Copper crash...6 Arches...8

High Country news

Friday, October 29, 1982 Vol. 14, No. 21 $1.00

Stevan Maxwell

Windmills at Medicine Bow, Wyoming

Winding up in Medicine Bow

by James Udall

On September 4, 1982, two giant wind turbines were dedicated in Medicine Bow, Wyoming. The machines, a 2.5 megawatt Boeing Mod-2, and a Hamilton Standard W.T.S.-4, which at four Mw is the world's most powerful windmill, were funded as part of a Bureau of Reclamation demonstration project. Together they will produce enough electricity to power 3,000 homes.

During the ceremony invocation, in what serves as an apt metaphor for the future of wind energy, the presiding minister recalled the schoolgirl who asked why, if God were real, she couldn't see Him. Her teacher replied that many powers besides the Lord were both real and invisible, for example, the wind. "That," said the reverend, "spoke volumes."

On a graph of the nation's energy sources the wind would not be depicted; windpower's current contribution is invisible. But some experts believe that the wind will someday supply five percent to 10 percent of the country's electricity. In this sense, windpower's future is very promising—and very real.

But just how did the Bureau of Reclamation, better known for dams than windmills, get into the wind business?

In 1976, after the first oil crisis, the bureau began a search for methods to enhance power generation from its existing facilities. After finding inspiration in a Swedish experiment, two BuRec engineers—most ironically named Stan Hightower and Abner Watts–proposed a simple and elegant plan: If the bureau meshed megawatt wind machines into its existing hydropower grid, it could remedy, in one stroke, the characteristic defects of each of the two energy sources. On the one hand, the engineers reasoned, it is difficult to integrate wind into an electrical system because some provision must first be made for its intermitent nature. As for hydroelectric plants, they rarely have enough water—particularly in the West—to run continuously at full capacity.

By blending wind and water the BuRec could conserve water when the wind was blowing, and during calm spells, hydropower could firm up the more sporadic wind generated electricity.

Congress bought the concept, appropriated the funds, and now, six years later, BuRec owns two state-of-the-art wind turbines.

The turbines are enormous—over 300 feet high—and enormously sophisticated. Both turbines are monitored by computers; for example, if ice forms on the propeller a sensor triggers an alarm which automatically halts the blade. Some part of this technology was supplied by another federal agency, which might also seem misplaced in a wind project—the National Aeronautics and Space Administration.

Representing NASA at the dedication was Vernon Weyers, who three years ago was transferred from launch vehicles to wind machines. Weyers recalled that after telling his kids the news, they said, "Dad you've become the first man to go from the space age to the stone age in one day." Said Weyers, "But the basic principles of aerodynamics, systems integration, and structural analysis are the same. We've just transferred the technology."

Since the Bureau eventually hopes to let contracts for a 100 Mw wind farm in Wyoming, the competition between Boeing and Hamilton Standard has been fierce. "This is the first time we have had two different designs competing side by side," said BuRec engineer Watts.

The outcome of that contest will hinge on the chief design consideration in large (or small) windmills:

(continued on page 10)

WESTERN ROUNDUP

Trouble mounts for Hampshire

Hampshire Energy's proposed $2 billion coal gasification project near Gillette, Wyoming, was dealt a serious blow when Standard Oil Company of Ohio backed out of the project shortly before the Wyoming Industrial Siting Council began critical hearings on it. Hampshire officials are now seriously considering building the project in stages because of Sohio's pullout.

Hearings with the siting council began October 25 and are expected to run two weeks or more. After the hearings, the council will decide whether or not to grant Hampshire the main permit that must be obtained from the state before construction begins.

Of the five corporate partners in the Hampshire project, Sohio was the only one that had not asked for U.S. Synthetic Fuels Corporation subsidies. Sohio officials said they pulled out for "economic reasons."

The remaining Hampshire partners — Northwest Mutual Life Insurance Company, Kaneb Service, Inc. Koppers Company, Inc. and Metropolitan Life Insurance Company — are continuing negotiations with the Synthetic Fuels Corporation for federal loan and price guarantees. The Hampshire plant is one of two projects in the entire country eligible to receive SFC subsidies (*HCN*, 6/25/82).

The Hampshire project has been criticized by environmental groups ever since it was conceived. Most conservationists believe a synfuels project is a poor way to try to solve current energy problems. In a United Press International story, the Environmental Policy Institute called for the synfuels corporation to "terminate Hampshire's candidacy for assistance" because Sohio's pullout seriously "changes the project's equity position."

Environmental groups are not the only ones on Hampshire's back. The state's Industrial Siting Council has complained of lack of cooperation in its review of the project, and some Gillette residents are concerned about potential groundwater contamination and other impacts the project could bring to the area. According to a *Denver Post* story, some economists believe the project would require perpetual government underwriting or it would fold (*HCN*, 10/1/82).

Hampshire officials told the *Casper Star-Tribune* that it would be difficult to consider a smaller plant now that Sohio is out because the time required to study such a possibility would "jeopardize" the project's chances of receiving SFC aid.

Despite these obstacles, Hampshire officials are still confident they will be able to proceed with the project. One spokesman told the *Casper Star-Tribune* that the group would consider finding other interested partners, as well as going ahead with SFC negotiations.

— Carol Jones

High Country News

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Dear friends,

It's hard to believe, but by the time most of you read this, it will be November.

November. Time for the first big, road-closing snow dumps. Time for Christmas shopping if you do it early, the way you're supposed to. Time for turkey and all the trimmings. Past time for college football, but just a little too early to ski.

And time, as all you long-time readers will recall, for the annual High Country News Research Fund appeal.

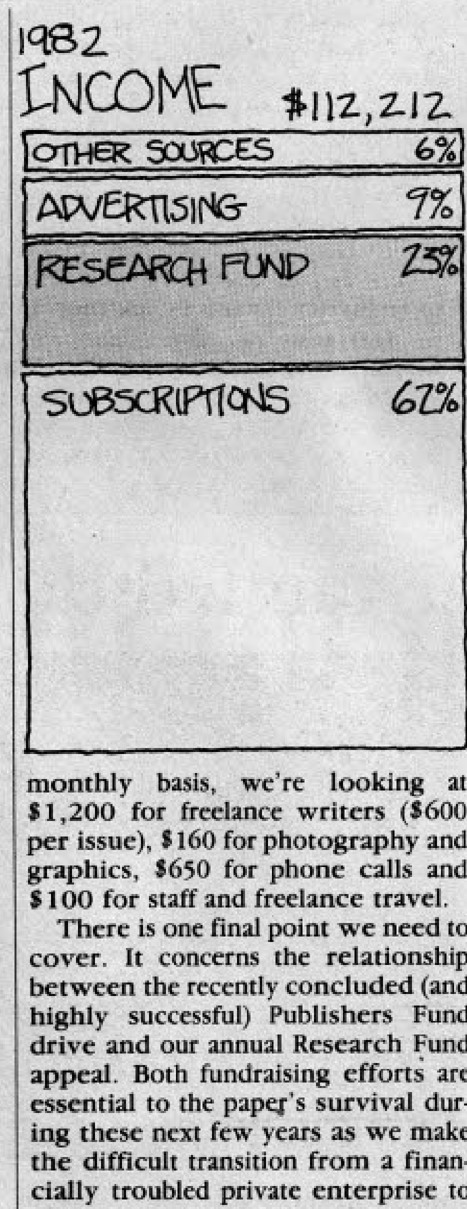
For those of you new to the paper, the High Country News Research Fund is the reader-supported account that underwrites our editorial operation. It's the fund that pays for our freelance writers and photographers, picks up mileage expenses for staff when we hit the road for a story and covers the enormous phone bills we run up in our efforts to provide complete and accurate coverage for you.

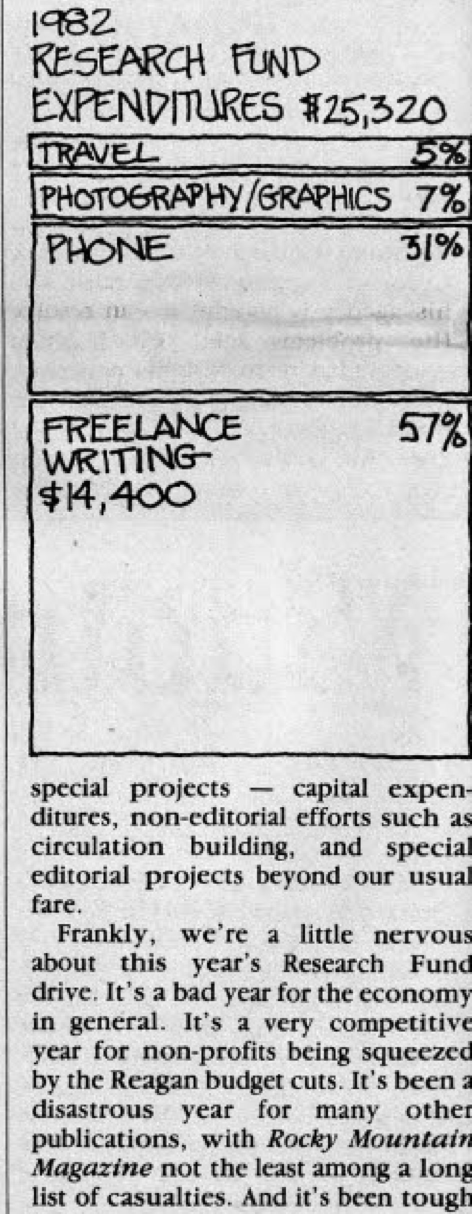
In good years, it's the fund that buys the extra effort to produce an environmental blockbuster. In bad years, it's the fund that keeps us alive. In all years, it's an essential part of our budget.

Last year's drive raised $20,000. This year, we need to raise $25,000.

The two diagrams with this article explain where that money will go and how it fits in with the rest of our finances. The "Income" diagram shows that subscriptions, our major source of revenue, cover only 62 percent of our operating costs. Advertising (which we're hoping to build up in the coming year) can be counted on to produce only nine percent of our total income, while funds from other sources can be expected to cover six percent (we hope). The balance, $25,320 or 23 percent, needs to come from the Research Fund drive.

How did we arrive at that magic number? The "Expenditures" diagram should offer some insight. Based on this past year's rates for freelancers, we've projected the relevant expenditures for next year. On a monthly basis, we're looking at $1,200 for freelance writers ($600 per issue), $160 for photography and graphics, $650 for phone calls and $100 for staff and freelance travel.





There is one final point we need to cover. It concerns the relationship between the recently concluded (and highly successful) Publishers Fund drive and our annual Research Fund appeal. Both fundraising efforts are essential to the paper's survival during these next few years as we make the difficult transition from a financially troubled private enterprise to what we hope will become a flourishing non-profit entity.

