ODS-equipped appliances sold in Europe since 1961, there have now been over 2,250,000 sold in the U.S. since 1981 without a single CO-related fatality.

/Continued . . .

August 24, 1993
Mr. Mark A. Nolan
Page 4

2. In all of our work throughout the U.S. and Europe, we are not aware of any case where a vent-free appliance has caused corrosion or structural damage. The amount of water vapor created at the maximum burn rate is less than half that produced by a good home humidifier!

Vent-free heaters are a supplementary not a primary source of heat. If unacceptable levels of condensation occur on windows, the heaters will be turned off.

Sincerely,



Gary D. Thibeault
Codes and Standards Coordinator
Technical Services

GDT/ljb

INDOOR AIR QUALITY IN A LOW INFILTRATION RATE HOUSE

BY RICHARD J. PRIEM

AMERICAN GAS ASSOCIATION LABORATORIES [Dec 1985]

SUMMARY

This paper reports the results of studies conducted by the American Gas Association Laboratories (AGAL) staff in an ultra-tight research and demonstration house to determine the effects of infiltration rate on indoor air quality.

The research and demonstration house (2,500 ft.²) was constructed with a high level of insulation [R-40 walls and R-50 ceilings]. Inside the house, just under the drywall on the ceilings and walls, and under the basement floor, a 6-mil polyethylene film vapor barrier was installed to reduce normal air infiltration. The seams were glued together to form a continuous sheet as an air/vapor barrier. Breaches in the air/vapor barrier were avoided by placing electric outlets and air registers on the floor instead of outside walls. Windows were triple-glazed with an R value of 3.1. Exterior doors were insulated to an R value of 6. W. S. Fleming & Associates were commissioned to conduct on-site envelope integrity tests. Together with AGAL personnel, they located and sealed all envelope leaks. During winter testing, the air change rates were determined to be 0.5 air changes per hour (ACPH) when the house was unoccupied.

Applicable indoor air quality standards from OSHA and EPA for CO, CO₂, NO_x, and NO₂ were used for reference. AGAL found that houses with low infiltration rates do not have high concentrations of pollutants as might be expected. The data also showed that indoor air quality pollutants were higher during the summer when the house was air conditioned than in the winter. However, **THE POLLUTANT LEVELS NEVER EXCEEDED THE APPLICABLE STANDARDS.**

For example, during a cooking period for a family of four when chicken was baked, potatoes were deep fried and water was boiled, the CO₂ and CO levels rose to peak values of 0.1% and 4 PPM respectively. Concentration maximums were achieved within 5 minutes of starting a gas appliance. When the appliance was turned off, the concentration decreased dramatically within 20 minutes. During this period gasses were presumably being mixed throughout the house. However, concentrations in other areas did not noticeably increase. AGAL concluded that since indoor air concentrations in the kitchen area during cooking periods did not change significantly as infiltration rates were changed, air quality in the cooking area was controlled by the emissions from the appliances and not by the infiltration rate to the house.

Tab 2



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

January 13, 1994

TO: Gas Utility Personnel Working With Local Building Officials

FROM: Jim Ranfone/Paul Cabot *Jim Ranfone/Paul Cabot*

RE: Updating the COSTIN Mailing List - Reply by February 15th

The American Gas Association's Building Energy Codes and Standards (BECS) Committee is reactivating its information exchange network intended to coordinate A.G.A.'s national code and standards efforts with similar activity on the local level. To update our mailing list, we are asking that you complete and return the enclosed form by February 15, 1994.

A.G.A. formed the BECS Committee in 1978 to assure the marketability of natural gas, in part by addressing overly restrictive and unnecessary code requirements and modifying codes to recognize new concepts. A.G.A. staff and Committee members attend all the model code hearings and annual meetings, maintain liaison with the model code staff, and provide information and technical services to their members. Additionally, they support member companies' efforts with their state and local agencies and provide technical assistance and advice to their representatives.

With enormous changes occurring within the entire gas industry the need for timely two-way communication becomes crucial. To transfer codes and standards information effectively, the BECS Committee will utilize its information exchange service called COSTIN (Codes and Standards Information Network). COSTIN will be a two-way communication mechanism to:

FAX: (216) 642-3463
TELEX: 263574AGA

Each COSTIN mailing will provide you with an update on code and standards activities that A.G.A. and the BECS Committee are involved with. This information can be of use to you in your dealings with local building officials. In return, A.G.A. encourages you to contact A.G.A. Codes and Standards Division staff with questions and local code concerns.

A.G.A. codes and standards staff are: Jim Ranfone, Director, Code, Standards and Technical Support, at (703)841-8648, or Paul Cabot, Manager, Codes, Standards and Technical Support at (703)841-8649.

JR:ms

Attachment

ADDENDUM "A"

INCIDENT STATISTICS
1986, Latest Year Reported By The
Consumer Product Safety Commission

A. FIRE INCIDENTS

- o Gas space heaters account for less than 3% of all heating equipment fires.

NATIONAL FIRE INCIDENT PROJECTIONS, 1986

<u>Heater Types</u>	<u>Fires</u>	<u>Civilian Deaths</u>	<u>Civilian Injuries</u>	<u>Property Loss (Millions)</u>
All*	150,000	640	2,380	\$574.5
Wood/Coal Heaters	87,000	110	420	\$188.9
Electric, Fixed and Portable (not including central heating)	5,700	150	240	\$48.4
Gas, Fixed and Portable (not including central heating)	4,800	70	260	\$44.8
Kerosene/Oil, Fixed and Portable (not including central heating)	3,400	100	310	\$30.4

*The "All" category includes fixed and portable space heaters, central furnaces, water heaters, fireplaces, chimneys and other heating equipment using solid or liquid fuel, gas, electricity or other energy sources..

B. CONTACT BURNS

- o Only 0.02% of all gas heaters in use resulted in contact burns in 1982 per CPSC estimates.
- o The gas heater incident rate is 1/3 that of portable kerosene heaters, and 2/3 that of wood/coal stoves.

ADDENDUM "B"

VENT-FREE HEATER COMPARISON
GAS VS. PORTABLE KEROSENE

	<u>GAS</u>	<u>KEROSENE</u>
Comprehensive Safety Standard	Yes (ANSI-Z21.11.2-1983)	Yes (UL647)
Certified or Listed by Independent Nationally Recognized Laboratory	Yes	Yes
Surface Temperature Limit	Yes	Yes
Wall & Floor Temperature Limits	Yes	Yes
Clothing Ignition Safeguards	Yes	Yes
Permanent Installation	Yes	No
ODS Equipped	Yes	No
Safety Shutoffs	Yes	Yes

Note 1: The safety standard for vent-free gas space heaters is identical to the standard for vented gas space heaters pertaining to surface temperatures and fire safety.

Note 2: The following eight states have passed legislation since 1981 permitting the sale and use of listed portable kerosene heaters: Delaware, Maryland, New Hampshire, New York, Ohio, Rhode Island, South Dakota, and Washington.

This is particularly unfortunate today since the costs of heating with central equipment have risen so sharply in recent years. When a space heater is used for supplementary or zone heating, home heating costs can be reduced, and gas is less costly than both electricity and kerosene.

Today's vent-free gas-fired space heater bears little resemblance to that used 30, 20 or even 10 years ago. There have been significant technological advances and, equally important, the national safety standard has been continuously updated to insure a safe product.

Therefore, these products, as designed and manufactured today, deserve to be recognized for the safe economical source of heat that they are and accepted in all states and local areas.

