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Shortages build to 'crisis'

State, federal action in offing

Are you to blame?

An American energy shortage, ignored or even laughed-off by many as impossible in the land of plenty, the land of the original conspicuous consumer despite repeated warnings to the contrary, is here around us right now.

And it means, among other things, that a few changes — some drastic — will have to be made. Are you ready? You ought to be. The implications of what has been officially labeled by the President as the "energy crisis" are about to rip deeply into the fabric of American life. No one is kidding.

A good clue is the wild flux in stock prices on Wall Street where the West's economic temperature is taken. Something, it must be concluded, is coursing through investors' veins to create the sharp relief on stock price graphs. As if Watergate weren't enough. Energy, in whatever form, makes up about eight cogs in a ten cog wheel that makes us go around.

And it manifests elsewhere, flowing downward from the economy, assuming for the moment that we can separate any life-style feature from the economy. Little things like Christmas lighting, evening athletic events and business hours are now being cut by crisis-conscious officials and businessmen. Those over the river and through the wood trips to grandmother's house this winter may not be made. And if they are, a similar trip for an Easter egg hunt next spring won't. Government, which many energy company officials blame for most if not all of the crisis, may not let you.

And speaking of government. Its presence, its role in this "crisis" is all-important. It will doubtless play the lead part. It can, by way of executive and/or legislative fiat, come to further rule the marketplace as well as day-to-day personal life — assuming again that life can be separated from the marketplace. At the moment, the State of Iowa has asked its citizens to call toll-free to report any and all conspicuous or "irresponsible" uses of energy. That may be just a start. The implications are positively Orwellian.

But getting back to blame. Social critics for years have hounded business and industry for urging what the critics have called "irrational profit-consciousness," or just plain greed. Business is to blame, they say, because of its "consumption for consumption's sake" exhortations. No one, they argue, ever needed those products to begin with and now we are haunted by the spectre of shortage.

Business, particularly now the energy-producing and marketing concerns, are blaming government's long-time "excessive controls on the marketplace," and urging a return to more of a free market system. Supply and demand should be the arbiter, they argue, so there will again be some incentive to drive expensive drilling and fuel exploration apparatus back into the fields.

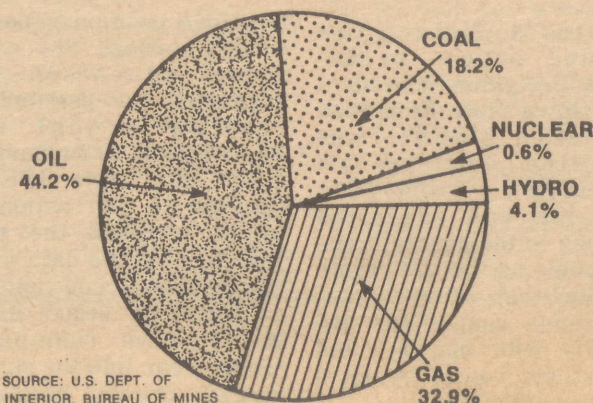
And maybe it's all contrived, as other critics have argued. Maybe it's really a function of the whole system of profit and loss and reports to the stockholders.

Who is to say? Who is to be believed?

The thing that is to be believed is the shortage. And all of us can do something to lessen its impact. We can all do something to decrease the estimated 73,000 trillion btu's of energy America consumed last year; consumption so prodigious that the Great Britain, West Germany, Japan and the Soviet Union combined could not match.

This time your vote counts, and this section, which, by the way is produced on recycled newsprint, is full of suggestions and recommendations on how you can vote. There may be some answers here, too.

SOURCES OF U.S. ENERGY



SOURCE: U.S. DEPT. OF
INTERIOR, BUREAU OF MINES

Abundant Coal Reserves May Augment Gas Supply

Ten years ago, coal appeared to have been relegated to the dark ages in the energy picture—a victim of technology and ecology, a symbol of the past replaced by cleaner and more economical fuels.

The days when coal was considered "king" were over. Almost forgotten were the early 1940's when most of the gas being used in the United States was produced from coal.

Coal's downfall began with the advent of long distance pipelines following World War II and the shift to use of natural gas, which was of better quality and more economical than manufactured gas.

Today, natural gas accounts for virtually all the gas used in the U.S. It provides one-third of the nation's total energy requirements and still cannot meet unprecedented demands by industrial, commercial and residential customers.

In anticipation of this shortage, researchers for several years have been investigating possible alternate means of obtaining a high-Btu gas interchangeable with natural gas.

VAST COAL RESERVES

Since approximately three-fourths of the nation's known total fossil fuel reserves are coal, research centers on developing practical methods for its conversion into gas. New technology was neces-

sary because commercial processes used in the past to convert coal to gas don't meet today's requirements from the standpoint of capacity, economics and environmental acceptability.

The natural gas industry and the government are investigating the implementation of several processes which will allow the utilization of these vast coal reserves.

With the signing of a four-year agreement in 1971 the American Gas Association, as the representative of member companies which serve more than 90 percent of the nation's utility gas customers, and the Department of Interior's Office of Coal Research began a \$120 million coal gasification pilot plant program.

PILOT PLANTS

The pilot plants, now operating in Chicago and Rapid City, S. D., and under construction in Homer City, Pa., will test various processes of gasification, purification, and coal handling with the aim of developing one optimum system for gasifying coal.

Following the pilot plant stage, a single process chosen from all the processes investigated (or a combination of them) will be ready for either a demonstration plant phase or direct commercial application.

See inside for
suggestions and
some official comments

Governor asks individual action....

A few suggestions from Governor Ray to help head-off the shortages:

Turn thermostats down by at least five degrees at night and during the day when most of us are at work.

Insulate windows with storms and even clear plastic sheeting. Caulking the outside window and door joints would help as well.

Insulate outside walls and ceilings.

Clean furnace filters.

Close heating vents in rooms not in use.

Close fireplace dampers when not in use; and maybe use them for a change.

Weather strip outside doors, and

Keep the area around heating vents clear; don't obstruct the flow of warm air.

Keep the air moist; a humid room is easily warmed.