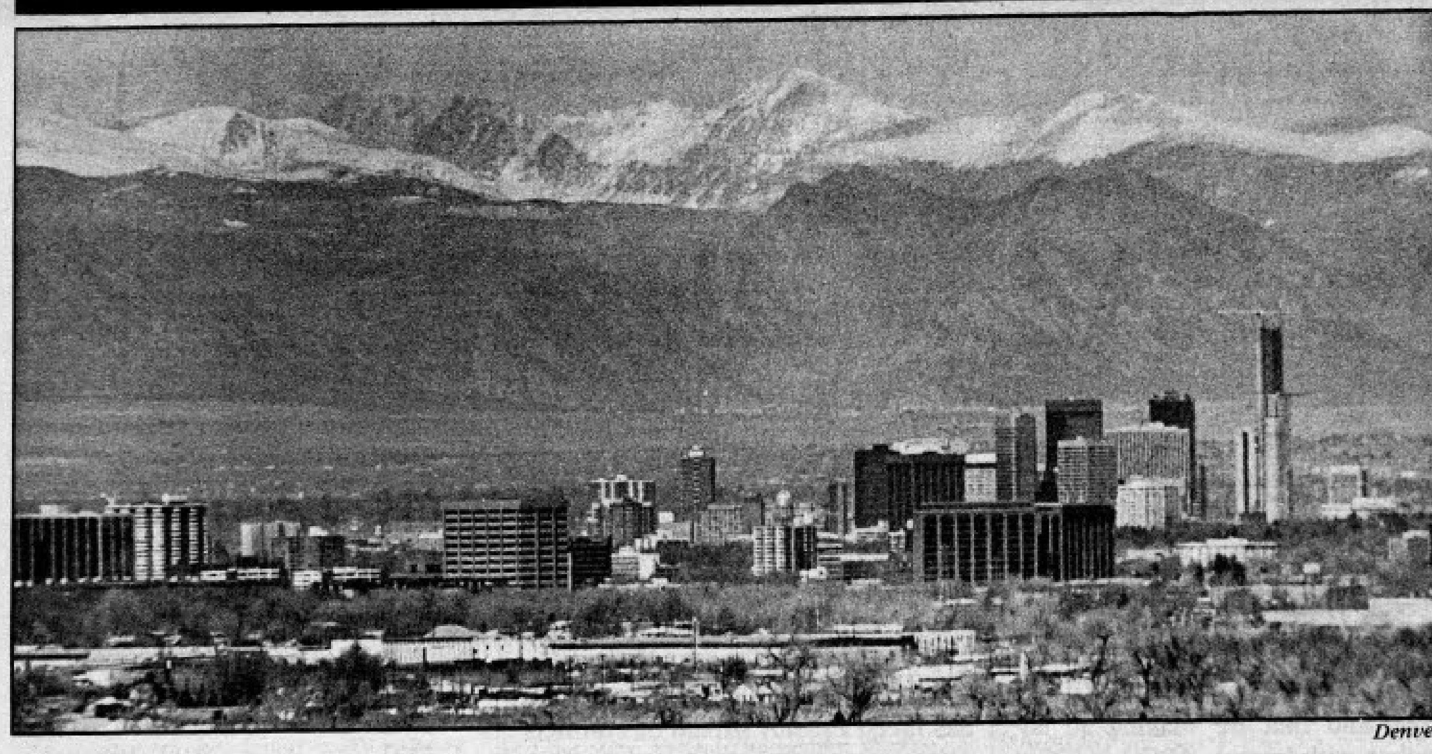
The Research Fund will continue to provide broad-based financial support for our editorial efforts. The Publishers Fund will continue to seek larger individual contributions for general support and special projects. In some years, like this past one, a portion of that additional support will be required to cover an operating deficit. In other years, like this next one, we would hope to devote most of the Publishers Fund to special projects — capital expenditures, non-editorial efforts such as circulation building, and special editorial projects beyond our usual fare.

Frankly, we're a little nervous about this year's Research Fund drive. It's a bad year for the economy in general. It's a very competitive year for non-profits being squeezed by the Reagan budget cuts. It's been a disastrous year for many other publications, with *Rocky Mountain Magazine* not the least among a long list of casualties. And it's been tough for us.

Nonetheless, we've survived, thanks to your support. As we've said in the mailing you're about to receive, *High Country News* has always been a unique partnership between readers and staff. We're looking forward to giving you another good year of solid and exciting news coverage. And once again, we're counting on your generosity to make it possible.

— the staff

LAST CHANCE Reader surveys must be postmarked no later than Friday, November 5, to be counted. Return yours TODAY to *High Country News*, Box K, Lander, Wyoming 82520.



Wm. A. Boas

Denver

Clean air plan still leaves Denver dirty

The city of Denver's proposal to clean up its air to meet federal clean air standards by 1987 was recently rejected by Steve Durham, regional Environmental Protection Agency administrator. Durham said the plan could not reduce pollutants enough to meet federal standards.

Pollution levels in Denver's infamous brown cloud must be reduced or sanctions worth millions of dollars in highway and sewer funds could be imposed on the metropolitan area, according to the *Denver Post*. The plan that Durham rejected is now being reviewed by EPA administrator Anne Gorsuch. If she agrees with him, the sanctions could become effective.

John Leary, planner for the Air Pollution Control Division of the Colorado Department of Health, said his agency is hopeful it can resolve the problems seen by Durham without having to design a new plan. The rejected plan, devised by the Air Pollution Control Division and the state Air Quality Control Commission with input from the Denver Regional Council of Governments, is expected fto reduce Denver's pollution emissions from 1,963 tons per day to 1,030 tons per day. Leary said that even though there is not enough data on the program to prove it can reduce that much, he feels certain it will.

According to the plan, another 57 tons of pollutants would be reduced by doubling the number of park-and-ride facilities, installing freeway ramp meters, traffic signal improvements, implementing a regional bicycle plan, better parking management and building the first leg of the proposed, but not yet funded, light rail system (*HCN*, 6/25/82).

The plan also calls for a warranty enforcement program that would require warranties on certain anti-pollution equipment on automobiles to reduce pollutants by another 130 to 160 tons per day, Leary said. Another 200 tons is supposed to be eliminated by voluntary carpooling or no-drive days. Durham's main reason for rejecting the plan was because of this dependency on the no-drive/ride-share days.

Both Durham and Betty McCarty, director of public affairs for DRCOG, said there is no way to be assured that the metro commuters will voluntarily cut back on driving. If there a shortage of voluntary non-drivers, a mandatory no-drive program might have to be instated in order to meet the standards. A mandatory no-drive day is not likely to go over well, McCarty said.

Durham told the *Denver Post* that for the voluntary program to work, one-third of the area's drivers would have to leave their cars at home on days of high pollution warnings. Data from a voluntary no-drive program in California indicate that only five percent of the motorists heed the program.

Leary said the state agency's plan included a mandatory no-drive program to back up the voluntary program. He said it is undecided as to what will happen if the Washington, D.C., EPA office rejects the plan.

— *Carol Jones*

Clean water tainted by new rules

Richard Murphy/Jackson Hole News

The Environmental Protection Agency has proposed a series of regulatory reforms that could weaken current clean water standards.

Under the Clean Water Act of 1972, EPA wrote criteria to guide the states in setting water quality standards. The principal criteria are stream use and the practicalilty of meeting recommended federal limits for certain pollutants. If enacted, the proposed changes will add water chemistry, physical conditions other than water quality, and the consideration that "benefits fof attaining the use do not bear a reasonable relationship to the costs" as criteria for setting standards.

The new criteria will not in themselves relax water quality standards. However, according to Ed Hopkins of the Clean Water Action Project in Washington, D.C., "The EPA is not forcing states to lower their standards, but by changing the ground rules, is giving them the means to do it."

The changes will make the regulations "more flexible on local conditions," said Pat Tobin of EPA's Office of Water Regulation Standards. Tobin said the current criteria are too broad to be applied meaningfully in individual cases. As an example, he cited a stream that is only two feet deep but is being protected as "swimmable." the swimmable designation allows little deterioration in water quality.

Hopkins said that the stream's depth should not be used to justify lowering the degree of protection it receives.

Hopkins was also concerned that foresaking national guidelines to emphasize local factors in stream quality could lead to industries "shopping around" for states with the lowest standards.

"That is a concern," Tobin said, but he added that there is already variation among the states' water standards because each state has interpreted EPA's broad guidelines differently.

Besides changing the nature of the criteria, Hopkins said, the revised regulations will require less monitoring of state water quality programs by the EPA and will curb citizen input in setting standards at the state level.

The changes could be important in western states with large number of intermittent streams. State administrators think it's foolish to protect these streams for fishing and swimming and want the flexibility the new criteria will give them to downgrade the streams' use, Hopkins said.

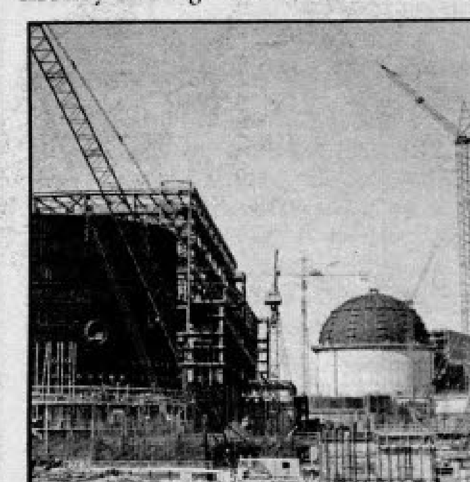
The proposed changes will be printed in the *Federal Register*, followed by a 90-day comment period and 11 public meetings around the United States, Tobin said. He added that it could be a year before the changes are enacted.

—*Jeff Stern*

HOTLINE

Planning for refuges

The U.S. Fish and Wildlife Service has recently asked its regional offices to take a close look at the potential for making more money off national wildlife refuges. There is already some income coming in from the refuges in the form of oil and gas leasing, grazing, farming, timber harvesting and other means. But apparently the refuges are not bringing in enough to help cover the county property taxes FWS must pay to the counties in which the refuges are located. Conservationists are watching the inventory to see that wildlife is given top priority over money making uses.



Palo Verde Nuclear Generating Station

Nuclear fast track

A Department of Energy task force has recommended changing nuclear power plant licensing procedures to permit faster construction of new plants. The proposed change would allow one-step licensing instead of the current system where utilities must obtain several licenses at different stages of construction. In addition, the recommendations would limit cross-examination at hearings on proposed plants and require the Nuclear Regulatory Commission to conduct cost-benefit analyses on all plant safety modifications. The changes can be implemented administratively without congressional approval after the NRC reviews them. Critics have said that public safety will suffer from the changes and that they will not help revive the ailing nuclear industry.

Grayrocks study

Under pressure from residents of Torrington, Wyoming, Basin Electric Power Cooperative will study the safety of its Grayrocks Dam on the Laramie River. The U.S. Army Corps of Engineers recommended the study in 1979 but Basin said the study was unnecessary. However, after Torrington citizens and city council members expressed concern over the dam's ability to withstand flooding, Basin consented to conduct the study. The cost is estimated at $25,000.

Coal sale examined

The House Appropriations Committee will conduct a formal investigation into the Powder River Basin coal lease sale that took place in Wyoming last spring, according to *Coal Week*.The Powder River sale was the largest sale of federal coal leases in United States history (*HCN*,3/5/82). The committee's investigations staff will look at the Interior Department's fair market value procedures, regulations governing the leasing of federal coal reserves and monitor future lease sales in the area. In addition, it is likely that the full committee will scrutinize Interior's budget request for the next fiscal year.