III. BENEFITS

A. Efficiency

Since there is no heat lost through a vent, the efficiency of vent-free gas-fired space heaters is nearly 100%. In fact, the U.S. Department of Energy's Test Procedures for Unvented Home Heating Equipment, issued March 28, 1984, assign a 100% fuel efficiency to vent-free gas-fired space heaters.

B. Operating Cost

In its February 29, 1983 Federal Register notice, the Federal Trade Commission provided information on costs for the various fuels as noted below. In its comparison of 1988 national average prices of electricity versus gas in

dollars per million Btu's, natural gas and LP-gas are shown to be clearly superior economically for heating.

<u>TYPE OF ENERGY</u>	<u>IN COMMON TERMS</u>	<u>DOLLARS PER MILLION BTU'S</u>
Electricity	8.04 cents/kwh	\$23.56
Natural Gas	56.2 cents/therm or \$5.80/MCF	5.62
Propane	70.0 cents/gallon	7.69

According to these figures, the cost to heat a space with a gas space heater would be less than a third of the cost to heat the space with an electric space heater.

C. Installation

The simple permanent installation avoids those potential fire hazards associated with portable heaters. Not only is the expense of a vent or chimney avoided, but also the problems of blockage or leaks.

IV. SAFETY

An analysis of the latest statistics (1986) compiled by the U.S. Consumer Product Safety Commission (CPSC) reveals that of the total 150,000 fires involving space heating equipment of all types (i.e., electric, coal, gas, etc.), gas-fired space heaters accounted for only 3%.

This exemplary record of minimal accident reports related to gas-fired heating equipment is not purely coincidental. The strict adherence of manufacturers to national safety standards for gas heating equipment is the major contributor to this excellent safety record.

A. Safety Standard

For many years, the American National Standards Institute has maintained a safety and performance standard for vent-free gas-fired space heaters under the nomenclature of ANS Z21.11.2. This standard is constantly upgraded to provide the highest degree of safety possible, based on the state-of-the-art technology. All listed or certified products sold in the U.S. must be tested to this standard.

The following are some of the revisions that have been incorporated into the American National Standard since 1975:

1. Reduction of surface temperatures to minimize potential for contact burns. This provision eliminated from the marketplace all the extremely low priced heaters, commonly referred to as bathroom heaters, which were the major cause of incidents.
2. Automatic ignition and safety shutoff devices for safer starting and operation.
3. Pressure regulator which prevents over-firing in case of increased gas pressure.
4. Surface guarding to minimize accidental contact with parts of the heater which could accidentally ignite fabric.
5. A warning label on the front of the heater which is clearly visible from 5 feet away stating: "CAUTION: Hot while in operation. Do not touch. Keep children, clothing and furniture away."

6. Wall and floor temperature limits during heater operation were established as well as maximum output temperature at the discharge air opening.
7. Oxygen depletion safety shutoff system (ODS) is required for all vent-free gas space heaters.

There are a total of 19 major performance test requirements including carbon monoxide in the current standard.

B. U.S. Consumer Product Safety Commission

The CPSC has been actively monitoring the improvements in the standards for unvented gas-fired space heaters. In 1974, CPSC began an extensive study of this product since it had received a petition to develop a mandatory safety standard for all types of space heaters, electric, oil, gas, etc. CPSC decided not to proceed with the development of a mandatory standard for unvented gas-fired space heaters because it found that there was an extremely high degree of compliance with voluntary standards, and that the standards had been revised as outlined above to address more adequately the majority of identified risks. Another risk, that of carbon monoxide, led to the CPSC proposal in 1978 to ban unvented gas-fired space heaters. The proposed ban was then withdrawn in favor of mandatory use of an oxygen depletion sensing (ODS) system. In 1980, a CPSC issued a mandatory regulation which required that all unvented gas-fired space heaters be equipped with the ODS capable of shutting off the gas supply to the heater when the oxygen in the surrounding atmosphere is reduced to a level below 18%. The normal level of oxygen in the atmosphere is approximately 20.9%. Concurrently, the requirement for the ODS was made part of the American

National Standard for unvented gas-fired space heaters. In its issuance of the ODS requirement, CPSC provided substantial technical data supporting the 18% oxygen level cutoff point. The following is an excerpt from the September 17, 1980 Federal Register notice issued by CPSC on the ODS:

"These data lead the Commission to the conclusion that an ODS which shuts off gas to the heater when surrounding oxygen is depleted to less than 18% would be adequate to address the acute hazard and thereby reduce the number of deaths from CO poisoning associated with unvented gas-fired space heaters. Further, since the ODS can be expected to effect a reduction in CO emissions by shutting off the gas supply, such a reduction can also help reduce levels of available CO that may present a chronic hazard.

"Based on the available data the Commission has adopted, with nonmaterial modifications, the ODS provision of the ANSI standard which provides for shutoff at no less than 18% oxygen, when using the gas specified in the standard."

On November 23, 1984 CPSC revoked its ODS requirement, recognizing that the voluntary requirements in the American National Standard noted above require an ODS and that there is a high degree of compliance with this standard by the industry.

In an October 18, 1984 letter, Nancy Harvey Steorts, then Chairman of the CPSC, made the following statement regarding the ANS safety standard for unvented gas-fired space heaters:

"I would like to express my total agreement with you regarding the significant progress that has been made to improve the safety of unvented gas space heaters. Besides the work that has been done to reduce carbon monoxide poisonings, safety improvements to address the risk of contact burns, fires and explosions have been significant. I personally feel that the cooperative working relationship between the Commission staff and the ANSI subcommittees for gas-fired appliances is one of the best examples of industry and government working together for the safety of the consumer. I am certain that this positive relationship will continue."

C. The Oxygen Depletion Sensing (ODS) System

The following is a brief explanation of the operation of an ODS:

The ODS system consists basically of three components: a precisely designed pilot burner that provides regulation of flame characteristics, a thermocouple positioned in the mantle of the pilot flame and a safety shutoff valve. The pilot is designed to be stable within a very narrow operating range. The thermocouple responds to changes in the pilot flame characteristics and, when heated, generates a millivoltage across the solenoid which keeps the gas supply valve in the open position. If low levels of oxygen are present in the proximity of the ODS system,

the flame extinguishes. The loss of flame causes the thermocouple to cool which, in turn, reduces the millivoltage across the solenoid causing the gas valve to return to its normally closed position.

The Oxygen Depletion Sensing (ODS) System has been used extensively on vent-free gas-fired space heaters in Europe since 1961 and has an excellent record for both safety and reliability.

V. CODES AND STANDARDS

In the United States there are a variety of state and local building codes. Many of these codes are based on model codes adopted by five different model building code-making bodies:

- o National Fire Protection Association (NFPA)
- o Council of American Building Officials (CABO)
- o Southern Building Code Congress International (SBCCI)
- o Building Officials and Code Administrators International (BOCA)
- o International Conference of Building Officials (ICBO)

The following is a summary of the coverage concerning vent-free gas-fired space heaters:

NFPA 54 National Fuel
Gas Code

The Code's only restrictions for vent-free gas space heaters are that they shall not be installed in sleeping quarters, bathrooms or institutions.

This code has been adopted by the American National Standards Institute as the National Fuel Gas Code, ANSI Z223.1.

CABO

The code allows vent-free fuel-fired space heaters equipped with ODS systems in one and two family dwellings.

SBCCI

Vent-free space heaters are permitted if they are listed, installed in accordance with their listing and the manufacturers' instructions, equipped with an ODS system, not installed in sleeping quarters and have less than 40,000 Btu/hr. input rating.

BOCA

Vent-free space heaters must be listed (or certified) by a recognized testing agency. There are no restrictions on use.