Keep the window draperies

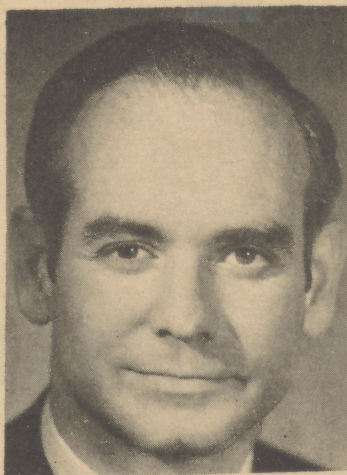
closed at night; conversely, nothing is more warming than daytime sunshine or even light.

The Governor has a few other suggestions, and indeed, has implemented some practices to help conserve gasoline and other petroleum products used in transportation.

He has asked that Iowans not drive at speeds in excess of fifty miles per hour, and ordered that state owned cars not exceed fifty.

Some Iowa law enforcement agencies have as well taken to stopping motorists driving in excess of fifty to remind them of the governor's wishes. And some states, notably Vermont and California have taken legal steps to reduce speed limits. Ray says he has been thinking of asking the legislature for that in Iowa.

He suggests that cars be kept in tune with regular maintenance check-ups; a



well-tuned car uses fuel most efficiently.

Ray has also set up a toll-free telephone line at the Statehouse over which Iowans may call to inform officials of fuel wasting and poor conservation practices. The practice has been assailed as a "Gestapo tactic" by some, but state officials report that the phone is in constant use.

And he suggests use of car pools for getting to and from work, or any place else when the destination is common among several people.

Meanwhile, the governor it seems has taken some personal steps to curb his own consumption and that of those around him.

Thermostats at the Statehouse and the governor's mansion have been turned down to a chilly 65 degrees, and lights, when not in use are being extinguished. Use of floodlights to illuminate the gold-leaf capitol dome has been curbed as has similar floodlight use at the grand Old Capitol, a national historical landmark, in Iowa City.

And the governor is no longer being driven around so much in his Lincoln, a notorious gas-eater. Ray has taken to using an American Motors Hornet, a compact, less luxurious car, and he claims it's getting about 19 miles per gallon as compared to a mere 12 miles per gallon for the Lincoln.

He stopped short of suggesting that big car owners trade for the economy class.

Said Ray of his suggested conservation measures: "It doesn't cost anything to turn off a light or plan ahead to run three errands instead of one on a single car trip. It doesn't handicap the quality of living, and while the total amount is not a great savings of energy, percentage-wise, it has a marked effect."

He's not kidding.

Some school solutions

The West Des Moines School District, by far the city's largest single consumer of fuel, has developed some conservation guidelines for application during, and perhaps after, the current energy shortage, Supt. Dr. Charles C. Joss has announced.

As developed by the district's "administrative team" — a group consisting of building principals and district executives — the guidelines are suggested for use by the district's employees and students. Joss said the group used some of the suggestions offered in a letter by the West Des Moines Education Association (WDMEA).

Many of the guidelines follow suggestions made by state and national officials.

The guidelines include:

"Reduction of temperature settings to below customary levels as much as possible.

"Turn off all unnecessary lighting, inside and out. Reduction of lighting in large areas.

"Reduction of field trips to only those scheduled at this time until further notice.

"All vehicle drivers should observe maximum speed limit of 50 miles per hour.

"Encourage all students and employees to walk to school where possible. Encourage students and employees to form car pools. Encourage those students that live beyond walking distance to utilize buses.

"Check for proper fitting of outside doors and windows, and avoid any unnecessary opening of doors and windows.

"The conservation of energy is a problem confronting the total society. Students and employees are encouraged to make suggestions for the conservation of energy. Principals are responsible for working with the staff in their buildings to effect such additional energy conservation measures as the principal and staff can implement at the building level.

"Program reduction is a serious matter affecting large numbers of students. Until further directives are received from governmental units, immediate program curtailments are not planned.

Joss said the guidelines are flexible enough for all students and employees to operate within

them, and that the "purpose of the guidelines can be best accomplished through staff co-operation and co-operation by students and the community."

Because of the guidelines' flexibility, Joss said building principals will be able to find the "best course for their buildings, given the building's own peculiar features and the different age groups involved."

He said the WDMEA suggestions were "widely discussed" during staff deliberations.

He emphasized that the guidelines are not final and absolute, and that suggestions, from employees and students will be actively solicited."

Other conservation suggestions, such as curtailing or cancelling evening athletic events and closing schools for a week during January, the year's coldest month, were discussed, but, Joss said, that decision would have to be made by state or perhaps national officials. If that happens, he said, business and industry should also be ordered to follow similar restrictions.

In a separate action, the district directed building administrators to review building peculiarities to determine whether "natural light" could be used in hallways, security and gymnasium lighting could be reduced and student entry-exit doorways could be limited in number.

The directive also asked that building heating plants be investigated for possible mechanical breakdowns, and that extra-curricular activities be reviewed for possible rescheduling during noon hours.

According to district business manager Norman Pogemiller, the district, barring further shortages, has been guaranteed the same amount of gasoline and fuel oil it consumed last year, but that those arrangements are made on a month-to-month basis and are subject to change.

Pogemiller said the district has used none of the fuel oil purchased for the six school buildings on interruptible natural gas contracts, but that when the temperature dips low enough, gas supplies to those buildings will be cut off and fuel oil will be used. Valley High is among the buildings on interruptible contract.

ISEA alternatives

Editor's Note: The following article, by Dr. Robert Creighton, President of the Iowa State Education Association (ISEA), was submitted outlining his association's immediate reactions and suggested solutions to the energy crisis and problems it could create for education. Many of Dr. Creighton's suggestions are at odds with opinions and suggestions voiced by local and national officials.

Because of the seriousness and far reaching impact of the energy shortage we have asked Gov. Robert Ray to designate an "Energy Crisis Awareness Day" and to request that all Iowa schools, colleges and universities devote an entire day so designated to this issue.

We have suggested to the Governor that the school "energy crisis awareness day" should be held sometime between now and December 11, 1973. On energy crisis awareness day we feel that all class activities at all grade levels should be devoted to the energy crisis.