HOTLINE

Red Rim wrangle

The Interior Department may be forced to take part in deciding whether the 20,000-acre Red Rim tract in Wyoming is suitable for coal mining. The National Wildlife Federation has amended its unsuitability petition, which previously challenged mining only on the state's portion of the tract, to include federal lands on Red Rim. Interior might also be sued if it leases the tract to Rocky Mountain Energy, a subsidiary of Union Pacific Railroad, which owns coal in the Red Rim area and could bid on the whole tract. Federal law prohibits railroads from leasing federal coal.

Cold shoulder

The Bureau of Land Management offered three federal land sites in Idaho for sale for geothermal development. But, there were no bids received on the 40,000 acres involved. A BLM geologist attributed the lack of interest to the risk involved in developing geothermal resources. The geologist doubted that any of the three sites could be developed profitably to produce energy.

State Line diamond hunt

Hopes of a diamond boom have been sparked by the discovery of small diamonds in the State Line Exploration District bordering Colorado and Wyoming. Superior Minerals Company and Cominco American, Ltd. have built plants in Colorado to evaluate earth samples taken from the exploration area. Cominco is also looking for diamonds in an area north of Cheyenne, Wyoming. So far, diamonds found at State Line have been mostly one-tenth of a carat or smaller, but according to the *Denver Post*, both companies continue prospecting for what they hope will be this country's first commercial diamond mine since 1919.

Toxaphene use curbed

The U.S. Environmental Protection Agency has proposed banning most uses of toxaphene, a widely used pesticide suspected of causing cancer. Close to 16 million pounds of toxaphene are used yearly in the United States for pest control on cotton, wheat, soybeans and peanuts. Tests have shown that the pesticide can cause widespread damage to animal and human populations by entering the food chain. Minor uses such as dipping sheep and cows to control parasites would be allowed under the proposal. Producers of toxaphene have 30 days to request a hearing with the EPA before the ban is put into effect.

Atlantic Richfield bows out of ETSI

Atlantic Richfield Company will withdraw from the Energy Transportation System Inc.'s coal slurry project at the end of 1982. ARCO currently owns a 25 percent share of the project.

"We think ETSI will be successful but we are reprioritizing," said ARCO spokesman Scott Loll. Loll said ARCO plans to devote a greater share of its resources in 1983 to oil and gas exploration and development. Speculation that ARCO is bowing out because of declining oil revenues is "not accurate," he said.

Frank Odasz of the ETSI office in Casper, Wyoming, said that ARCO's withdrawal will have "no adverse impacts on the project."

Loll said that by making an immediate withdrawal, ARCO is giving ETSI and the five remaining partners in the project — Bechtel, Kansas-Nebraska Natural Gas, Lehman Brothers, Kuhn-Loeb and Texas Eastern — the choice of what to do with ARCO's share.

The $25 million invested by ARCO to date has been "written off," Loll said. However, if the project is successful ARCO will recover most of that money becasue of its contract with ETSI, Loll said.

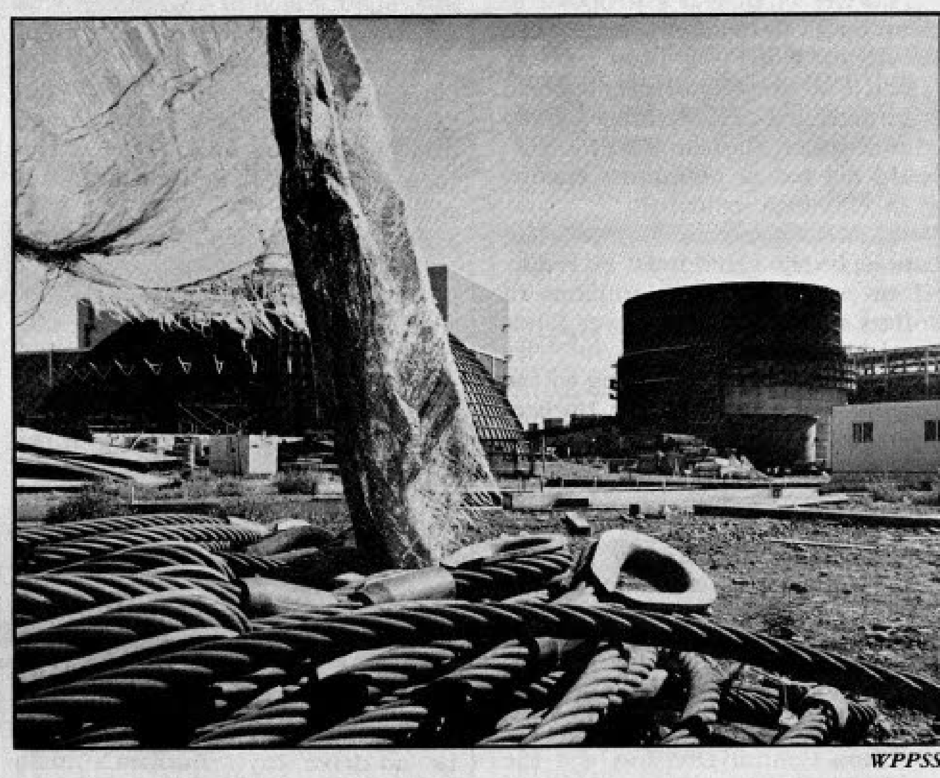
asked whether ETSI plans to bring other companies into the partnership, Odasz replied that information is confidential.

Since proposing the Wyoming-to-Arkansas coal slurry pipeline to the Wyoming legislature in 1974, ETSI has faced a steady stream of conflicts over water and permit issues. Two lawsuits filed in August by citizens groups and three Missouri Basin states challenged the federal government's approval of permits allowing ETSI to withdraw water from the Missouri River Basin (*HCN*, 8/20/82). The cost of the project is currently estimated at $4 billion.

Still Odasz said the five remaining partners, and ARCO, are committed to seeing the project through to the end of the year. As to what will happen after that, Odasz said, "In the past eight years, ETSI has successfully solved many of the complex problems" associated with the project and will continue moving ahead.

—Jeff Stern

WPPSS debts unresolved



WPPSS

The Washington Public Power Supply System took a few more steps on its slow, painful route to dissolution recently when judges in Oregon and Washington contradicted one another about who is responsible for the nuclear power consortium's huge debts.

In late September in Oregon, Lane County Circuit Court Judge George J. Woodrich issued a pre-trial ruling that said 11 Oregon utilities did not have the authority to sign contracts with WPPSS in the mid-1970s because the contracts did not undergo a public vote. Woodrich said the utilities were not liable for their share of the $7 billion debt incurred when WPPSS abandoned two partially completed nuclear plants January (*HCN*, 10/15/82).

But in mid-October, a Washington judge found just the opposite for the utilities in his state.

King County Superior Court Judge H. Joseph Coleman ruled that public utility districts and municipal utilities in Washington did act legally when they signed the contracts and are obligated to pay their share of the debt.

Still another case dealing with the authority of Idaho utilities to sign the contracts is pending before the Idaho Supreme Court.

The utilities are challenging the legality of the "hell-or-high-water" provisions of the WPPSS contracts. Under those contracts, 88 Northwest utilities agreed to purchase the electrical capacity of pplants 4 and 5 of the five plant WPPSS system.

That obligated the utilities to back construction bonds issued for the plants regardless of whether or not the plants were ever completed.

When the two plants were terminated, however, and ratepayers throughout the Northwest realized the magnitude of the debts they faced, a revolt occurred. As a result, the heads of many utilities began to look for ways out. And the first place they looked was the "hell-or-high-water" clause of the contracts.

But while the conflicting judicial rulings have confused the WPPSS situation even further, a January 25 deadline rapidly approaches. On that date, under the terms of the contracts, the 88 utilities are scheduled to begin making payments to WPPSS, which, in turn, will make initial payments on the bonds that will then start to come due. As long as some cases are still in court — and there is little doubt that any decisions made will be appealed — some utilities will refuse to pay.

Even if the courts rule that utilities are required to pay, there are some that face debts so large, the may not be able to.

That raises the spectre of default for the entire system. If WPPSS cannot repay the bonds on abandoned plants 4 and 5, it may become impossible to sell bonds to finance completion of its three remaining plants.

To head off such a disaster, the WPPSS executive board has gone ahead with a study of ways to refinance the $7 billion debt.

Most WPPSS officials have said that the government is unlikely to go for the plan developed by Shearson/American Express last month. That plan essentially calls for a federal bail-out of the system.

Instead, WPPSS planners are studying ways to "regionalize" the debt, or spread it to ratepayers throughout the Northwest, not just those served by the 88 members of WPPSS. Regionalization would involve the Bonneville Power Administration, the federal agency that acts as the region's power broker.

BPA involvement would require federal legislation, most likely in the form of an amendment to the 1980 Pacific Northwest Electric Power Planning and Conservation Act.

"I don't think Congress is going to sit back idly without trying to adjust that burden," Idaho Sen. James McClure (R) said recently. "But if anybody is telling you that we can get out of this without pain, then either put that person down as a fool or a demagogue."

—John Soisson

States hit coal team "demotion"

Governors of nine western states are vigorously protesting the Interior Department's new coal leasing regulations, particularly the reduced role of the regional coal teams. In a letter to Interior Secretary James Watt, the governors said that their recommendations were largely ignored when the rules came out.

Watt said that he has tried to increase cooperation between the states and the federal government. However, this strengthening of ties does not include restoring the powers of the regional coal teams. The teams were established under the Carter administration to give the states input into the amounts of federal coal within state borders offered for lease. The teams have been very popular with the governors in the West, but Watt's Interior Department has downplayed their role.

The letter was sent by Wyoming Gov. Ed Herschler, Montana Gov. Ted Schwinden, Utah Gov. Scott Matheson, New Mexico Gov. Bruce King, Idaho Gov. John Evans, Arizona Gov. Bruce Babbitt and Colorado Gov. Dick Lamm, all Democrats; and North Dakota Gov. Allen Olsen and South Dakota Gov. William Janklow, both Republicans. The governors said the coal teams were "the most vital organ for state-federal cooperation."

In his response, Watt said he had taken the governors' recommendations into consideration when makin leasing decisions. However, he did not share the governors' confidence in the coal teams, saying that including the governors in decisions on leasing levels would be preferable to using the teams, because the teams include three federal employees.

Montana's Schwinden told *High Country News*, "Secretary Watt told me that he is giving the governors a larger role by allowing us after-the-fact input. But we felt we had as close to a genuine cooperative and workable relationship as we've ever had. I think that Interior simply lacks confidence in its people (the federal representatives on the coal teams.) But we thought the teams were working well and if they're not broken, don't fix it."