ICBO

Listed vent-free overhead space heaters are permitted for other than residential or institutional use.

VI. SUMMARY

Throughout this country, American consumers should have the opportunity to benefit from one of the most economical and safest sources of supplementary heat -- the vent-free gas-fired space heater.

FOR FURTHER INFORMATION, PLEASE CONTACT:

Jack P. Langmead, Vice President and Director of
Technical Services

or

Joseph M. Mattingly, Director of Government Affairs

at

Gas Appliance Manufacturers Association
703-525-9565

DEVELOPMENT AND USE OF THE
OXYGEN DEPLETION SENSOR (ODS VALVE)
TO PREVENT ACCIDENTAL
CARBON MONOXIDE POISONING

The most significant safety issue relating to unvented decorative gas logs and fireplaces is the possibility of accidental poisoning from an overdose of carbon monoxide (CO). The ODS valve was developed to eliminate this potential hazard.

In simple terms, this virtually fail-safe device is designed to shut off the gas supply if the amount of available oxygen in the room is lower than predetermined amounts. In the United States this predetermined amount has been determined by the Consumer Products Safety Commission of the United States ("CPSC") to be 18%. At sea level the amount of oxygen in the air is approximately 20.9%. Since there is a direct relationship between the amount of oxygen available and the level of CO, the ODS valve will shut off the gas supply long before dangerous levels of CO can accumulate.

ODS valves were required in Europe in the early 1960's. Since that time, there has not been a single report of any fatality associated with the use of an ODS-equipped appliance even though millions of these units are now in use throughout the world. In fact, on September 17, 1980, CPSC issued a detailed study of the ODS valve and concluded that "an oxygen depletion device has been used successfully on unvented heaters in Europe for many years. The device is known there as an oxygen depletion sensor. According to the European manufacturer of such devices during the 20 years this device has been used on unvented gas fire and space heaters in Europe, there have been no reported deaths associated with such heaters." Federal Register - Volume 45, No. 182, September 17, 1980.

This unparalleled safety record, first established in Europe, has now been repeated in the United States. Since ODS valves were introduced into the United States market in the early 1980's, there has not been a single reported death associated with the use of an ODS-equipped unvented gas product. The Southern Building Code Congress International Inc. (SBCCI), Building Officials and Code Administrators International, Inc. ("BOCA"), and Counsel of Building Officials (CABO) all allow the use of unvented gas appliances equipped with ODS valves.

At this point a brief description of the ODS valve and its operation would be useful. The diagrams (Figs. 1 & 2) which follow will help to explain the design and operation of the ODS valve.

The ODS system consists of the following main components:

- A precise pilot flame
- Spark ignition
- Thermocouple
- Main shut-off valve

All of these components are pre-set at the factory and cannot be adjusted by the user. The precise pilot flame is achieved by a ruby orifice laser-drilled to precise tolerances.

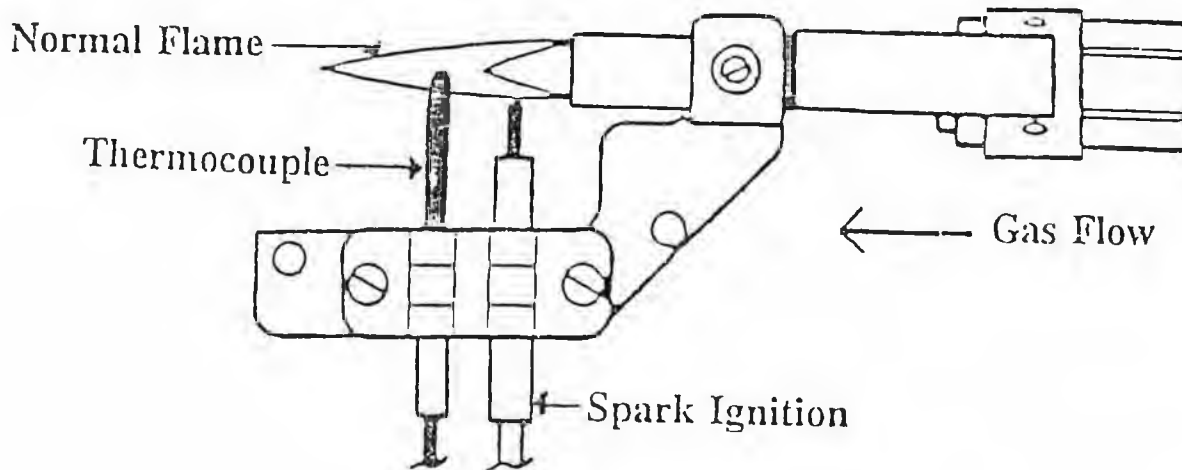
Under normal operating conditions, the pilot flame is stable and burns across the thermocouple. The heated thermocouple produces a small electrical current which is connected to a small solenoid valve in the main gas supply valve. This small current is just enough to keep the main gas supply valve open. See Fig. 1. The main gas supply valve is spring loaded and will remain open so long as the thermocouple's electrical current pulls the solenoid open. If the thermocouple's current is stopped, the main gas supply valve will automatically close, cutting off the entire gas supply to the unit, including the pilot.

When the oxygen level approaches 18%, the pilot flame becomes unstable. At a minimum of 18% the pilot flame lifts off the thermocouple. The thermocouple quickly cools and the electric current stops, causing the main gas supply valve to return to its normally closed position, and the gas supply to the unit is shut off. See Fig. 2.

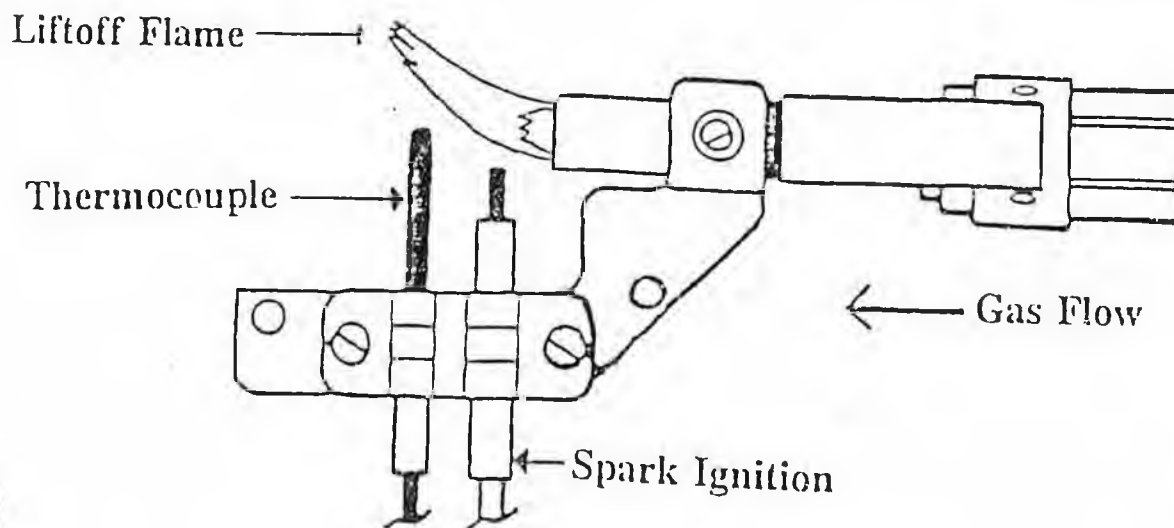
The design, construction, and operation of this ODS valve is as dependable and safe as any component can be.