If the Governor takes this action we feel the school response would help students and their parents better understand the seriousness of this problem. This could result in the kind of energy conservation needed to get us through the winter.

In the long run, we believe the solution to the energy shortage will require a change in life style to reduce the amount of individual energy consumption. Hopefully an energy crisis awareness day could be the first step needed to bring about this needed change in life style.

Governor Ray has already called for an educational campaign to inform people about the energy crisis. We support him and hope he will agree with us that an energy crisis awareness day is the best way of accomplishing this goal.

I would also like to take this opportunity to outline

the ISEA position on possible school closings this winter. Some educators have suggested the possibility of closing school from December 14 to January 14.

At this time ISEA is opposed to any action that would lengthen the school year beyond the date written into teaching contracts and approved by school boards. We believe running the school year into the summer would create havoc for students, school employees, parents of students and many youth related organizations whose activities coincide with the closing of school.

Also, because many Iowa schools lack air conditioning we believe little education would take place if June temperatures turned out to be as hot as they sometimes are.

Some have suggested that it might be good to extend the school year in an effort to cut down on the number of families who normally take early summer vacations. We reject this view.

We feel that education is the most important activity taking place in our communities and do not feel that students should be victimized by the anticipated energy crisis.

If it becomes obvious that it will be necessary for schools to cut down on their energy use, we believe that extending the school day and operating on a four-day week would be a better solution than closing school for a month during winter.

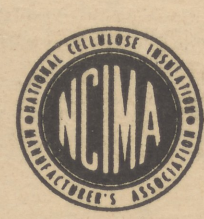
The school day could be extended. For example, classes could run from 8:10 A.M. to 4:15 P.M. This extension of 80 minutes could provide students with roughly the same amount of in-school education they now receive during a normal five-day week.

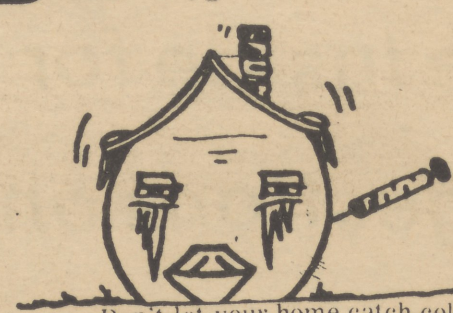
We believe the four-day schedule, plus other energy saving measures could cut school energy consumption by more than 20% a week. This amount of cutback should be sufficient if other segments of our communities follow this example.



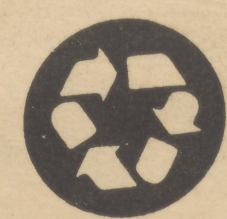
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So does President

While he stopped short of ordering rationing of gas and oil, President Nixon last week acknowledged an energy shortage of perhaps crisis proportions, and ordered federal agencies — among the largest users of energy in the nation — to cut back on energy consumption. He said his suggestions also applied to all Americans.

He urged, as has Governor Ray, that motorists not travel in

excess of 50 miles per hour, and ordered federal agencies to do so.

Recommended that Congress legislate a national return to Daylight Savings Time, and Congress is doing so.

Asked that "non-essential" energy users such as taverns cut back on consumption.

Suggested that working hours for non-essential businesses and factories be limited.

Asked easing of federal and state clear air standards to



allow burning of less highly refined coal and oil, and use of similar coal and oil for power generating stations.

And increased production in domestic oil fields.

Mr. Nixon appealed to the nation for voluntary efforts geared toward cutting back consumption in view of a projected 20 per cent shortage of oil. The projection was made after oil-producing Arab nations, angered at American support of Israel in the recent Arab-Israeli war, cut off oil exports to the United States.

The United States imports about 20 per cent of its oil from those states.

White House energy adviser former Colorado Gov. John Love earlier had been quoted as saying that voluntary action would not be enough to head-off the predicted shortages, and that "more drastic measures" would probably need to be taken.

Love reportedly recommended rationing, and this week some administration officials and cabinet members were saying gas rationing would probably become reality by spring.

DPI suggestions

In response to the President's request for all people to share in the conservation of energy and the possibility of a severe fuel shortage this winter, the Department of Public Instruction is recommending that each school district develop a plan and adopt procedures for conserving energy. Most of the following alternatives should be implemented by each school district with a sense of urgency.

A. Recommended Temperature — School in Session

Classrooms and offices — 68 degrees F.

B. Recommended Temperature — School not in Session (Night setback — 3:00 or 3:30 p.m., weekends.

C. Ask students, teachers, and others to wear warm clothing while attending classes and school functions.

D. Mechanical Systems

1. Inspect all thermostats to insure they are in proper working order.

2. Clean all air intake filters periodically.

E. Building

1. Check all windows for air leakage and caulk, repair, weather strip, and point bricks, if necessary, to eliminate heat loss.

2. Insure all exit doors fit and close properly.

F. Turn off all lights when rooms or spaces are not occupied.

G. Reduce hot water temperature to 120 degrees F.

H. Reduce the time span normally used for practices and club functions.

I. Bus and Auto Use

1. Insist that all bus engines be mechanically sound and

operating efficiently.

2. Do not allow buses to "warm up" for an extended period of time while standing empty. (Some people say three minutes is adequate.)

3. Reduce the speed of buses on interstate highways and any four-lane primary highway to 50 miles per hour.

4. Require all students to ride the buses, when bus transportation is provided, instead of driving cars.

5. Cancel all out-of-town educational trips for students. Example — visiting the Legislature, packing plants, industries, etc.

6. Cancel all senior trips.

7. Eliminate trips, designed for the convenience of students, between school buildings.

8. Insist that all buses operate, as nearly as possible, at their capacity level, and plan routes to eliminate an excessive number of stops in the urban areas.