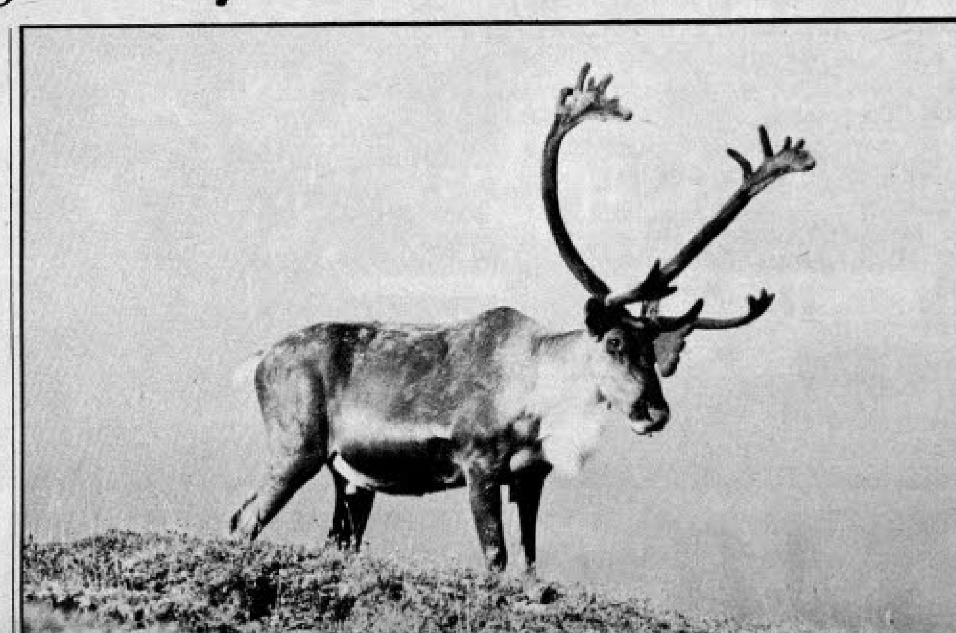
Schwinden has been critical of the Reagan administration's proposals for closer federal-state cooperation all along. Asked if the de-emphasis on the coal teams indicated a backing off from this cooperation, Schwinden said, "Their rhetoric has always outrun the reality. On some issues,like turning federal lands over to local governments, they've been very good. But on some key issues, particularly on coal leasing, our recommendations have not been heeded."

—Dan Whipple

Prognosis gloomy for Idaho caribou

The last band of mountain caribou in the lower 48 states makes its home in the Selkirk Montains of northeastern Washington and norther Idaho. The U.S. Forest Service in northern Idaho recently released a draft plan for a timber sale in an area critical to the caribou's movement between the United States and Canada. The sale could mean the end of the few remaining caribou.

The Red Spruce timber sale, a lsalvage sale of five million board-feet of lumber to remove insect-killed trees, is located in the Bonners Ferry Ranger District of the Panhandle National Forest. The sale area encompasses the Spread Creek drainage, which has been identified by University of Idaho biologists as a necessary corridor for travel by mountain caribou from British Columbia to the lower Selkirk Mountains in the U.S. The area has also been identified as habitat for grizzly bears and the grey wolf.



Leonard Lee Rue III

"There is no spot on the entire Panhandle Forest nearly so critical to caribou use than this sale area," said Dennis Baird, director of the Idaho Environmental Council in a letter to Bonners Ferry District Ranger Jerry Stern. "The number of rare, uncommon, threatened or endangered species using this precise area is thus unique in Idaho and, indeed, in the lower 48 states." said Baird.

As few as 20 caribou come to the area, down from the hundreds that are believed to have been in the U.S. in 1888. At that time, mountain caribou were found as far south as north-central Idaho, along the North Fork of the Flathead River in northwest Montana, and west along the Pend Oreille River in northeast Washington. These were in addition to the herds that roamed the forests of Michigan, Maine and Minnesota.

Road building and hunting soon isolated these herds from one another. Biologists generally agree that the Selkirk herd has remained because it has not been cut off from travel back and forth between this country and Canada.

So precarious is the existence of the herd that the Idaho Fish and Game Department has twice declared the animal extinct in the last 50 years, only to have it show up again.

The U.S. Fish and Wildlife Service accepted petitions in February, 1981, to list the mountain caribou as a threatened or endangered species. Either classification is opposed by the Forest Service. The agency asserts it can manage the caribou adequately with a FWS designation.

Generally, the Forest Service has adopted a management program to benefit the caribou. This has included leaving some mature stands of Engelmann spruce, which support the caribou's main source of food during winter. But an infestation of spruce bark beetles has prompted the Forest Service to log areas of prime caribou habitat.

Critics of the sale are concerned whether the Forest Service's actions will maintain the habitat for the caribou and grizzly. Some charge that the Forest Service is using the insect infestation as an excuse to give the Bonners Ferry economy a shot in the arm.

Don Johnson, a biologist at the University of Idaho who has studied the Selkirk herd, recommended in a letter to ranger Jerry Stern that "access control should be the overriding consideration in any management decision within caribou range...The development of permanent roads invites poaching." Johnson went on to say that "the development of permanent roads is not in the best interest" of the dcaribou. The major cause of mortality of the Selkirk caribou herd has been road kill and poaching, which is influenced by the access roads bring to the range. Biologists have recommended that all side roads within the caribou's habitat be closed and that prosecution for poaching be more strongly enforced.

In the environmental assessment, the Forest Service preferred alternative calls for three miles of permanent roads although none would be built above 4,500 feet. That elevation is considered the critical elevation level in the caribou's habitat.

The Idaho Fish and Game Department's official stand on the Red Spruce sale has been to endorse the "no action" alternative of the EA. Tom Leege of the Idaho Fish and Game Department in Coeur d'Alene said that the agency thinks the caribou are too valuable, and the population critical enough, that none of the harvest alternatives were acceptable. Leege said, "The value of the timber in this area is just too low to risk losing the caribou."

— Craig Gehrke

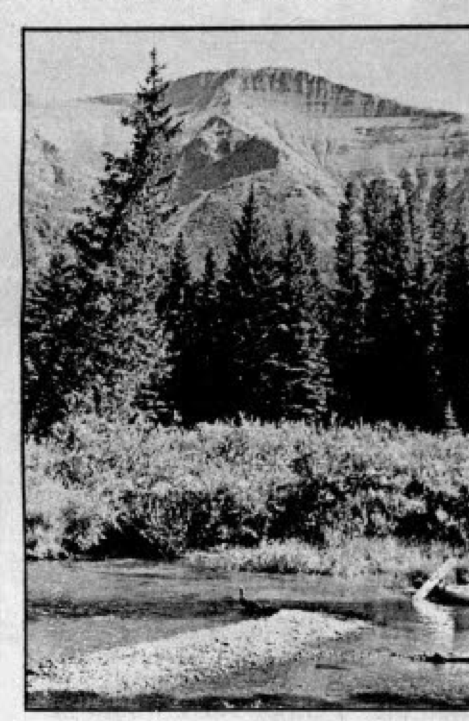
HOTLINE

Gas leak suit

A Northglenn, Colorado family is suing Chevron USA over damages allegedly caused by a Chevron service station's leaking underground storage tanks. The leaky tanks were discovered in late 1980 after a series of explosions in a nearby sanitary sewer alerted officials to the problem. Thirty-four families had to be relocated after the explosions. According to the *Denver Post*, the director of the Rocky Mountain Poison Control Center testified that one of suing family's children suffered toxic poisoning from gasoline fumes and that the rest of the family suffered emotional and physical distress from the incident.

Pacific Rim market dim

Worldwide recession and oil surpluses have slowed the demand for western United States coal in Pacific Rim countries such as Japan and Taiwan. Japan's largest steel manufacturer recently announced that it would close two blast furnaces and Taiwan Power Company cancelled orders for 800,000 metric tons of coal due to the sluggish economy. However, coal port facilities in the Northwest have not given up on the Far Eastern market. Officials at several ports are awaiting a decision by Korea Electric Power Company on whom it will choose to supply it with two million metric tons of coal.



Dale Burk

Flathead commission

Montana Gov. Ted Schwinden (D) is being urged to form a commission to monitor environmental quality in the Flathead River basin. The commission would continue the monitoring program that was being initiated under the Flathead River Basin Environmental Impact Study. The five-year study is due to end next year. Proponents of the commission fear that future changes in the basin's environment may not be detected if the monitoring program is discontinued.

BARBED WIRE

Stalking the wild metaphor (cont'd). Bureau of Land Management head Robert Burford, in the opening two paragraphs of a speech to the National Public Lands Council, said, "When I came to the Bureau of Land Management about 18 months ago, I found that our public lands were being 'managed'...as private playgrounds for a number of special interest groups...That's a lousy way to run a railroad...It's heresy."

Maybe so, but at least it doesn't cost much. The President's Private Sector Survey on Cost Control is a committee consisting largely of business interests which will recommend ways to save money in federal agencies. Peter Grace, chief executive officer of W.R. Grace & Company and chairman of the committee, sent a memo to commission members which said, in part, "The leading journalists are strong supporters of environmental protection, affirmative action, women's rights, homosexual rights and sexual freedom in general, bordering on promiscuity. It is no wonder that traditional religious and family values have suffered such and erosion over this period of increased media influence."

Or like two men in a library, up to their necks in dictionaries, arguing about whether all the good analogies have been used up. Dr. Edwin Firmage, a leader of the battle to keep the MX missile racetrack basing system out of Utah, said at a nuclear arms debate about the arms race, "We're like two men in a basement up to our armpits in gasoline and we're arguing over who has the most matches."

COPPER DEPRESSION

HARD TIMES IN HARD ROCK

David Spear

Butte, Montana

Montana

by Don Snow

When Atlantic Richfield Corporation announced closure of its Montana copper smelter two years ago, Montanans reacted like today's fans of the National Football League—disbelief, followed by mutual reassurances that business would resume soon, followed by stupefaction. The company had pulled out. Period. There would be no season for copper fans.

Now, two years later, the shock has turned into a kind of obstinancy. ARCO closed not only its infamous Washoe Smelter at Anaconda, but also the copper refinery at Great Falls, the mile-wide Berkeley Pit and the entire underground mining operation that caused little Butte, Montana, to be called "The Richest Hill on Earth." Only the economical East Pit in Butte is operating, and its ore is being shipped to modern smelters in Japan.

If all that wasn't hard enough for Montanans to swallow, ARCO in mid-September destroyed its 506-foot-tall refinery smokestack in Great Falls that had stood for 74 years on the banks of the Missouri as a monument to Montana copper. Ironically, the initial dynamite charge was not enought to topple the entire 18-million-ton stack, but left instead a final quotation mark of erect bricks which caused the demolition team to drive 300 miles round trip to Butte for more powder.

Some say that copper in Montana has kind of been like that ever since ARCO took over: they knocked down all but a piece.

As recently as 1960, the Anaconda Company owned a mineral empire that stretched across the Western Hemisphere. The company was the nation's leading copper, zinc and manganese producer, operating a billion-dollar business when the word billion still brought a gasp from the American public. A well-integrated mining and manufacturing company, Anaconda produced raw ore, milled it, smelted it, refined it, then turned it into finished products that fed the housing and automobile industries with indispensible commodities.

In 1955, Anaconda built a new aluminum smelter in Columbia Falls, Montana. A few years later, it owned the largest uranium mine in the world—New Mexico's Jackpile—and the largest copper reserve—the Chuquicamata Mine in Chile—ever discovered after Bingham Canyon, Utah. It owned 400,000 acres of Montana timberlands and seven major newspapers in the state. Wondering whether Anaconda controlled state government was like wondering if there were Democrats in Butte.