Oxygen Depletion Sensor "ODS"

1. 1 - Normal Operation



1. 2 - Shut-off Conditions (Less than 18% oxygen)



DEVELOPMENT OF STANDARDS FOR VENTLESS PRODUCTS

During the late 1970's the American gas industry became impressed with the use of ODS valves in Europe and sought to develop standards that would incorporate these valves into North American products. During the same period of time, the American Gas Association ("AGA") and the American National Standards Institute ("ANSI") jointly developed a set of voluntary standards for the gas industry for the use of unvented appliances. The industry published the standards in its official document entitled ANSI-Z21.11.2.

Following the development of these voluntary standards, in 1978 the CPSC began an investigation into unvented gas products. The CPSC asked the National Bureau of Standards ("NBS") to assist in the testing and the development of standards for ventless gas products. Over the course of nearly two years, the NBS conducted extensive tests to evaluate the ODS valve and other competitive technology. NBS concluded that the other competing technologies did not show much promise, but that the ODS valve was a safe and very reliable device. The NBS then conducted tests to determine what calibrated oxygen limits the ODS valve should be set at in the United States to protect the consumer from accidental CO poisoning. The NBS concluded these tests and reported to the CPSC that an 18% oxygen level afforded a very high degree of protection to the public from accidental CO poisoning. As part of this evaluation, the NBS collected data which showed that it took CO concentrations of 200-300 parts per million ("PPM") over a period of four hours to create any symptoms of CO poisoning. The NBS also concluded that concentrations of 1000-1500 PPM over a period of 10 hours were needed to cause death. In sealed test conditions, the ODS valve was found to shut off the gas before levels of CO reached 37 PPM. In actual room conditions, TemTex has determined that actual CO levels are under 10 PPM, and often below 5 PPM.

On September 17, 1980, the CPSC reported in the Federal Register the findings of the NBS and proposed specific regulations regarding the use of ODS valves that would eventually become part of 16 CFR Part 1212. Although this report was quite complex and technical, it resolved two critical questions. First, it concluded that the ODS valve was safe and reliable. It noted that in all of the testing done by the NBS, there had not been a single failure of an ODS valve. Second, it concluded that 18% oxygen was more than adequate to address the hazards of CO poisoning associated with the use of unvented gas products.

After the adoption of the CPSC's regulations requiring the use of ODS valves, the AGA and ANSI adopted these mandatory standards as a part of its ANSI Z21.11.2 industry standards. In 1983 after the adoption of the mandatory standards by the CPSC, the Gas Appliance Manufacturer's Association ("GAMA") petitioned the Consumer Products Safety Commission to revoke its mandatory standards because the appliance manufacturing

companies in the United States had unanimously adopted the ODS requirement for their unvented gas products. The CPSC concluded that the mandatory federal requirements were no longer needed and revoked the mandatory federal rules regarding ODS valves in favor of the voluntary adoption by the industry of the ANSI Z21.11.2 standards. These ANSI Z21.11.2 standards require, among other things, that ventless heaters produce less than one-quarter (1/4) as much CO as a modern gas range.

This extensive testing by the industry and the federal government has established that ventless products which meet ANSI Z21.11.2 standards and are equipped with ODS valves are extremely safe devices.

Unvented Room Heaters

American National Standard Z21.11.2
and

A.G.A. Requirements for Unvented Room Heaters Equipped With
Oxygen Depletion Safety Shutoff Systems, 2-79

UNVENTED ROOM HEATER. An unvented, self-contained, free-standing, nonrecessed (except as noted under 2 of the following classifications), fuel-gas burning appliance for furnishing warm air by gravity or fan circulation to the space in which installed directly from the heater without duct connection. Unvented room heaters do not normally have input ratings in excess of 40,000 Btu per hour.

1. **Unvented Circulator.** A room heater designed to convert the energy in fuel gas to convected and radiant heat by direct mixing of air to be heated with the combustion products and excess air inside the jacket. Unvented circulators have an external jacket surrounding the burner and may be equipped with radiants with the jacket open in front of the radiants.
2. **Wall Heater, Unvented Closed Front.** An unvented circulator having a closed front, for insertion in or attachment to a wall or partition. These heaters are plainly marked, "UNVENTED HEATER" in letters $\frac{1}{4}$ inch high and do not have normal input ratings in excess of 25,000 Btu per hour.

Unvented room heaters listed in this section are equipped with oxygen depletion safety shutoff systems designed to act to shut off the gas supply to the main burner and pilot burner if the oxygen content of the surrounding atmosphere is reduced below a predetermined level.

INSTALLATION.

National Fuel Gas Code, ANSI Z223.1 (NFPA 54)

6.23.1 Prohibited Installations: Unvented room heaters shall not be installed in bathrooms or bedrooms.*

6.23.2 Installations in Institutions: Room heaters shall not be installed in institutions such as homes for the aged, sanitariums, convalescent homes, orphanages, etc.

Refer also to local codes.

*It is recommended that space heating appliances installed in all bedrooms or rooms generally kept closed be of the direct vent type.

Unvented room heaters require fresh air openings into the room in which the heater is installed. Refer to marking on heater and manufacturer's installation instructions.

The certified designs of room heaters are such that temperatures of adjacent combustible walls and surfaces will not be excessive when the heater is installed and used as specified in the manufacturer's instructions and on the marking plate. Certification anticipates installation on wooden floors unless the appliance is designed and marked for installation in noncombustible fireplaces only.

For additional installation information, reference should be made to the current edition of the National Fuel Gas Code, American National Standard Z223.1 (NFPA 54). Copies are obtainable from the American Gas Association, 1515 Wilson Boulevard, Arlington, Virginia 22209.

Input ratings are shown in Btu per hour and are for elevations up to 2,000 feet. For elevations above 2,000 feet, input should be reduced 4 percent for each 1,000 feet above sea level.

Model Number	Input Rating
APPALACHIAN STOVE & FABRICATORS, 329 Emma Road, Asheville, North Carolina 28806	
For Use With Natural Gas	
Unvented Room Heaters For Installation In Solid-Fuel Burning Fireplaces Only	
	Trade Name: Ultra-Flame
UV-4000N, UV-4000-30N	40,000
Unvented Circulators (Gas Logs)	
UV-36FPN, UV-42FPN	40,000

**For Use With Liquefied Petroleum Gases
Unvented Circulators**

DIR18LP	Max.	15,900
	Min.	6,000
DIR30LP	Max.	25,000
	Min.	6,000

The other models listed for use with natural gas also are for use with liquefied petroleum gases with the same ratings and trade name.

**DESA INTERNATIONAL, 2701 Industrial Drive,
Bowling Green, Kentucky 42101**

For Use With Natural Gas

Unvented Circulators

Trade Name: Comfort Flame

CMH2800TN	Max.	28,000
	Min.	14,000

Trade Name: Comfort Glow

CGN18R	Max.	18,000
	Min.	6,600
CGN30C	Max.	30,000
	Min.	6,600

Trade Name: Radiant Flame

RFN2ST	Max.	28,000
	Min.	14,000

Trade Name: Vanguard

VMH2800TN	Max.	28,000
	Min.	14,000
VN1800C, VN1800IT, VN1800TC	Max.	18,000
	Min.	6,600
VN2550IT	Max.	25,500
	Min.	7,000
VN3000C	Max.	30,000
	Min.	6,600
VN3000TC	Max.	30,000
	Min.	13,200

**Unvented Room Heaters For Installation in Solid-Fuel Burning
Fireplaces Only**

Trade Name: Comfort Flame

CFLH26N	Max.	26,500
	Min.	18,000
CFLH39N	Max.	39,000
	Min.	12,000

Trade Name: Vanguard

VLH26N	Max.	26,500
	Min.	18,000
VLH39N	Max.	39,000
	Min.	12,000

Unvented Wall Heaters

Trade Name: Comfort Glow

CGN10	Max.	10,000
	Min.	5,000
CGN12	Max.	12,000
	Min.	6,000
CGN18A, CGN18B, CGN18TA	Max.	18,000
	Min.	9,000
CGN28TA	Max.	28,000
	Min.	14,000

(Continued from page 319)

The CGN, CGP, TGN, TGP, VN and VP series (except Model Nos. CGN10, CGP10, CGN12, CGP11, VN6A, VP5A, VN12, VP11, VN1000B and VP1000B) and Model Nos. CMH2800TN, RFTN28T and VMH2800TN may be free-standing with an optional base.