9. Reduce to the minimum, the use of the driver education car.

ALTERNATIVES

In case the practices of the previously suggested conservation measures are not sufficient:

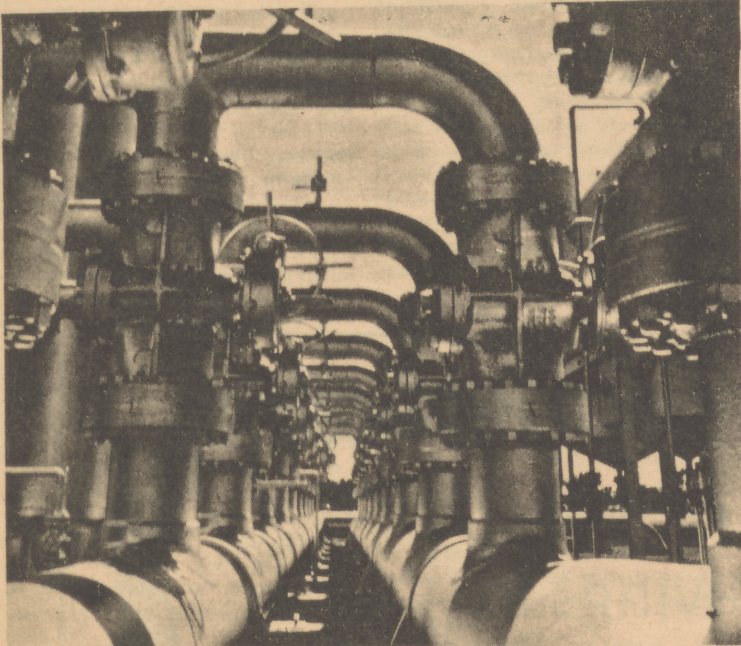
1. Lengthen the Christmas Holiday Season by two weeks.

2. Have an extended school day for four days a week — no activities, practice, etc., on the fifth.

3. Schedule kindergarten classes every other day all day to eliminate kindergarten routes.

4. Go to year-round school.

These are only a few suggestions that we ask you to consider as you plan your energy conservation program.



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Insulation seen as effective tool

Some tips on installation, inspection

The Iowa Power and Light Co. of Des Moines has been campaigning for conservation most of this year, and has itself come up with a number of suggestions its customers can follow to conserve the energy the company dispenses.

Among those suggestions is wider use of home insulation, which company officials say is an effective conservation tool in both winter and summer.

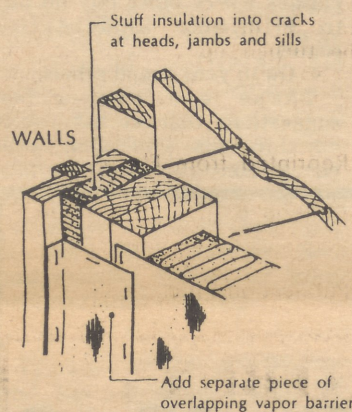
Insulation when properly installed, they say, patches up the often-hidden cracks in a building's exterior, and thus helps lower heating or cooling energy requirements. In fact, they say, power cost savings to a well-insulated home owner can pay for a contracted insulating job in from 3 to 6 years.

Linsted here are some of their tips, together with a few helpful illustrations, toward getting you into a better-insulated home.

LOOSE-FILL

WALLS

Whenever the vertical space to receive blown insulation through openings in an exterior wall is more than four feet high, the "double blow" method, with two access holes to each stud space, works best. The number of holes to be cut at both sill and top-of-window levels can be



Regardless of the type of insulation being installed in wall stud spaces, all head, jamb, sill and miscellaneous cracks should be stuffed with insulation.

minimized by cutting them right on the stud so that they open into the wall spaces on either side.

Where siding overlays sheathing, strips of siding should be removed at both blowing levels and access holes cut, approximately 16 inches apart, through the sheathing. Before blowing any material, check every space for obstructions below the holes with a plumb bob. To check for obstructions above the holes, feel up into them with a flexible steel ruler or piece of wire.

Before blowing insulation into the upper row of holes, look for signs of insulation blown from below. Where there are no signs, obstructions can be located with a plumb bob. In general, guarantee a good insulation job by inspecting every doubtful place — don't guess.

Homes with brick or aluminum siding are blown insulated best through entry ways cut in the top plate. Remove roofing from a small area at each end of the roof and drill a plumb hole big enough to fit the equipment being used. Then strike a chalk line between the two holes and mark it off at 16-inch intervals.

To blow, insert approximately six or seven feet of hose and let fill until material stops flowing; raise hose about two feet and blow until material again stops flowing. Pull hose up to plate and finish filling.

To blow under windows in slab construction, remove baseboard and drill blow holes through the interior wall, or drill holes through the subsill of the window and its header. For best

results, take care to drill the holes at right angles to the slope of the subsill.

Wherever poured insulation is used, the pouring height should never exceed 20 feet. Rodding and tamping are not necessary unless specified by the manufacturer. To prevent leakage, all block joints must be well mortared and weep holes lined with glass fiber rope or a similar material.

CEILINGS

Lean-to or shed roof type ceilings can be blown in two ways. Either cut access holes through the eaves or remove pieces of roofing and cut them through the roof sheathing.

ATTICS AND ROOFS

In attics with open eaves, block eaves off. Provide ventilation by tacking weatherproofed paper or insulation board from the plate to a line approximately four or five feet up the rafters. Install one of these vents near each end

and one in the middle on each side of the attic to permit air movement sufficient to carry excess humidity out the gable vents.

When floored attics are being blown, remove one or two boards down the center of the floor to inspect each space to be blown for obstructions. To blow, push the hose out to the plate, then pull it back a foot or so. A bubbling sound indicates the hose can be pulled forward another foot or two.

When insulation is being blown into flat roofs for which little, if any, ventilation can be provided, a vapor barrier is necessary. A vapor barrier is also desirable in buildings with generally high humidities (60 per cent or more).

EXTERIOR SHEATHING

Fiberboard sheathing is applied directly over framing members, with all end joints centered over the members. The linear expansion and contraction

of fiberboard is practically nil, but take no chances. Space sheathing units one-eighth inch apart at all joints over framing, and bring sheathing to moderately tight contact with window and door frames.

Head and jamb details should be adjusted to compensate for sheathing thickness when ordinary window and door frames are used.

Where the exterior surface is to be secured to the framing with nails driven through the sheathing into the studs, follow sheathing manufacturer's nail spacing directions carefully. With sheathing that can be either nailed or stapled, cut installation time by stapling.