But in 1971 hard times began to fall on the company. The Allende government in Chile took over the Chuquicamata, squeezing off 75 percent of Anaconda's total annual revenues. Meanwhile, the U.S. government was busily enacting air quality, water quality and occupational heath regulations which ARCO now claims would have cost $400 million in compliance improvements at the smelter alone.

Instead of complying, the old Anaconda Company received variance after variance from the State Board of Health, while it gradually invested $65 million in pollution control. The Clark Fork River no longer ran red, but the smelter still exhausted dangerous levels of sulfur dioxide and other air pollutants.

By 1976, Anaconda was begging for an injection of new capital and management. They found it—or thought they did—when the Atlantic Richfield Corporation bought them out for a mere $684 million.

David Spear

Anaconda thus became the first major U.S. mining company to be purchased by big oil. ARCO Chairman Robert Anderson himself flew to Helena to declare a new begining for Anaconda. ARCO, he said, would invest some $2 billion over the next five years to upgrade Montana copper operations.

Three years later, the operations had all but closed. ARCO officials charged that federal air quality standards were to blame for the closure of the smelter and refinery, but a study by the Environmental Protection Agency revealed that air quality improvements were only one of 12 major factors contributing to the shutdowns.

Undoubtedly the largest factor was the plummetting price of copper and Anaconda's resultant loss of $38 million in 1980. Rather than invest in"non-productive improvements," the parent company pulled the plug on Montana's largest private employer. About 1,500 workers in Great Falls and Anaconda immediately lost their jobs. Over the next two years, with cutbacks in the mines, a thousand more were out of work.

ARCO's total sales in 1980 amounted to $24.1 billion. Tiny Anaconda, unable to turn a profit on its $473 million in sales, produced less than two percent of its parent's total, and had to be shut down. That fact alone turned many Montanans against ARCO.

The EPA report did not help the company's tarnished image. EPA charged that ARCO's $400 million clean-up estimate was "misleading and overstated," since it included costs that were actually attributable to processing improvements as well as environmental compliance.

EPA also revealed, "ARCO expedited the closure of the smelter in order to seize the current opportunity of securing reasonable terms with Japanese smelters," even though EPA had announced its willingness to delay compliance for at least two years.

ARCO officials readily admit that shipping its copper to Asia is cheaper than upgrading its own Anaconda smelter—a fact which disturbed Montanans who had lived for 80 years with the smelter.

Anaconda in its declining years was disliked but tolerated, its variances granted as one excuses an old man's bad table manners. ARCO, the enormous, efficient combine, is despised.

Attempts to enact plant closure legislation occurred after the smelter and refinery shutdowns, but the business-minded 1981 legislature killed them. Recently, a labor-oriented group called Montanans for Corporate Responsibility tried to put a plant-closure initiative on the 1982 ballot but failed to gather enough signatures.

Interestingly, the Montana AFL-CIO, which pushed a similar ballot issue unsuccessfully in 1980, failed to endorse the 1982 effort. Fears of stifling industrial development may have been the cause for the union's new reluctance.

Both the attempted legislation and the initiatives would have required businesses employing large numbers of workers to provide severance benefits and community impact funds upon closure. Only a handful of Montana businesses would have been affected, but critics of the proposals charged that such legislation would scare away new industries and saddle existing ones with unreasonable costs.

Although they failed, both attempts at plant closure legislation were part of a loud public outcry against ARCO and its perceived insensitivity to Montana workers.

John Calcaterra, public relations director for ARCO-Anaconda, said that public scorn against ARCO is undeserved. "If it had not been for ARCO, Anaconda could not have survived at all," he said. "For years, Anaconda operated outside of the law (in matters pertaining to air quality and occupational health standards). ARCO has a policy that it will comply with those laws or not operate. The closure of the smelter and refinery was what we call an economic closure," said Calcaterra, and in his view it was inevitable.

But others have a different view of why ARCO closed two-thirds of its Montana copper operations. Dr. Arnold Silverman, mineral resource analyst at the University of Montana, pointed to the takeover of the U.S. copper industry by the oil giants as a reason to believe that domestic copper will never be the same. Since the ARCO-Anaconda merger, Pennzoil has purchased Duval Copper in Arizona and Standard Oil has acquired both Cyprus Mines and Utah's Kennecott.

Silverman said that the oil and traditional mining companies operate with differing expectations about acceptable levels of profit, and that means trouble for America's antiquated copper operations.

"What was good enough for Anaconda in terms of a rate of return is not good enough for ARCO," said Silverman. He pointed out that traditional mining companies are accustomed to weathering out periods of low prices and marginal returns. "That's just part of the cyclical nature of metal mining," he said. But a petroleum company as large and diversified as ARCO will not necessarily take its lumps when times are tough.

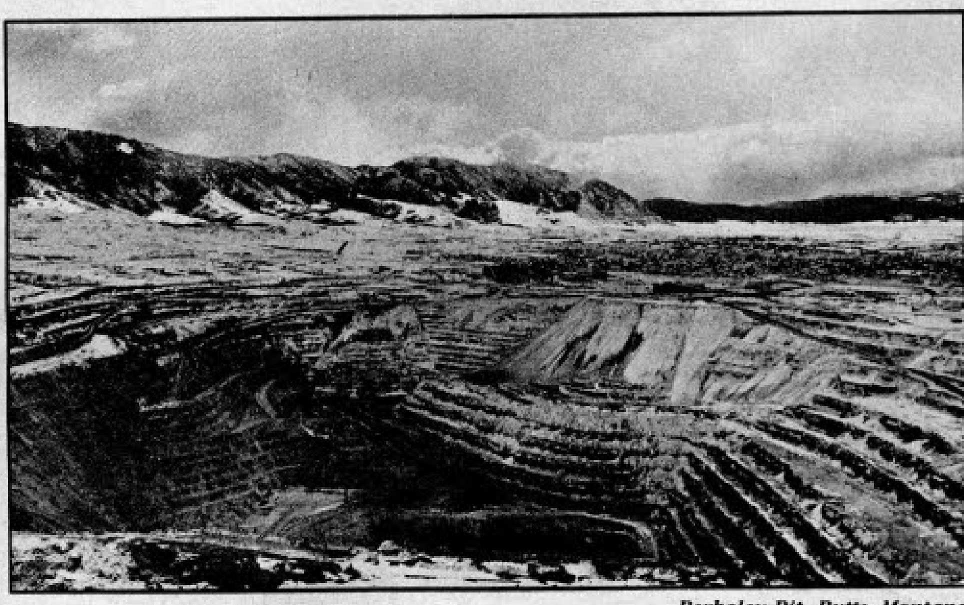
The continuing operation of Anaconda Aluminum's profitable smelter in Montana lends credence to Silverman's views. While ARCO's new copper subsidiary was chalking up modest losses in Butte, its aluminum business turned a $150 million profit in 1980.

John Calcaterra agrees in part with Silverman, but he hastened to point out that ARCO has hardly pulled out of Montana copper. "Oil companies are accustomed to a quick investment and a quick recovery, relative to the mining industry," he said. "But remember, we are still employing a substantial work force in Butte. We are producing as much copper as ever—42,000 tons of ore per day with 800 workers at the East Pit. Three years ago we had 1,800 employees."

Calcaterra also pointed out that the East Pit reserve amounts to over 500 million tons of low-grade, economical ore. "That's enough for 20 years at present levels of production," he said, noting that ARCO has also invested $30 million for recovery of byproduct molybdenum from the East Pit.

But with the price of copper at its lowest point in a decade, no one is making bullish predictions for the future of Montana copper. If Silverman is right, there will be more permanent closures nationwide as more American copper follows the ARCO trail to Japanese smelters. And in Montana, no one, including ARCO-Anaconda, will make the billion-dollar investment necessary to build a new copper smelter in the near future.

ARCO's long-term strategies for Anaconda Minerals include less investment in copper and more in other metals, especially strategic minerals. The company has already submitted a tentative mine plan for a new platinum-palladium project on the Beartooth Plateau near Livingston, Montana, and it announced a year ago that it will invest $200 million in a Nevada molybdenum complex. If Anaconda is going anywhere in copper it is ironically headed back into Chile, where the present government is less disposed toward sending American entrepreneurs back home.



David Spear

Berkeley Pit, Butte, Montana

Meanwhile, other companies appear ready to carry the copper torch in Montana—provided that a more valuable mineral lights it. The American Smelting and Refining Company (ASARCO) has opened an underground copper-silver mine in Montana's remote northwest corner near the Cabinet Mountains Wilderness Area. While modest amounts of copper are being produced, silver is clearly the money-maker at ASARCO's Troy Project.

Interestingly, ASARCO acquired the Troy property from Kennecott when the Utah copper giant could not finance development of the rich silver mine, slated to become the second largest in the country. Now that Sohio has purchased Kennecott, however, financing new ventures promises to be less of a problem.

Other firms, including U.S. Borax, are also combing the rich Revett mineral belt of northwestern Montana, inciting the wrath of local wilderness supporters who object to drilling in and around the wilderness area. But outside of ASARCO, no one has yet committed to opening a new copper-silver mine.

ARCO's Anaconda Minerals now says that in 10 years, copper will provide only 50 percent of the company's revenues, with molybdenum and strategic metals making up the balance. That scenario implies no copper expansion in Montana, as investments are directed toward new properties on the Beartooth Plateau.

Without Anaconda and the enormous wealth of ARCO backing it up, Montana's most celebrated metal has a tarnished future ahead. The question now is whether the East Pit will continue operation or whether it, too, will crumble like the last piece of the Great Falls stack.

‡‡‡‡

Don Snow is a freelance writer in Stevensville, Montana, and a contributing editor of *High Country News*.