The Model Nos. CGN10 and VN1000B may be installed in bedrooms as a wall mounted unit only.

The Model Nos. VN6A and VP5A may be installed in bedrooms and bathrooms as a wall mounted unit only.

The CMH, RFN and VMH series may be used with an optional mantel.

The CFLH and VLH series may be used with Fireplace Manufacturers, Inc. GL(5000, 6000)-series of unvented fireplace inserts.

**EMPIRE COMFORT SYSTEMS, INC., 918 Freeburg Avenue,
Belleville, Illinois 62222-0529**

For Use With Natural Gas

Unvented Circulators

Trade Name: Empire/Corcho

CH-6		6,000
CH-7 NAT	Max.	7,000
	Min.	4,000
CH-15-1	Max.	15,000
	Min.	5,420
CH-18, CH-18-1	Max.	18,000
	Min.	7,000
CH-18T-1		18,000
CH-30, CH-30-1	Max.	30,000
	Min.	7,250
CH-30T-1		30,000

Trade Name: Empire Indiglo

VF-10-1		10,000
VF-20-1	Max.	20,000
	Min.	3,500
VF-30-1	Max.	30,000
	Min.	8,500

For Use With Liquefied Petroleum Gases

Unvented Circulators

Trade Name: Empire/Corcho

CH-7	Max.	7,000
	Min.	3,300
CH-18, CH-18-1	Max.	18,000
	Min.	6,500
CH-30, CH-30-1	Max.	30,000
	Min.	7,000

The other models listed for use with natural gas also are for use with liquefied petroleum gases with the same ratings and trade names.

The CH- series may be wall-mounted.

The Model No. VF-10-1 may be installed in bedrooms as a wall mounted heater.

MAJCO BUILDING SPECIALTIES, L.P., 1000 E. Market Street,
Huntington, Indiana 46750

For Use With Natural Gas

Unvented Room Heater For Installation In Solid-Fuel Burning
Fireplaces Only

Trade Names: Majco Building Specialties, Majco

VL21	Max.	32,000
	Min.	18,000

For Use With Liquefied Petroleum Gases

The model listed for use with natural gas also is for use with liquefied petroleum gases with the same ratings and trade name, but with final suffix LP.

All models may be used with Majco Building Specialties, Majestic VF36/VFC36-series of unvented fireplace inserts.

MARTIN INDUSTRIES, INC., P. O. Box 128, Florence, Alabama 35631

For Use With Natural Gas

Unvented Circulators

Trade Name: Martin

C2120	Max.	20,000
	Min.	12,000
C2130	Max.	30,000
	Min.	18,000
C2140	Max.	40,000
	Min.	24,000
GIR30-NAT	Max.	30,000
	Min.	6,900
MIR6-NAT, MIR6C-NAT		6,000
MIR12-NAT, MIR12C-NAT	Max.	10,000
	Min.	5,600
MIR19-NAT, MIR19C-NAT	Max.	18,000
	Min.	6,400
MIR30-NAT, MIR30C-NAT	Max.	30,000
	Min.	6,900
MIR40-NAT, MIR40C-NAT	Max.	36,000
	Min.	13,000
MIT18-NAT, MIT18C-NAT		18,000
MIT30-NAT, MIT30C-NAT		30,000
MIT40-NAT, MIT40C-NAT		36,000

Unvented Room Heaters

MU/MAZF/HC200C	Max.	20,000
	Min.	16,000
UF/AUF/HC29C	Max.	29,000
	Min.	20,000

**Unvented Room Heater For Installation in Solid-Fuel Burning
Fireplaces Only**

HL17	Max.	25,000
	Min.	12,500
HL27	Max.	40,000
	Min.	20,000
HW40, HW40W	Max.	40,000
	Min.	24,000
MS40, MS40W	Max.	40,000
	Min.	24,000
MU17	Max.	25,000
	Min.	12,500
MU27	Max.	40,000
	Min.	20,000

(Continued from page 323)

For Use With Liquefied Petroleum Gases

The models listed for use with natural gas also are for use with liquefied petroleum gases with the same ratings and trade names, but with suffix N replaced by suffix L.

**THE READYBUILT PRODUCTS CO., 1701 McHenry Street,
Baltimore, Maryland 21223**

For Use With Natural Gas

Unvented Circulators

Trade Name: Readybuilt

30-OS	22,000
30-OSR	22,000
RB40-ODS	22,000

For Use With Liquefied Petroleum Gases

Unvented Circulator

30-OS	14,000
-------------	--------

The other models listed for use with natural gas also are for use with liquefied petroleum gases with the same ratings and trade name.

**RINNAI CORPORATION, 2-26, Fukuzumi-Cho,
Nakagawa-Ku, Nagoya, Japan**

For Use With Natural Gas

Unvented Circulators

Trade Name: Rinnai

REH-15FB-N, REH-15TB-N, REH-15TC-N	Max.	15,200
	Min.	8,400
REH-19D-N	Max.	20,000
	Min.	7,700
REH-20B-N, REH-20FB-N, REH-20TB-N, REH-20TC-N	Max.	20,000
	Min.	11,000
REH-27D-N	Max.	27,000
	Min.	7,700

Unvented Wall Heaters

Trade Name: Equator

REH-6-N	6,000
REH-10-N	Max. 10,000
	Min. 5,500

Trade Name: Rinnai

REH-18-N, REH-18T-N	Max.	18,000
	Min.	9,600
REH-25-N, REH-25T-N	Max.	25,000
	Min.	14,000

For Use With Liquefied Petroleum Gases

Unvented Circulators

REH-15FB-P, REH-15TB-P, REH-15TC-P	Max.	14,000
	Min.	7,400
REH-19D-P	Max.	19,500
	Min.	7,000
REH-20B-P, REH-20FB-P, REH-20TB-P, REH-20TC-P	Max.	19,000
	Min.	10,000
REH-27D-P	Max.	26,000
	Min.	7,000

Trade Name: TEMCO American Dream

ADF36N, ADF42N, ADL36N, ADL42N	Max.	39,000
	Min.	12,000
ADF3629N, ADL3629N	Max.	29,000
	Min.	8,500

Unvented Room Heaters For Installation In Solid-Fuel Burning
Fireplaces Only

Trade Name: FIRETECH 2000

2000N	Max.	39,000
	Min.	12,000
2020N	Max.	29,000
	Min.	8,500

Trade Name: TEMCO American Dream

AD29N	Max.	29,000
	Min.	8,500
AD39N, AD3930N	Max.	39,000
	Min.	12,000

For Use With Liquefied Petroleum Gases

Unvented Circulators (Gas Logs) Trade Name: FIRETECH 2000

FP2000P, FP4000P, FR2500P, FR4500P	Max.	31,000
	Min.	10,000
FP2023P, FR2523P	Max.	23,000
	Min.	8,500