Installed with tight joints, most brands of polystyrene and urethane foam board sheathing act as their own vapor barriers. When polystyrene foam board sheathing is being installed, with additional insulation in the stud space, a vapor barrier should be

put upon the inside surface of the framing members. In other unusual installations, consult manufacturer's specifications to see if joint taping or the addition of a film barrier is recommended.

As a general rule, both urethane and polystyrene foam boards are highly moisture-resistant and act, under all normal conditions, as their own vapor barrier. The perm rating of urethane is especially good.

While thin urethane sheets and polystyrene sheathing panels possess some structural strength, they are generally non-structural. They do not provide an adequate back-up for non-rigid finishes. (The qualities of urethane sheets should not be confused with those of thicker urethane panels or of poured, sprayed or foamed urethane, which in adequate thickness have structural strength sufficient to support light-weight

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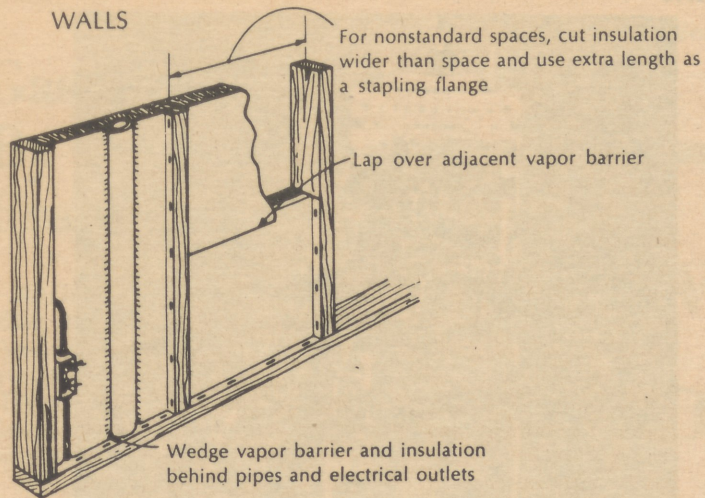


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Tuck vapor barriers and insulation behind pipes and projections in walls; cut insulation for nonstandard spaces wider than the space to be filled.

finishes.)

Either diagonal or corner bracing, as recommended by the manufacturer, should be used to stabilize foam panels used to back-up rigid exterior finishes. When studding is too rough to insure tight joints between plastic panels, building paper or roofing felt should be installed first to insure tight jointing.

CONCRETE SLAB AND PERIMETER SLAB PERIMETERS

Plastic foam boards may be installed either horizontally or vertically as perimeter insulation. When foam boards are placed horizontally around the foundation, concrete may be poured directly over them. If desired, however, an inch or two of sand may be used to cover the rigid foam. This step will protect it from mechanical damage. Also, the sand will take up excess water from the concrete and speed finishing times.

When plastic foam boards are so used in slab construction, the installation of a vapor barrier beneath them is recommended. Protect glass foam boards from poured concrete with a layer of roofing felt.

For vertical installation, simply place boards dry against the foundation and shovel backfill into place.

CRAWL SPACES

To insulate crawl spaces with glass or plastic foam board, nail plastic or bond glass to the sill plate. As an alternative, spot bond either kind of board to the foundation.

It is generally recommended that crawl spaces with no moisture barrier have one square foot of vent area for each 150 square feet of crawl space. Crawl spaces with a moisture barrier should have one square foot of vent area for each 1500 square feet of crawl space.

CAVITY WALL

Whether the job or full-back adhesive spreading methods are used in the installation of foam glass blocks in cavity walls, sufficient manual pressure should be applied to guarantee good contact between the adhesive and the masonry wall.

Allow for an air space of approximately one-fourth inch between foam glass blocks and outer masonry wall. Manufacturer's specifications with regard to weep holes in the outer masonry wall should be reviewed. Where specifications call for weep holes, they can be provided by omitting mortar from every third vertical masonry joint.

When foil-faced plastic foam paneling is installed, the foil should face the airspace between it and the outer masonry wall.

Beaded plastic boards do not call for the installation of weep holes unless there is an air space between them and the outer wall. An air space need not be provided with this kind of insulation unless recommended by the manufacturer.

REFLECTIVE

With the use of proper stapling techniques, the complaint most commonly leveled against aluminum expandable blanket

insulation — that it too often collapses — is easily avoided.

The point to remember is that blankets must be expanded to their full width to open fully the air spaces between the foil layers within them. The space in which a blanket is to be installed must be wide enough to permit taut, full-width expansion. Aluminum blanketing that looks half-collapsed may never have been fully expanded to begin with.

After one side of the blanket has been stapled to studding, expand it fully, and keep it expanded, while stapling the other side. Proper stapling should eliminate any tendency of the expanded blanket to collapse.

Seal off each end by stapling across face plates, and cut holes for outlets and switch boxes carefully to avoid stretching the blanket or loosening it around the edges.

INTERIOR PANELS AND BOARDS

Foam glass blocks and plastic foam panels form good bases for most interior wall finishes, provided that certain precautions are taken to safeguard their insulating value. Portland cement and gypsum

with caps, spacing them so there is a minimum of one nail per two square feet of paneling. Secure panels to concrete or masonry walls with ribbons of adhesive spread every three or four inches across panel backs and not further than one inch from each edge.

In installing plastic foam panels, use no adhesive or coating that could dissolve or weaken them. Before applying any doubtful compound, check the possibility of solvent action on the foam.

FOAMED IN PLACE

Foamed installations should not be started until sheetrock nailing has been checked. In many cases, the sheetrock has not been properly nailed to the studs, and foaming the stud space through a hole cut at the bottom will generate enough pressure to detach or bulge it.

Owing to spackle shrinkage, holes drilled in sheetrock are harder to fill than holes made by removing rectangular cut-outs at sheetrock seams. Cut-outs centered on studs permit access to both adjoining stud cavities. Because cut-outs can also be taped back, they cut installation time by eliminating spackle drying time.

The best insurance against the formation of voids at either the top or bottom of a foamed stud cavity is a properly inserted application hose. The hose should be hung about three feet down into the bottom half of the cavity and foamed until the foam rises to the access hole. Then the hose should be pushed at least three feet upwards into the top half of the cavity and foamed until the two halves meet and excess foam exists from the opening.