COPPER DEPRESSION
Arizona

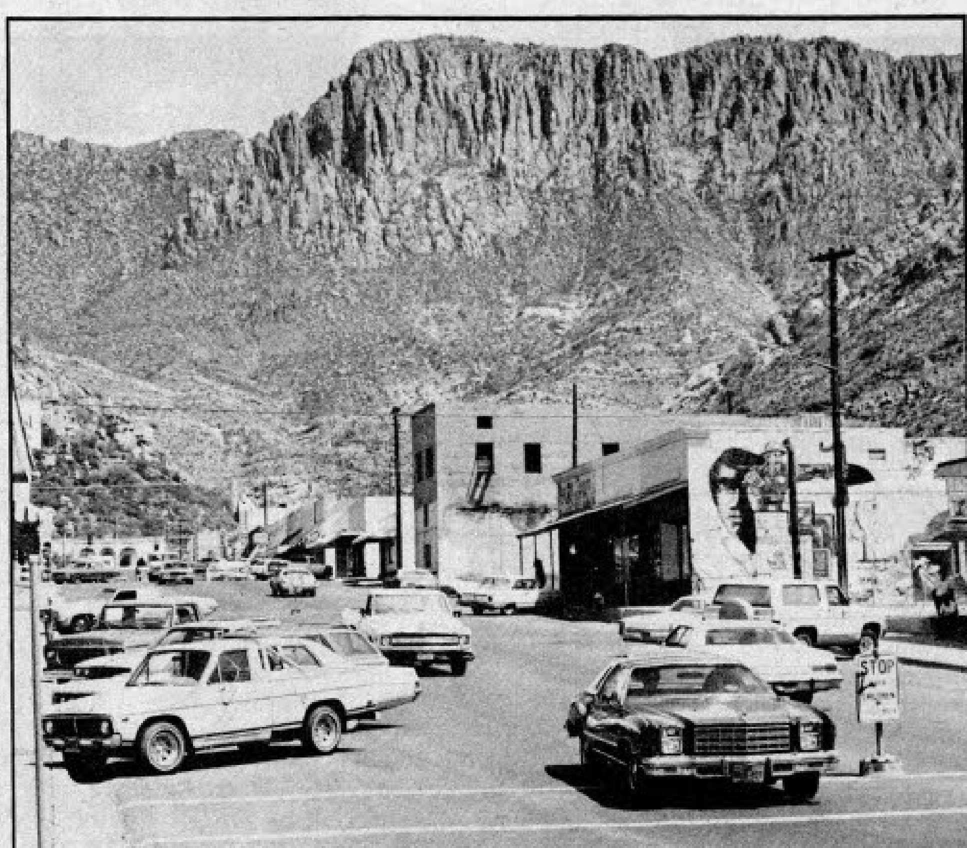
by Paul Talbot

In the Arizona mining towns of Ajo and Douglas, Superior and San Manuel, Miami and Morenci, the impact of the recession has been inescapable. The effect of the international collapse of copper prices has been unprecedented.

"In real terms, real dollars, real value," said Arizona Mining Association president C.J. Hansen, "they are as low as they've ever been."

The lineup of mining companies which have closed or significantly reduced their Arizona operations offers a *Who's Who* of the copper industry. It includes Kennecott, Phelps Dodge, Anamax, ASARCOand Magma. Few corporations are willing to operate when production costs exceed the market price by at least 20 cents a pound.

To differing degrees, workers in Arizona's mining towns have been dealt one lousy hand after another since copper prices started their swift, steady skid late last year.



Paul Talbot

Main Street, Superior, Arizona

Superior, a town of 4,600 where the Superstition Mountains fade into the Pinals southeast of Phoenix, was particularly hard hit.

On August 14, 1982, the Magma Copper Company's number nine shaft in Superior closed down. Magma management officially informed the union leaders at 9 a.m., but rumors had been swirling through the streets for an hour. Even with the other mines in other towns closing or curtailing production, the 1,250 Magma employees had an "it can't happen here" attitude. Number nine was the only copper mine in Arizona that operated through the 1930s.

It is usually in the nineties on a summer afternoon in Superior. Shade cools the planter in front of the Valley National Bank where older men sit and chat. Across Main Street the sound of a Pac Man game in progress leaks out of Bobbie's Snack Bar and Arcade. Pickups and Chevy sedans cruise back and forth. The ones without air conditioning often have towels or folded newspapers draped over their doors to protect

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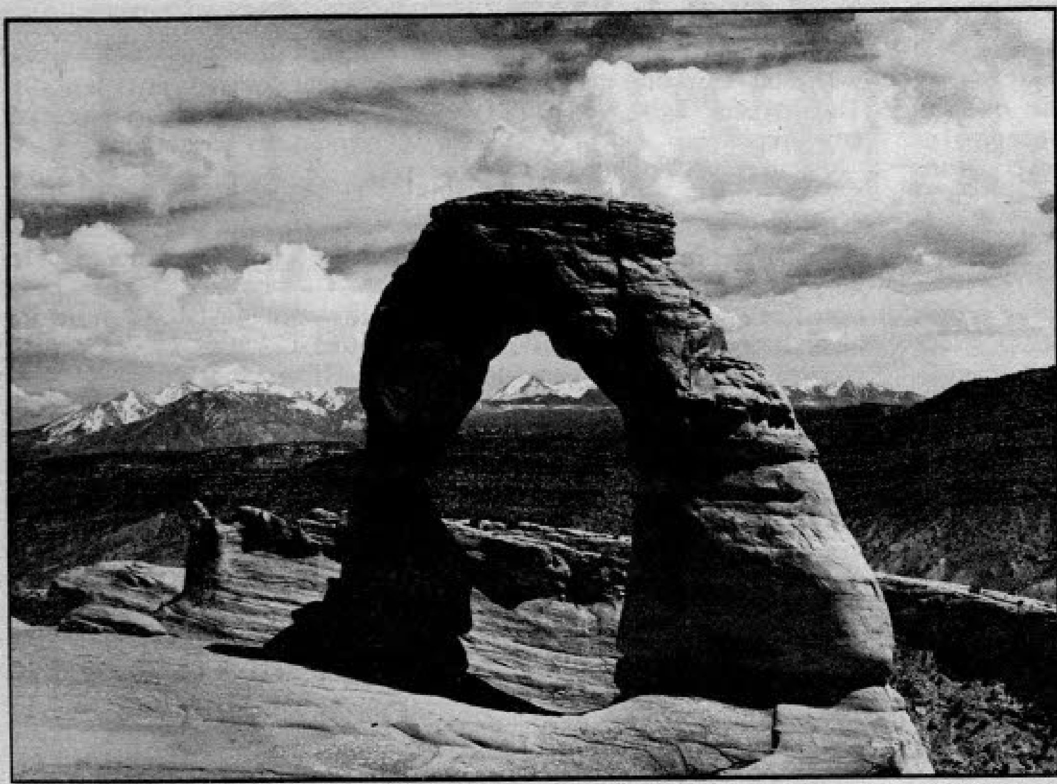
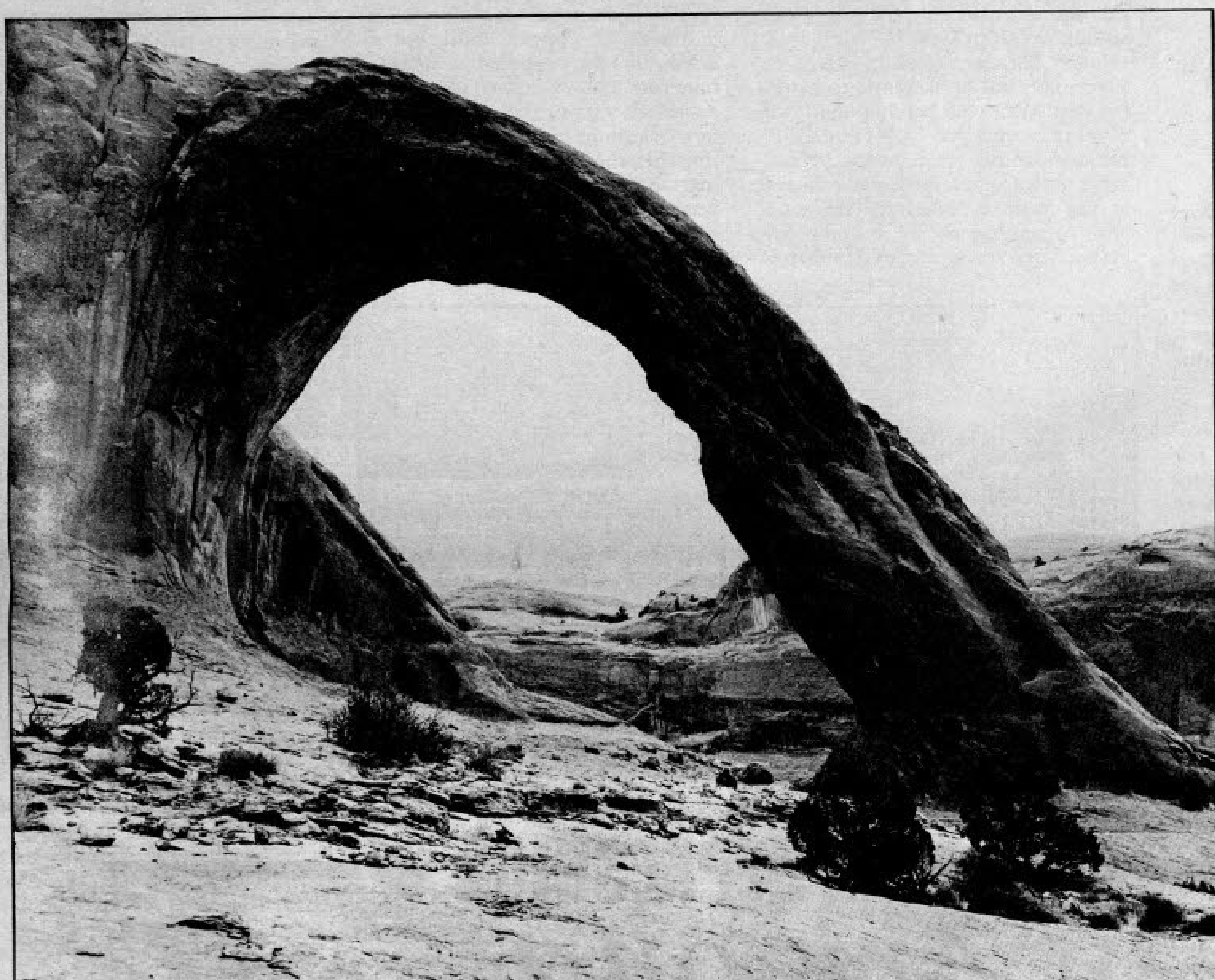