Trade Name: TEMCO American Dream

ADF36P, ADF42P, ADL36P, ADL42P	Max.	31,000
	Min.	10,000
ADF3623P, ADL3623P	Max.	23,000
	Min.	8,500

Unvented Room Heaters For Installation In Solid-Fuel Burning
Fireplaces Only

Trade Name: FIRETECH 2000

2000P	Max.	31,000
	Min.	10,000
2020P	Max.	23,000
	Min.	8,500

Trade Name: TEMCO American Dream

AD23P	Max.	23,000
	Min.	8,500
AD31P, AD3130P	Max.	31,000
	Min.	10,000

VALOR HEATING, Wood Lane,
Erdington, Birmingham, B24 9QP England

For Use With Natural Gas

Unvented Circulators Trade Name: Valor

271VN	Max.	18,000
	Min.	7,000
272VN	Max.	30,000
	Min.	7,000

For Use With Liquefied Petroleum Gases

Unvented Circulators

271VP	Max.	15,900
	Min.	6,000
272VP	Max.	25,000
	Min.	6,000

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MAR 31 1994

UNITED STATES GOVERNMENT

Memorandum

U.S. CONSUMER PRODUCT
SAFETY COMMISSION
WASHINGTON, D.C. 20307TO : Douglas L. Noolie, EK-2
Through: Dr. Robert C. Verndien, AED, Epidemiology

DATE: May 18, 1993

(Revision of April 7, 1993
memorandum)

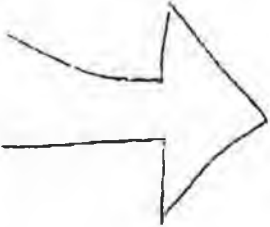
FROM : Beatrice Harwood, EPHA 514

SUBJECT: Rationale for Denying the Gas Space Heater Petitions (SH82-1 through
SH82-23)

The Directorate for Epidemiology recommendation to deny the petitions is based on the fact that there is no evidence that these state and local bans provide a significantly higher degree of protection from the risk of CO poisoning than CPSC's safety standards; in fact, available evidence suggests that communities will be better protected from the risk of CO poisoning by having access to this safety-protected, relatively inexpensive form of heat.

A ban provides a higher level of protection only if the heat source that a consumer a consumer uses in place of the banned product is safer. The Commission has data indicating that several kinds of heating devices that are likely alternatives to ODS-equipped unvented gas space heaters present a significantly higher risk of CO poisoning. These include:

1. Vented gas space heaters.



The risk of CO poisoning is 6 times higher in a vented gas heater than in an unvented heater, even one without an ODS device. 1979 estimates are of 130 deaths from vented heaters out of an estimated 3,253,000 in use, vs. 40 deaths from unvented heaters out of an estimated 3,394,000 in use.

The reason for this is that vented heaters are often not vented properly or are not vented at all. Just this year the Commission has learned of several tragic accidents involving vented gas heaters.

2. Unvented gas heaters not manufactured for indoor use. CPSC in-depth investigations include several accidents involving heaters not intended for indoor use, or make-shift type gas-fired heaters.

3. Hibachis, charcoal grills or other patently unsafe devices, which have been brought into a home or home trailer. Commission files also include examples of this practice.

Although there is no statistical evidence that consumers who are unable to purchase an unvented gas heater (in the event of a local ban) will frequently choose one of the more hazardous appliances named above, available information suggests that this is a reasonable assumption. For example, the vented gas heaters that were involved in the recent Barnwell, S.C. tragedy had been purchased as replacement

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of pages > 2

To: Joe Fasaw	From: Keith Kertlen
Co.	Co.

U.S. Consumer Safety Comm. Ltr.

Phone: 305 772 2450

MAR 31 1994

for unvented gas heaters. Another case in Commission files describes a vented heater that had been purchased as a replacement in a home with several existing unvented heaters. Unwilling to pay the cost of installing a vent, the consumer used the heater in an unvented mode. Several weeks later he and his wife died of CO poisoning.

The price of vented and unvented heaters is about the same, according to the Directorate for Economics, but a vented heater is less efficient, and therefore more costly to operate. The owner of the heater involved in a recent accident in Phenix, Alabama, in which 3 persons died, explained that the vented heater involved had in the past been operated in a vented mode several times but that it "didn't give off any heat."

EC has reported that unvented heaters are usually purchased as replacements, not in new construction, and primarily among low and moderate income groups. A consumer who is unable to purchase an unvented heater may very likely purchase a vented heater instead, but fail to vent it. Even if a vent is installed it is likely not to be installed correctly.


At a recent Commission meeting about vented gas space heaters, manufacturers made the following observations that bear on this question:

- a Sales of vented gas space heaters rose significantly during 1978, when manufacturers voluntarily stopped manufacturing unvented gas heaters, in anticipation of a proposed CPSC ban.
- a A gas space heater designed to be vented but left unvented generates considerably more CO than a gas heater of the same size designed to be unvented.

If only a few persons who would otherwise have purchased an OCS-equipped unvented heater purchase instead, for whatever reason, a vented heater or one of the other devices named above, even though the remaining majority choose a zero-risk alternative, such as an electric heater, the aggregate risk among those households will be higher than the expected risk among households using OCS-equipped unvented heaters.

UNITED STATES GOVERNMENT

Memorandum

U.S. CONSUMER PRODUCT
SAFETY COMMISSION
WASHINGTON, D.C. 20207TO : Douglas L. Noble, EX-P 
Through: Dr. Robert D. Verhalen, AED, Epidemiology

DATE: April 7, 1983

FROM : Beatrice Harwood, EPHA BH

SUBJECT: Rationale for Denying the Gas Space Heater Petitions (SH82-1 through SH82-23)

The Directorate for Epidemiology recommendation to deny the petitions is based on the fact that there is no evidence that these state and local bans provide a significantly higher degree of protection from the risk of CO poisoning than CPSC's safety standard; in fact, available evidence suggests that communities will be better protected from the risk of CO poisoning by having access to this safety-protected, relatively inexpensive form of heat.

A ban provides a higher level of protection only if the heat source that a consumer uses in place of the banned product is safer. The Commission has data indicating that several kinds of heating devices that are likely alternatives to ODS-equipped unvented gas space heaters present a significantly higher risk of CO poisoning. These include:

1. Vented gas space heaters.

The risk of CO poisoning is 6 times higher in a vented gas heater than in an unvented heater, even one without an ODS device. 1979 estimates are of 130 deaths from vented heaters out of an estimated 3,253,000 in use, vs. 40 deaths from unvented heaters out of an estimated 5,394,00 in use.

The reason for this is not that vented heaters are inherently less safe, but rather that consumers all too often fail to vent them properly or do not vent them at all. Just this year the Commission has learned of several tragic accidents involving vented gas heaters.

2. Unvented gas heaters not manufactured for indoor use. CPSC in-depth investigations include several accidents involving heaters not intended for indoor use, or make-shift type gas-fired heaters.

3. Hibachis, charcoal grills or other patently unsafe devices, which have been brought into a home or home trailer. Commission fires also include examples of this practice.

Although there is not statistical evidence that consumers who are unable to purchase an unvented gas heater (in the event of a local ban) will frequently choose one of the more hazardous appliances named above, available information suggests that this is a reasonable conjecture. For example, the vented gas heaters

that were involved. A recent Barnwell, S.C. tragedy had been purchased as replacement for unvented gas heaters. Another case in Commission files describes a vented heater that had been purchased as a replacement in a home with several existing unvented heaters. Unwilling to pay the cost of installing a vent, the consumer used the heater in an unvented mode. Several weeks later he and his wife died of CO poisoning.