BATTS AND BLANKETS CEILINGS

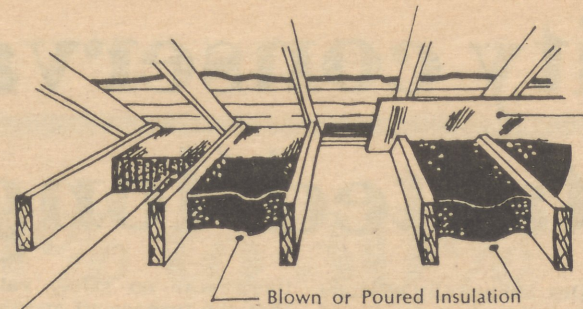
In cathedral type ceilings, batt or blanket insulation is installed between rafters using either face or in-set stapling as recommended by manufacturer. In making this kind of installation, be sure to leave a ventilation space between the top of the insulation and the underside of the roof sheathing.

With low-pitched roofs it is particularly important to lay ceiling insulation over, or as close to, the outside plate as possible without blocking the eave vents.

ATTICS

When only the living space in an attic is being insulated, do not try to run a continuous blanket across the collar beams and down the rafters to the knee wall. Instead, use separate sections of blanket for collar

ATTICS



Blocks of batting, weatherproofed paper or insulation board baffles provide ventilation for attics in which open eaves have been blocked off.

beams and knee walls to avoid buckling and gaps. For maximum insulation protection, attached vapor barriers should be lapped at all junctions between batts or pieces of blanket.

Whether insulation is applied to whole or partial attic spaces, ventilation above the collar beams and behind the knee walls is a must. Because ventilation is just as necessary in winter as in summer, building occupants should be instructed to leave vents open at all times. Always provide at least two vent openings, one at each end.

WALLS

Batt- or blanket-insulated interior walls with outlet boxes, electrical receptacles and wall projections such as faucets should have insulation placed behind these obstructions. Vapor barriers carefully cut and fitted around them will maximize vapor protection. Where the small spaces around window and door framing are accessible, stuff them with insulation wadding. Then cover these stuffed pieces with small, separate vapor barriers lapping over the main wall barrier.

When non-standard wall spaces are being insulated, cut the batt or blanket a bit wider than the space to be filled. This

procedure will insure the tightest fit.

Another way to deal with non-standard spaces is to run a series of batts or blanket sections horizontally. Cut the sections a little wider than the space, using the extra length as a stapling flange. Fit successive pieces similarly, lapping them like shingles.

FLOORS

In all applications of batts or blankets to floors, place the insulation with vapor barriers facing up except when a vapor barrier paper is being used in place of building paper over the subfloor. Only in this application can the vapor barrier face down.

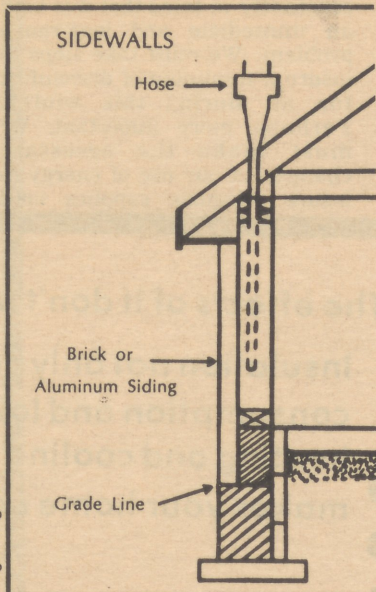
Floor insulation may be supported by chicken wire, commercial wire fasteners or wire placed around galvanized roofing nails. Where insulation is applied near or on the bottom face of the floor joists, it should be turned up vertically at the header, or a separate batt should be installed along the header.

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To install blown insulation in homes with brick or aluminum siding, cut entry ways through the roof and top plate.

plaster should never be applied directly over foam glass blocks. Always apply these finishes over metal lath that has been clipped or otherwise mechanically attached to the blocks. Total thickness of plaster or cement should not exceed one-half inch.

Over plastic foam panels such interior finishes as gypsum wallboard and plaster, ceramic tile, wood paneling and decorative hardboard can be applied directly without furring or lathing. But when gypsum plaster is to be the finish, prevent its cracking by installing the foam with an adhesive which compensates for minor building movements. (Manufacturers' specifications usually list "floating" adhesives suitable for use with their products.)

To attach plastic foam panels to wood walls, use large-headed roofing nails or galvanized nails

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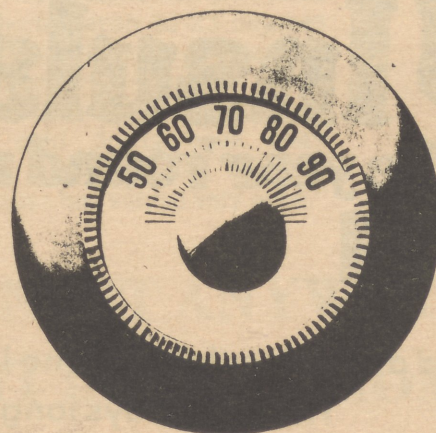
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City conservation started 'long ago'

West Des Moines city officials anticipated the short supply of fuel this winter and had already taken steps to conserve energy by the time of President Nixon's speech last week.

As early as last May, City Manager Elmer True directed city employees to cut down on the amount of gasoline used by city vehicles by eliminating unnecessary trips, reducing speed and keeping cars in good running condition.

True said at that time that "unless fuel consumption is reduced, daily demand will exceed daily refinery production."

Meanwhile, long-overdue repairs on the boiler at city hall increased the efficiency and safety of the heating unit there in preparation for winter.

An electric lighting pilot light was installed on the boiler so that the furnace will fire only when necessary. Previously,

there was no safety valve to shut the furnace off and the city hall building was being heated all times, regardless of whether or not anybody was in the building.

City Clerk Jerry Proudfit said the repairs will not only result in a "considerable decrease" in gas consumption, but also make the building safer.