Delicate Arch, Arches National Park

Photos by John

ARC



Corona Arch near Moab, Utah

Jacob Hambl

Navajo Arch, Arches National Park

Broken B

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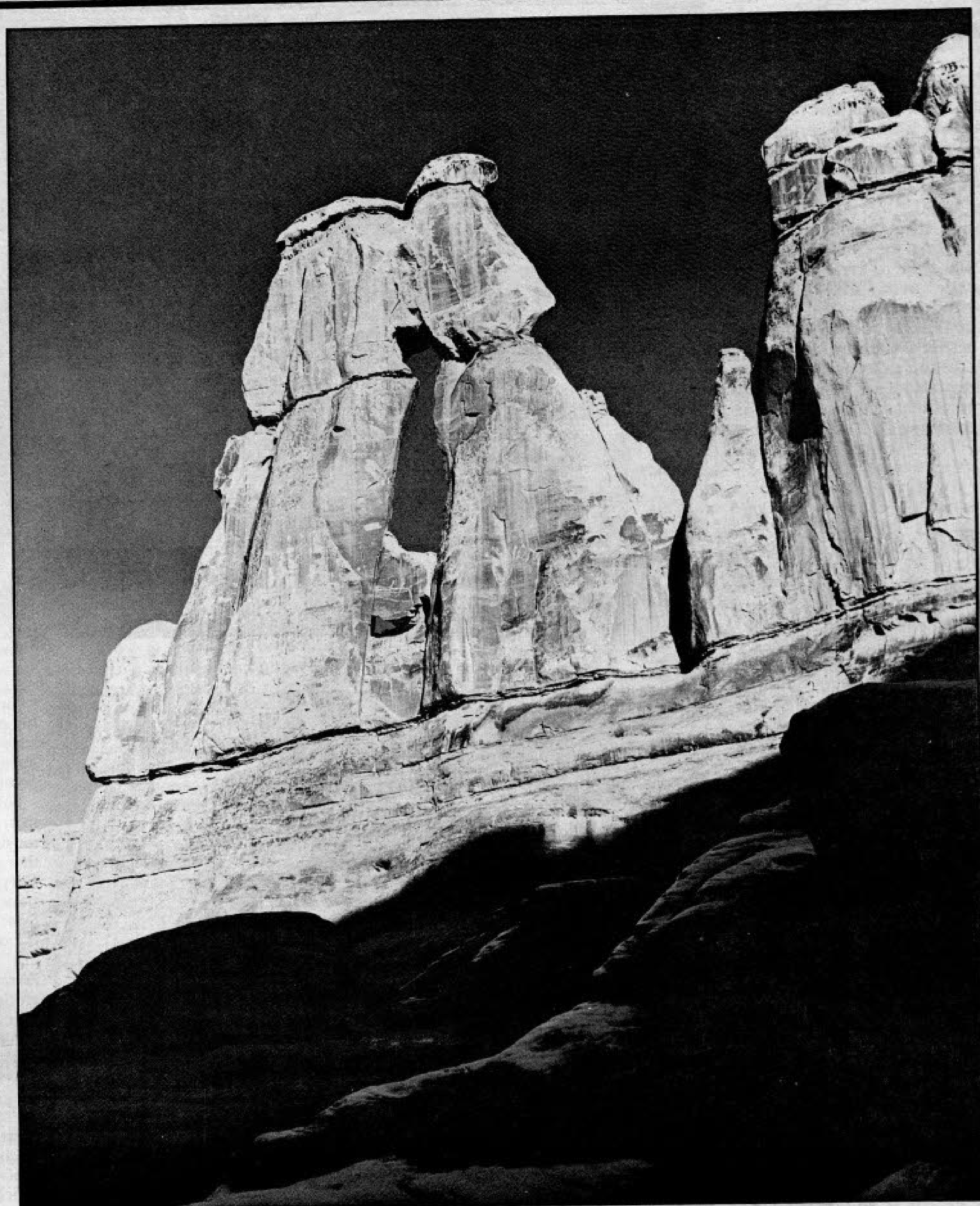
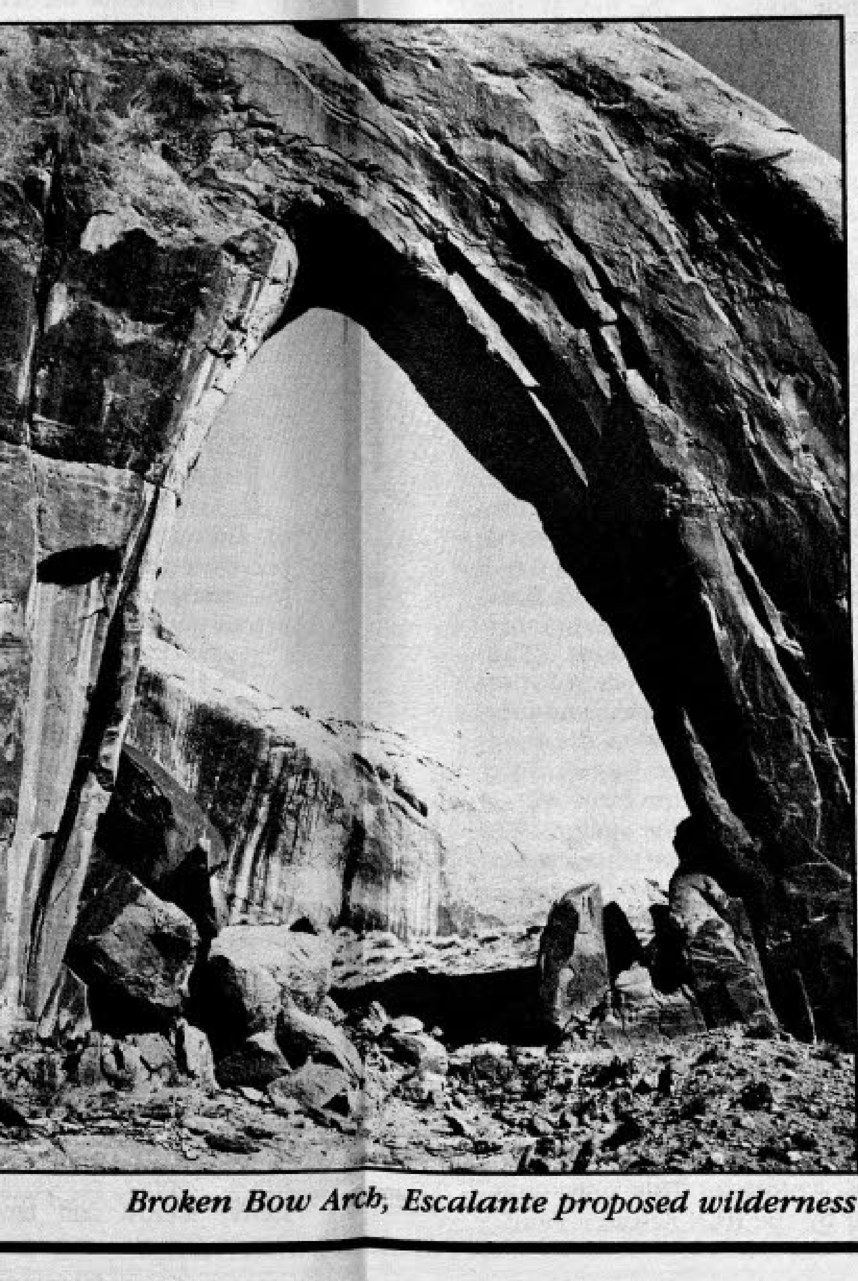
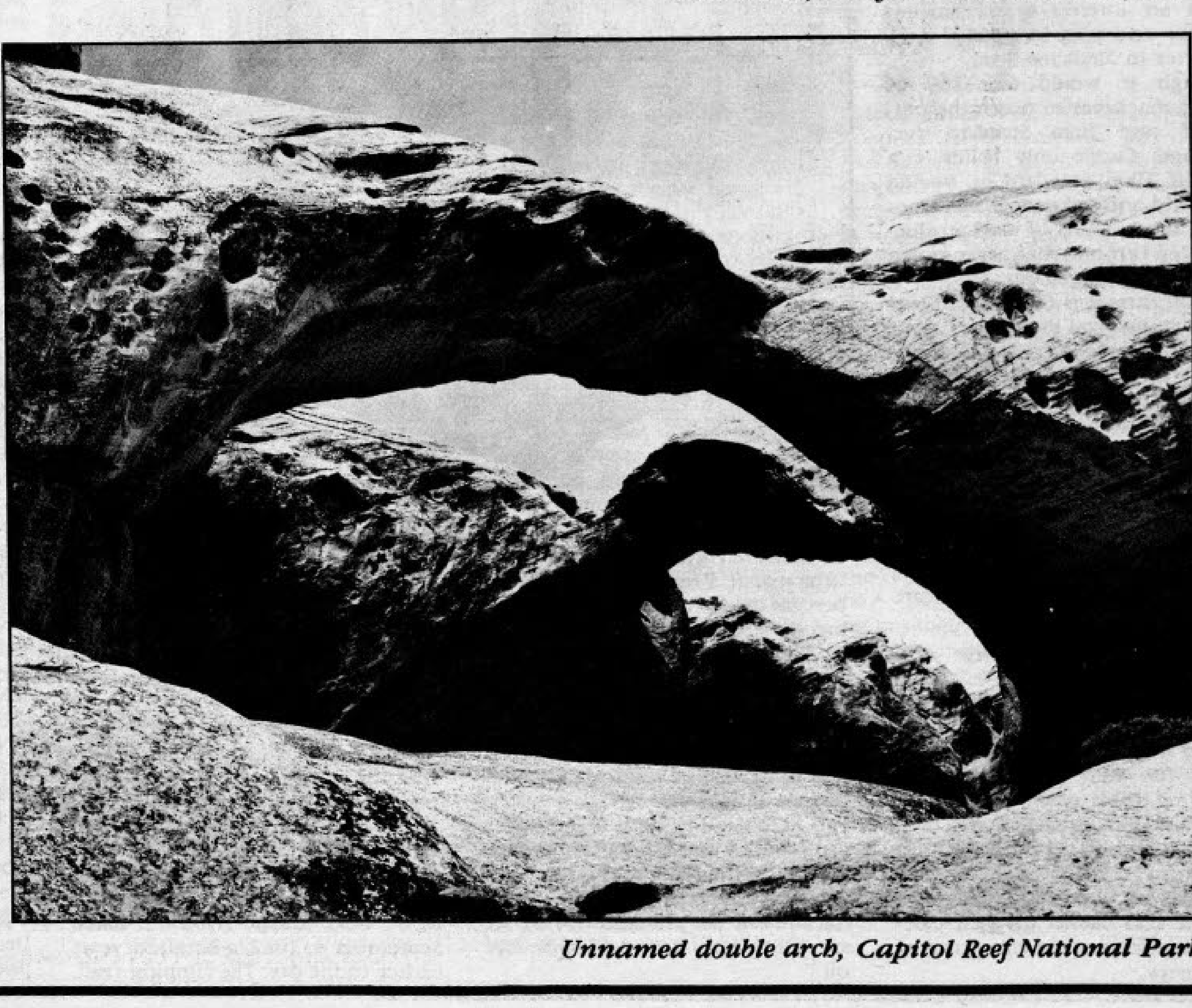
Jacob Hamblin Arch. Escalante proposed wilderness



Druid Arch, Canyonlands National Park



Broken Bow Arch, Escalante proposed wilderness



Unnamed double arch, Capitol Reef National Park

Wind...

(continued from page 1)

reliability. A windmill that runs half the hours in a ten-year period will have had the equivalent use of a car that was driven two million miles. "These are fatigue machines," said George Walder of Ham Standard. "To assess them we need a lot of operator time in a utility environment. You have to cycle the blades, develop the stresses and see how the machine holds up."

The challenge of large windmill design is that the turbines have to be machined to exacting tolerances, buth they also have to be able to rotate untended in hail, snow, rain and high winds. If something goes wrong, a wind turbine can self destruct in a hurry.

Take, for example, this report: a small windmill, operating in high winds, has a brake failure. The 30-foot-long propeller accelerates rapidly. The blade tips—which normally revolve at 200 miles per hour—are soon spining at 750 mph. Then," one blade flew off and landed 100 yards away. Its sudden absence put a horizontal stress of 40 tons on the tower. In the next two seconds the machine threw the other blade and destroyed itself in midair." Calamities like these have been the bane of the wind industry for years.

Notwithstanding such problems, there are a number of companies in-addition to Ham Standard and Boeing—including Bendix, Westinghouse and General Electric— which hope to market the first "economic" multi-megawatt wind turbine.

In theory, large machines do have an economy of scale that smaller turbines can't match, but there are those who feel that these large companies are on the wrong path. "I think these giant machines will be dinosaurs," said Jay Carter, Jr. of Carter Wind Systems. "For these aerospace companies bigger is better, but they aren't yet cost effective and government subsidies won't be here forever."