The price of vented and unvented heaters are about the same, according to the Directorate for Economics, but a vented heater is less efficient, and therefore more costly to operate. The owner of the heater involved in a recent accident in Prichard, Alabama, in which 8 persons died, explained that the vented heater involved had in the past been operated in a vented mode several times but that it "didn't give off any heat."

EC has reported that unvented heaters are usually purchased as replacements, not in new construction, and primarily among low and moderate income groups. A consumer who is unable to purchase an unvented heater may very likely purchase a vented heater instead, but fail to vent it. Even if a vent is installed it is likely not to be installed correctly.

If only a few persons who would otherwise have purchased an ODS-equipped unvented heater purchase instead, for whatever reason, a vented heater or one of the other devices named above, even though the remaining majority choose a zero-risk alternative, the aggregate risk among those households will be higher than the expected risk among households using ODS-equipped unvented heaters.

Prepared by: Liz Gomilla

Date: 4/7/83

Compliance Activities Between January 1982 and March 1983

1. Preparation of field compliance program by CA:	.5 SM
2. Monitoring of field compliance program by CA:	1.0 SM
3. Inspection of 12 firms by RO:	3.0 SM
4. Collection of 12 samples by RO:	1.0 SM
5. Testing of 12 samples by ENG:	3.0 SM
6. Compliance follow-up by RO:	<u>1.0 SM</u>
TOTAL	9.5 SM

Approximately 55% of the known industry was covered by these activities.

CA Position on Revocation and the Petitions

CA is against revocation of the standard because the industry is still growing and changing. For example, only 5 to 6 firms were involved in the manufacture or importation of unvented gas-fired space heaters when the standard was issued in 1980. Now there are approximately 20 firms, with more expected to enter the market due to the anticipated sale of portable unvented gas-fired space heaters or cabinet heaters. With this type of heater, the gas source is stored inside the heater cabinet making the heater easy to move from room to room. In addition, one of the two present sources for the ODS device is reportedly discontinuing production of the device in September of this year and two European sources are reportedly planning to enter the U.S. market. A change in the type, availability and/or source of the ODS may affect the ability of the heater manufacturer to obtain and incorporate an acceptable device into its heaters.

CA recommends denying the petitions. This recommendation is based primarily upon the epidemiology position that if unvented gas-fired space heaters are not available due to local or state regulation, consumers may create an unsafe environment by using a gas heater that is intended to be vented, without taking the necessary steps to vent the heater.

UNITED STATES GOVERNMENT
MEMORANDUM

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

APR 1 1994

TO : Elizabeth Leland, Project Manager
Carbon Monoxide Detection

THROUGH: Dr. Robert D. Verhalen, Associate Executive Director
Directorate for Epidemiology *RV*

FROM : Kimberly Long, EPHA, 504-0470 *KL*

SUBJECT: Non-Fire Incident Related Carbon Monoxide (CO) Death Estimates for 1990

In 1990, there were an estimated 245 non-fire incident related CO deaths. The following shows their distribution by various appliances and fuel types:

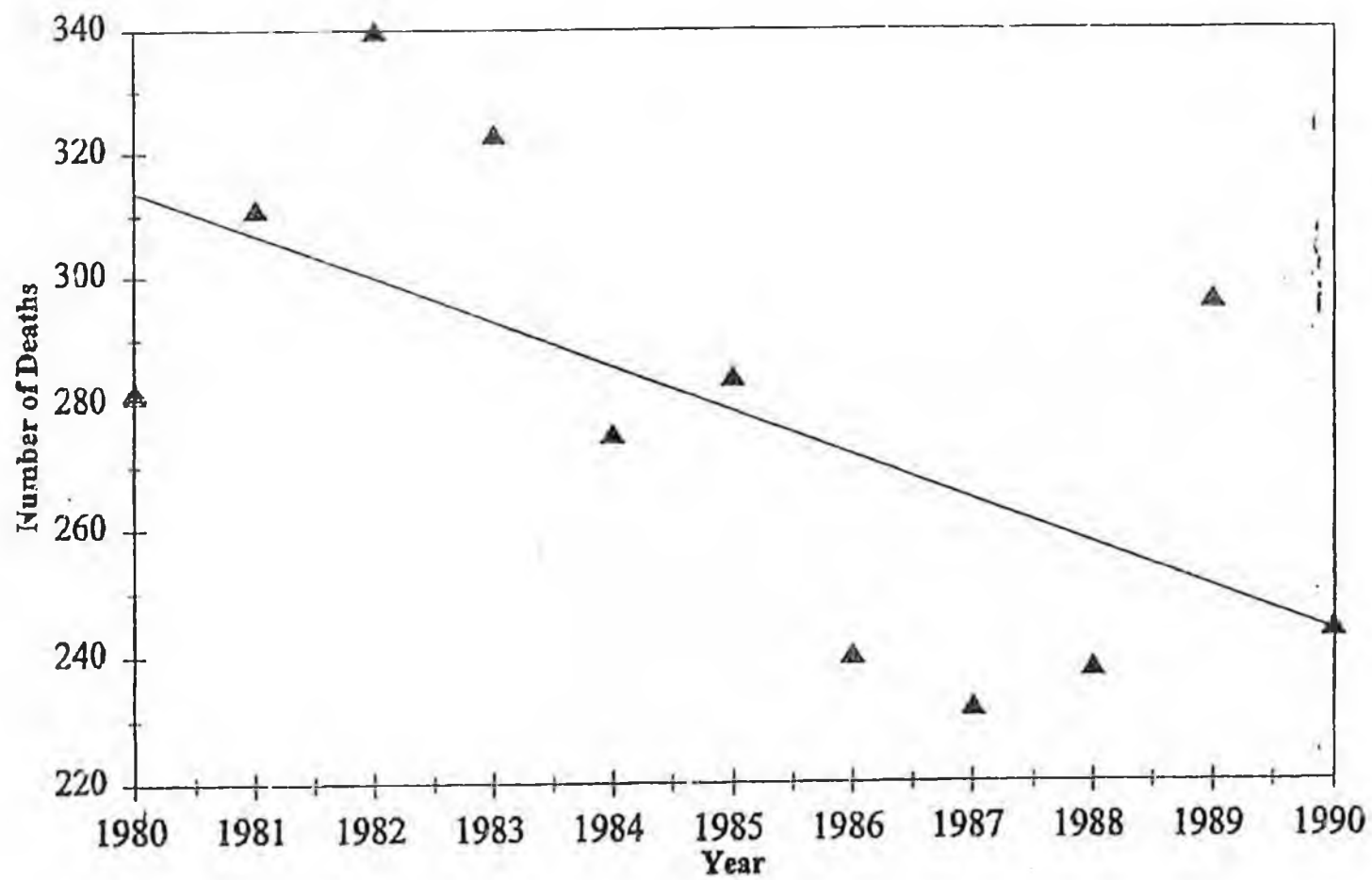
183	(74.7%)	Gas Fueled Appliances (including space heaters and furnaces);
38	(15.5%)	Solid Fueled Appliances (including charcoal and wood grills);
24	(9.8%)	Liquid Fueled Appliances (including oil and kerosene heaters).

The estimated number of non-fire incident related CO deaths decreased from 296 in 1989 to 245 in 1990 with the largest drop relating to space heaters. However, the 1989 estimate may not have been a change in the downward trend in deaths related to these products, since the estimate for 1990 is similar to the estimates for 1986 to 1988. See Figure 1 which shows the trend over an 11 year period from 1980 to 1990.