He said "it's amazing the boiler didn't explode before." It was installed in 1953.

Proudfit said the night-time temperature in city hall is now 60 degrees and a little over 70 degrees during the day. The thermostat in the fire station is set at 60 degrees around the clock except during meetings.

Although many homeowners and businesses are concerned about being able to get enough fuel this winter, the supply for the city looks good, according to Frank Ferrari, public works director.

Ferrari said, "I hope the

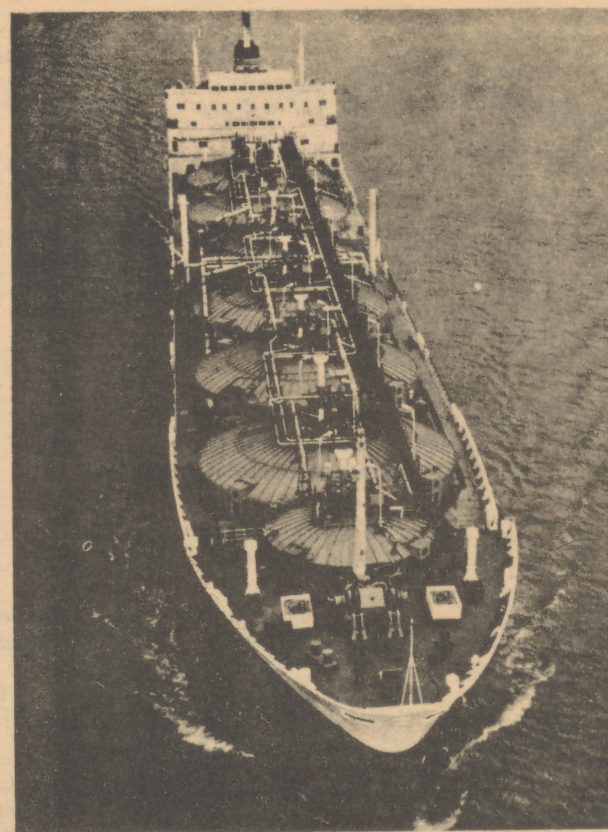
dealers keep supplying us," but he anticipates "no problems" getting fuel. He said the only problem he's had is in getting bottled gas.

The Park Board had originally planned to use bottled gas to heat skating rink warming houses, but board member Jerry Foster said it now appears another kind of fuel should be used. He said he is not sure what that will be.

Ferrari said a returning to daylight savings time, in addition to turning down thermostats will help the city save fuel. He also said he is counting on a "normal winter."

In a letter sent to city employees last Friday, Mayor Murray Drake said the city will "follow the requests of our federal and state officials in the pursuit of energy conservation."

Drake told employees to lower thermostats to 68 degrees in city buildings, drive city cars no faster than 50 m.p.h., using them only when necessary.



LNG Tankers Bring Gas

A number of specially designed tankers are already bringing natural gas in liquefied form to the United States. The gas is condensed in liquid form to only 1/600th of its gaseous state. (Photo Courtesy of Brooklyn Gas)

Dr. Benton: Educators 'brainstorming' for solutions

As a member of the Governor's Energy Priority Committee, I pledged that the educational sector of Iowa could be depended upon to do, to the maximum, its share in conserving our energy resources. I also stated that education would expect that other segments of our society should carry their fair load, as well.

On November 7, the State Board and the Department of Public Instruction hosted a meeting of representatives from all education-related organizations in the state. The purposes of such a meeting were: (1) to alert the members of the educational community to the facts and implications of the energy crisis, (2) to do some "brainstorming" in the seeking of the best possible procedures

for implementing immediate conservation measures and (3) identifying acceptable alternatives for education in the event schools must close.

Mr. Patrick Cavanaugh, Administrative Assistant of the Iowa State Commerce Commission, keynoted the meeting of these 33 representatives with information and challenging comments. He said:

"We're well past the stage of asking if the problem really exists — it does. We're well past the stage of laying blame — we're all to blame to some extent. I wish I could say that the problem is transitory; but it is not. The problem of producing and supplying sufficient energy in the conventional manner will be with us all, at least until some feasible major alternative

source of energy is developed, such as atomic, solar, geothermal, or tidal energy."

And then he gave the following facts:

- The United States has only six percent of the world's population, yet consumes 35% of available energy.

- The rate at which the rest of the world consumes energy is increasing faster than our own.

- Predictions are that in the next decade, at the present rate, the U.S. will use as much oil and gas as was used in the previous two hundred years.

As you may perhaps know, the federal government on October 18 published the "Mandatory Allocation Program for Middle Distillate Fuels." (Most heating fuels, diesel fuels, jet fuels.) The

program seeks to insure equal or equitable distribution of available products to wholesale distributors. The suppliers are then to distribute what was provided the corresponding month in 1972. However, substantial adjustments must be made immediately to compensate for the projected 29%-30% reduction from 1972 supplies.

The problem, as we can see, is threatening and can be very crippling. It is not without solution! We must keep constantly in mind that it is both an immediate and long-range problem. We must take steps to insure a minimum of discomfort for all during this winter. Perhaps more important, we must make the necessary changes in our use of energy to insure adequate supplies until

alternative sources of energy can be made available.

We in education must act now to:

1. Create an awareness in our schools and our communities of the seriousness of the energy crisis.

2. Take the leadership role in something that has been lightly talked about for too long, but not practiced — conservation of our energy resources.

Planning is urgent! Media and patrons will be asking what is being done in your schools. You, your board of education, your staff and students, should all be involved in this planning. Be assured we will do all we can, and we will attempt to keep all schools informed of fuel availability.

Sincerely yours,
Robert D. Benton, Ed. D.



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Gas Freed By Nuclear Fracturing

Nuclear power is most often thought of in conjunction with generation of electricity, but atomic power can play an important role in the development of significant reserves of natural gas.

An estimated 300-plus trillion cubic feet of gas are locked in relatively impermeable rock formations in the western United States. Conventional production techniques can withdraw only small quantities of this gas from each well, making recovery of the reserves uneconomic.

Three experiments have already been conducted in which underground nuclear explosions were detonated to fracture dense rock formations and allow gas from a wide area to reach a well. In only a few months each of the first two experimental wells produced many times the amount of gas recovered over a period of years from conventional wells in the same area.

All experimental work on nuclear fracturing is being undertaken by gas producers in cooperation with the U.S. Atomic Energy Commission, which constantly monitors the results of the existing wells and participates in plans for future similar projects.

RESULTS PROMISING

The initial results of the first two wells in New Mexico and Colorado have been so promising that a third was drilled in Colorado recently, and a fourth, larger than any of the previous projects, is under consideration for Wyoming. Investigations of gas-bearing formations in Utah are also under way to determine suitable sites for initial experiments there.

AEC studies show that radioactivity associated with gas produced from nuclear stimulated wells is extremely low, well within stringent limitations set when the projects were first planned.

Gas Reserves Down Again During 1972

Proved reserves of natural gas in the United States fell again during 1972, the American Gas Association has reported. The reserves are estimated as of December 31, 1972, at 266.1 trillion cubic feet, down by 4.6 percent from 278.8 trillion cubic feet at the end of 1971.

Proved reserves of gas for the 50 United States have fallen during four of the past five years. In 1970 total reserves went up, reflecting the first inclusion of 26 trillion cubic feet of new gas discoveries in Alaska's North Slope.

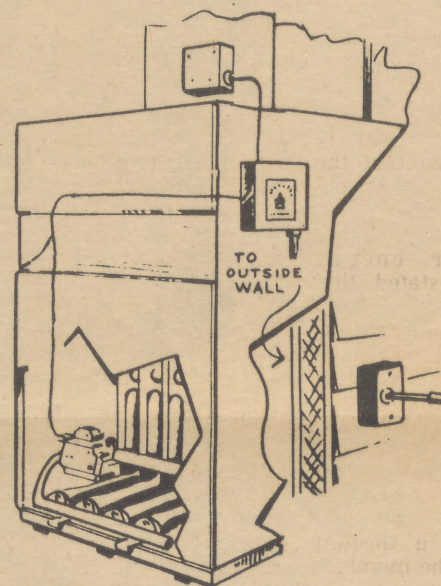
Proved reserves of gas in the lower 48 states declined in 1972 to 234.6 trillion cubic feet, the lowest level since 1955, and a decline of 5.2 percent.

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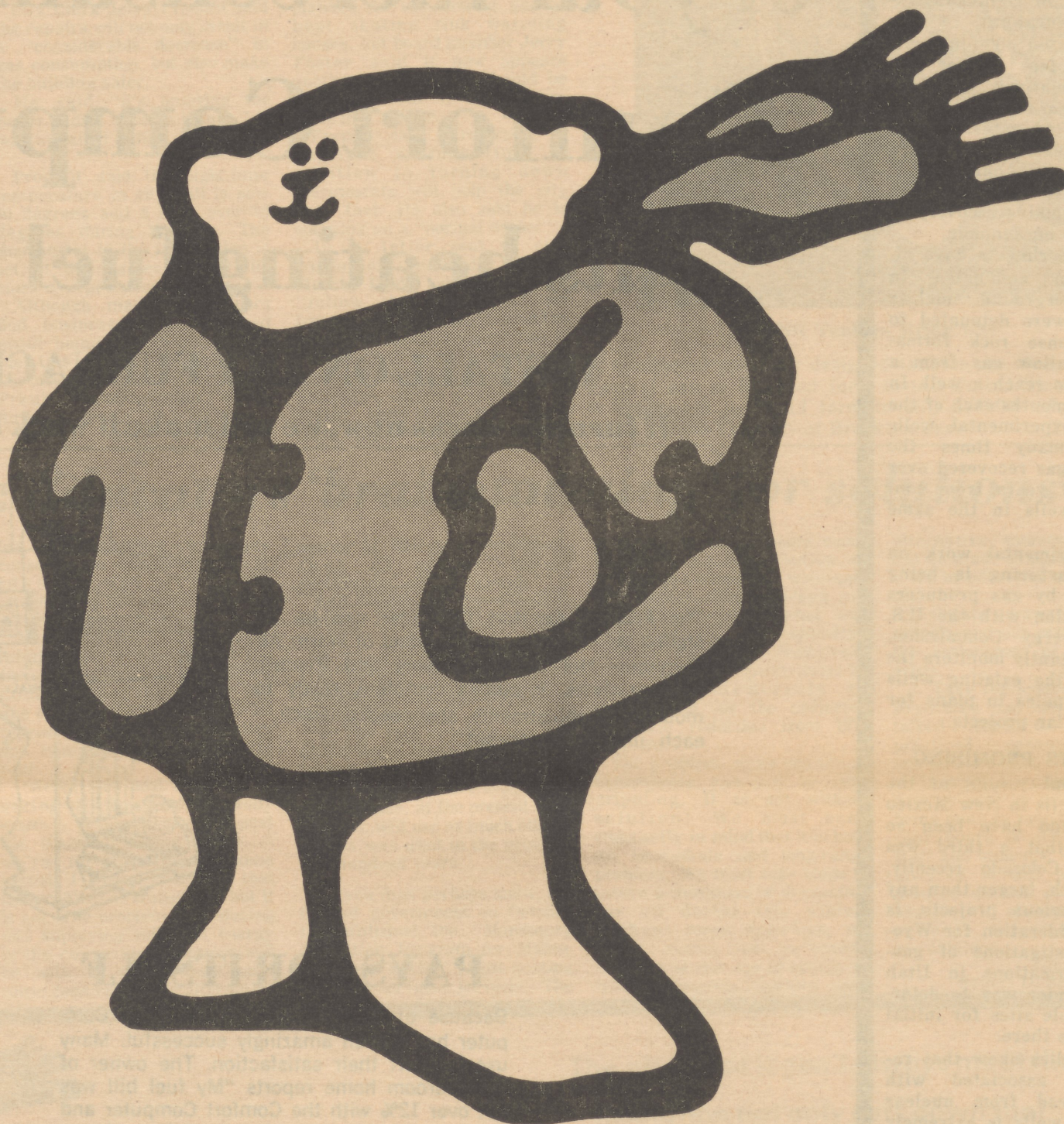
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