Attached are tables providing estimates of non-fire incident related carbon monoxide (CO) deaths. These estimates were derived by applying the proportion of deaths related to specific products (automobiles excluded) identified in the CPSC death certificate file to the total number of deaths identified by external cause of death (E-code) as due to carbon monoxide, from the National Center for Health Statistics. Table 1 shows 1990 estimates in number and percent distribution by types of appliances and fuel type, while Table 2 compares the number of CO deaths over an 11 year period.

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Figure 1
Non-Fire Related CO Deaths, 1980-1990



Source: National Center for Health Statistics, Mortality Data; U.S. Consumer Product Safety Commission.

Table 1
National Estimates of Non-Fire Related
Carbon Monoxide Deaths Associated
with the Use of Residential Appliances, 1990

Carbon Monoxide Deaths for 1990			
Fuel Type	Appliance	Number	Percent
Total		245	100.0%
Gas	Total	183	74.7%*
	Space Heaters	86	35.1%
	Furnaces	55	22.5%
	Range/Stove	25	10.2%
	Water Heater	7	2.9%
	Refrigerator	6	2.5%
	Lantern	4	1.6%
Solid	Total	38	15.5%*
	Charcoal/Wood Grill	20	8.2%
	Wood/Coal Stove	9	3.7%
	Chimney/Fireplace	6	2.5%
	Coal Furnace	3	1.2%
Liquid	Total	24	9.8%*
	Gasoline Generator	11	4.5%
	Kerosene Heater	7	2.9%
	Oil Heater/Stove	6	2.5%

Source: National Center for Health Statistics, 1989 Mortality Data; U.S. Consumer Product Safety Commission.

Note: The distinction between space heaters and furnaces is not always exact in the information available on death certificates. Some of the deaths attributed to space heaters may actually have involved central heating appliances (furnaces).

Detail may not add due to rounding.

Table 2
National Estimates of Non-Fire Related Carbon Monoxide Deaths
for Various Residential Appliances 1980-1990

Fuel Type by Appliance	Year										
	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980
	Number of Deaths										
Total	245	296	238	232	240	284	275	323	340	311	282
Gas Fueled Appliances	183	220	190	181	198	226	204	249	280	266	247
Space Heater	86	130	84	89	103	115	104	135	178	122	150
Furnace	55	56	83	54	57	57	47	55	71	68	78
Range/Stove	25	22	5	23	23	31	28	24	4	25	11
Water Heater	7	6	13	3	7	20	13	21	12	20	5
Refrigerator	6	2	-	-	3	3	-	3	11	24	3
Lantern	4	4	5	12	2	3	12	11	3	7	-
Solid Fueled Appliances	38	32	34	31	23	52	62	53	23	33	28
Charcoal Grill	20	30	29	20	21	49	38	39	14	18	18
Coal Furnace	3	-	-	3	-	-	12	2	4	15	8
Wood/Coal Stove	9	2	5	8	2	3	12	12	5	-	2
Chimney/Fireplace	6	-	-	-	-	-	-	-	-	-	-
Liquid Fueled Appliances	24	44	14	20	19	6	9	21	37	12	7
Oil Heating	6	9	3	12	14	-	6	9	33	8	7
Kerosene Heater	7	20	11	5	5	6	3	12	4	2	-
Gasoline Product	11	15	-	3	-	-	-	-	-	2	-

Source: National Center for Health Statistics, Mortality Data; U.S. Consumer Product Safety Commission.

04.19.94

03:48 PM

*CPSC/HQ

#1

POS

04. 19. 94

03:48 PM

*CPSC/HQ #1

P06

bcc:

Frye *RF*

Long

Nicholls *W*

Verhalen

U.S. CONSUMER PRODUCT SAFETY COMMISSION
4330 East West Highway
Bethesda, MD 20814
tel 301-504-0666
fax 301-504-0025
fax 301-504-0124

FAX t r a n s m i t t a l

to: MEL KROSSING

fax #: 907-465-4565

from: Dan Switzer

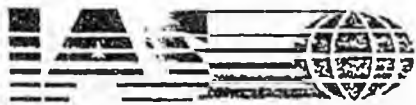
date: 4/19/94

re: CO POISONING

pages: 6, including this cover sheet

COMMENTS:

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INTERNATIONAL APPROVAL SERVICES

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April 18, 1994

Senator Randy Phillips
State Capitol
Juneau, Alaska 99801-1182

Subject: Safety of Unvented Gas Appliances

Dear Mr. Phillips:

This letter is in response to a recent telephone request for information concerning safety aspects of unvented gas appliances.

Various unvented gas-fired appliances are design certified by A.G.A. Laboratories for compliance with the applicable American National Standard ANSI Z21.11.2 for Unvented Gas-Fired Room Heaters. This standard contains construction and testing requirements intended to demonstrate safe operation under established test conditions. Enclosed is a copy of the standard for your review.

Carbon monoxide production is covered under the combustion test outlined in Section 2.4 of the standard. The appliance shall not produce a concentration of carbon monoxide in excess of 0.02 percent in an air-free sample of the flue gases when the appliance is tested in an open room. Additional combustion testing is conducted in a closed room environment in conjunction with the oxygen depletion test.

The oxygen depletion test outlined in Section 2.9 of the standard requires that the system acts to shut off the gas to the appliance main and pilot burners when the oxygen level in the closed room environment is reduced to 18.0 percent.

Other standard safety-related testing is conducted to establish fire hazard clearances (wall, floor and ceiling temperatures), surface temperatures, temperature at discharge openings (as applicable), ignition system temperatures, ignition system operation, and clothing ignition potential.

Senator Randy Phillips
State Capitol
Juneau, Alaska 99801-1182

Also enclosed with this letter is a copy a white paper published by the Gas Appliance Manufacturers Association (GAMA). I have been informed that there has been much activity in this area over the past year or so and an updated version of the enclosed paper has been published. GAMA is very interested in promoting the safety of these appliances. Please feel free to contact Mr. Gary Thibodeau at GAMA (703-525-9565) and he will be pleased to provide you with further information. (Gary will not be back in the office until April 25th).

A.G.A. Laboratories as a testing and inspection body certifies the designs of appliances and appliance accessories for compliance with the requirements of an applicable national safety test standard such as those published by the American National Standard Institute (ANSI) and Underwriters Laboratories (UL).

The Laboratories' Certification Seal on an appliance or the Laboratories' Certification Symbol on an accessory or component is the manufacturer's representation that the product is constructed in agreement with A.G.A. Laboratories' records of the certified design when released from the production facility.

Completion of all conditions of the certification program results in listing of the product in the Laboratories' Directory of Certified Appliances and Accessories. This is a semi-yearly publication published in January and July. Monthly supplements to the major issues are also printed.

The Laboratories has been accepted as a nationally recognized testing laboratory by professional organizations, safety agencies and regulatory authorities. Please refer to the attachment provided with this letter.

The procedure for certification requires the manufacturer to submit product to the Laboratories for test against applicable safety test standards. Satisfactory test results authorize the manufacturer to display the Laboratories' Certification Seal on appliances or the Laboratories' Certification Symbol on accessories. Each provision of the test standard is covered for compliance, as applicable.

In order to maintain certification and Directory listings, manufacturers are subjected to quarterly inspections of an unannounced nature. Our inspection procedure consists of dimensional checks of the equipment, performance of safety related tests on complete appliances and accessories, and a evaluation of the manufacturer's quality control procedures and documentation.