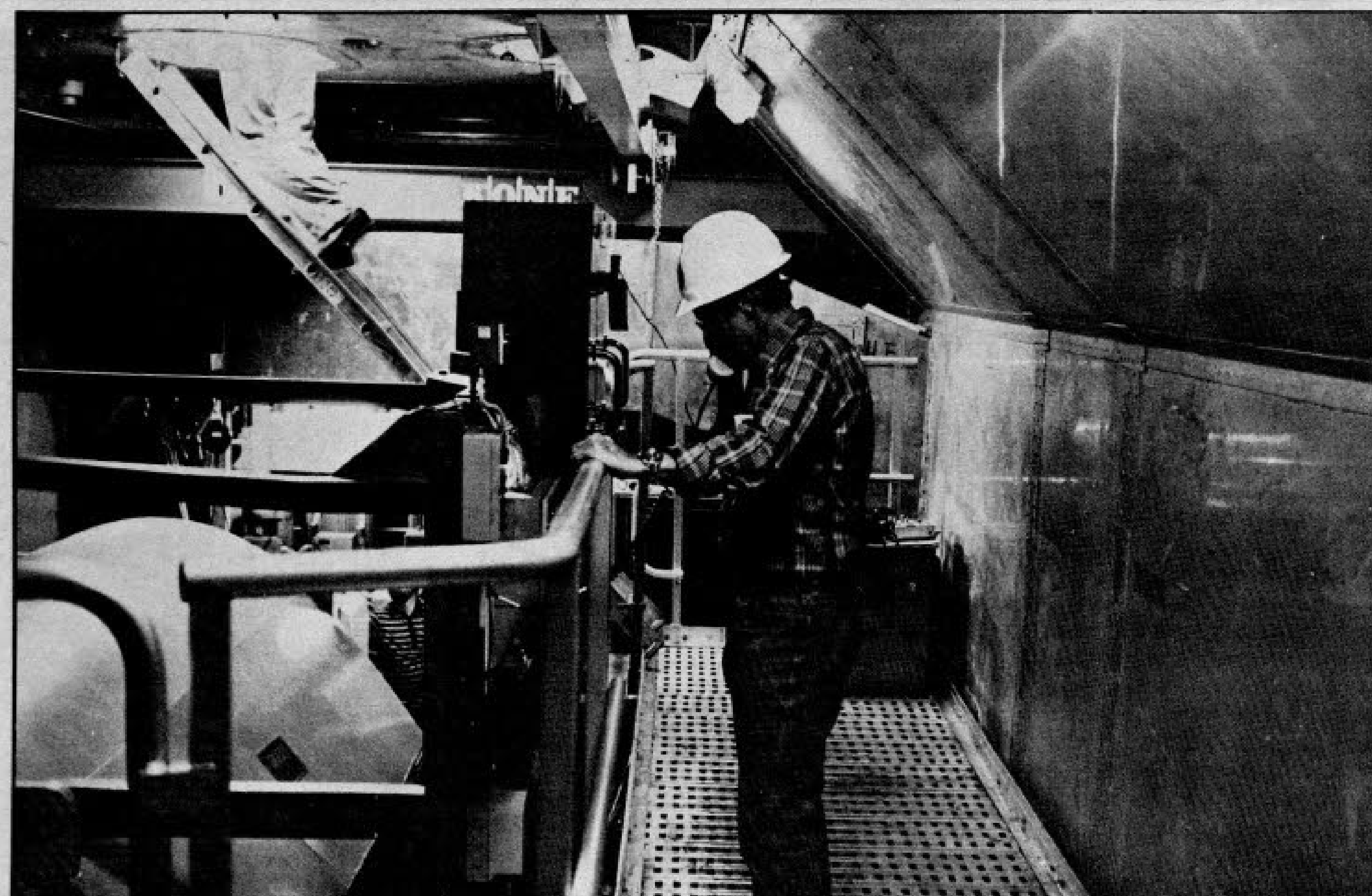
Carter's own 25 kilowatt machines are backordered two and a half years, and his design is so respected by Hamilton Standard that they have bought an interest in the smaller company and plan to monitor a 25 kw Carter in Medicine Bow.

Though it would take 160 of Carter's machines to match the output of one Ham Standard turbine—and Carter only builds 4 a week—if Ham Standard or Boeing can't build and sell enough machines to gain the benefits of mass production, large turbines may never grab a significant market share.

As Bob Bussolari of Ham Standard put it when asked the price of their turbine, "You don't want to know the price of the first Model-T, the one you want to buy is the 1,000th."

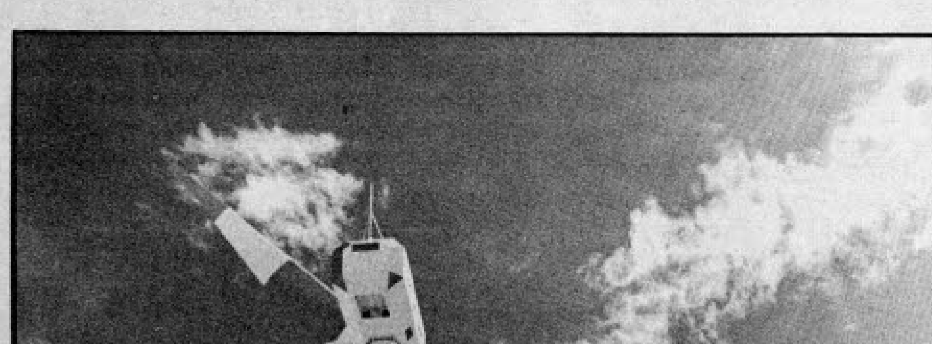
"But if Ham Standard doesn't sell the 10th unit," said Don Hardy of Pan Aero Corporation, a Denver-based wind power company, "they'll never sell the 1,000th. These large companies have to price that first unit into the marketplace and that requires a commitment to manufacture it at an initial loss."

Currently, both large and small wind turbine manufactureers are relying on third-party, venture-capital firms like Pan Aero to keep the industry solvent. But third-party developers are having their problems as well. High interest rates, the oil glut, and legal challenges to the Public Utilities Regulatory Policy Act, which guarantees small energy producers a fair price and market tor their electricity, are slowing the emergence of the industry.



Steven Maxwell

Bob Bussolari in the Ham Standard nacelle



Steven Maxwell

Ham Standard W.T.S.-4

"Merrill Lynch tells us we need to demonstrate a return in the high 20 percent to low 30 percent (on investment)," said Ethan Thorman of Windfarms, Ltd. "And for us to do that we need those federal energy tax credits which Reagan has threatened to cancel"—and which lapse in 1985 in any event.

Such sudden governmental policy lurches dismay the wind industry. Pan Aero's Hardy said, "The nation can't afford this short-term, next-quarter, bottom-line mentality when it comes to energy matters. It is intolerable, if not ridiculous, that we are still so dependent on Middle East oil."

The dedication itself was a low key affair, surprisingly well-attended. A girl on horseback delivered a letter from Interior Secretary James Watt saying he approved. Later, Daisy Mae Epperson of Rock River, Wyoming, was awarded a medal for a letter she mailed in 1948. In it she told her congressman that the nation ought to build some machines to harness Wyoming's winds. Thirty-four years later, her advice had been heeded.

A Ham Standard public relations man passed out a clipping from the New York *Daily Tribune*, dated September 4, 1882, a hundred years earlier to the day. The clipping read, "Tonight, Mr. Thomas Edison and his employees were found in a high state of glee as they celebrated the opening of the world's first electric power station."

Folks from Medicine Bow hope that the turbines might become a tourist attraction. The machines have that potential. Already this summer Mary Steinfeld, a BuRec public relations woman, has guided engineers from England, Spain and France to the site. "I didn't imagine it to be so big," Patrick Leclere, chief of the French wind program, said in an interview published in the *Medicine Bow Post*. "It is so large that it puts everything in a different scale. I don't get an impression of being overwhelmed by space—I get a feeling of freedom—of opportunity."

Various parts of the turbines are reminiscent of other modern machines. the blades, though 300 feet long, resemble gigantic helicopter rotors. The nacelles, or generator rooms at the top of the towers, are similar to the engine rooms of large ships. "Except that in a ship," says Bussolari, "you have an engine geared to and turning a propeller, whereas here you have a propeller geared to and turning a generator."

The Ham Standard nacelle, which looks like "a pig's nose," according to one Boeing engineer, is three stories high, as long as a boxcar and was constructed in Sweden, by a company called SwedYards. SwedYards and Ham Standara erected another turbine in Sweden this past summer. Representing the Swedish Company at the Wyoming dedication was a gentleman named Bengt Gamner.

Sweden, Gamner said, gets its electricity primarily from hydroplants and nuclear power stations. The Swedes currently use one of the world's highest per capita amounts of nuclear electricity. What did they do with their nuclear waste? "We havn't solved that problem yet," Gamner said with a wry smile. "We may have to wait a few years for the solution to appear."

If the Hamilton turbine proves its reliability in Sweden, Gamner said, then his nation will embark on an ambitious wind program, "because as much as I, as a consumer, want the oil glut to last, it is obvious that it won't."

‡‡‡‡

James Udall is a freelance writer in Denver, Colorado. This story was paid for by the HCN Research Fund.

Harnessing the western wind

One perennial barrier to the development of the nation's renewable energy sources has been ironically enough, the utility industry. Sheltered in a monopolistic setting which insulates them from the marketplace, utilities have little incentive to gamble on new technologies or energy sources. But since 1978 things have been somewhat different nationwide, and very different in California.

In that year the federal government passed the Public Utilities Regulatory Policy Act and the state of California established a goal—and tax incentives to promote it—of having 10 percent of the state's electricity generated by the wind by the year 2000.

These tax incentives, in concert with PURPA, which forces utilities to buy electricity from small power producers, whether they want to or not, have had a dramatic impact on the West Coast.

"The market in California is phenomenal," said Jay Carter, Jr. of Carter Wind Systems. "First, the credits allow me to sell my machines at a profit. Then, a turbine you've paid me $25,000 for only ends up costing you half that, and you can generate $12,000 worth of electricity very quickly."

How quickly? "In some sites in California," Carter said, "my machines can be paid back in two years." This is simple arithmetic for entrepreneurs. If a Carter machine built to last for 30 years can be paid back in two, the rest is gravy.

The rush to renewables is on. For instance:

- Pacific Gas and Electric will send a brochure boldly proclaiming, "PG&E wants your power. Any or all of it from cogeneration, wind, hydro, biomass, solid waste or sunlight."
- In the last year, U.S. Windpower has installed almost 200 wind turbines near San Francisco. When the company is finished some time next year, 600 windmills will be deployed in the world's largest wind farm.
- Finally, there is one other telling omen that the wind has lost its esoteric status. At two Bay Area McDonalds, wind turbines are grilling Big Macs.

If such developments represent the first stage of harnessing the wind, fuel to boost the second stage has just been provided. Last summer the California Energy Commission published a study that showed wind energy will be far and away the most economical source of new electricity by 1990. "And that," said Carter "included oil, gas, coal, nuclear, you name it."

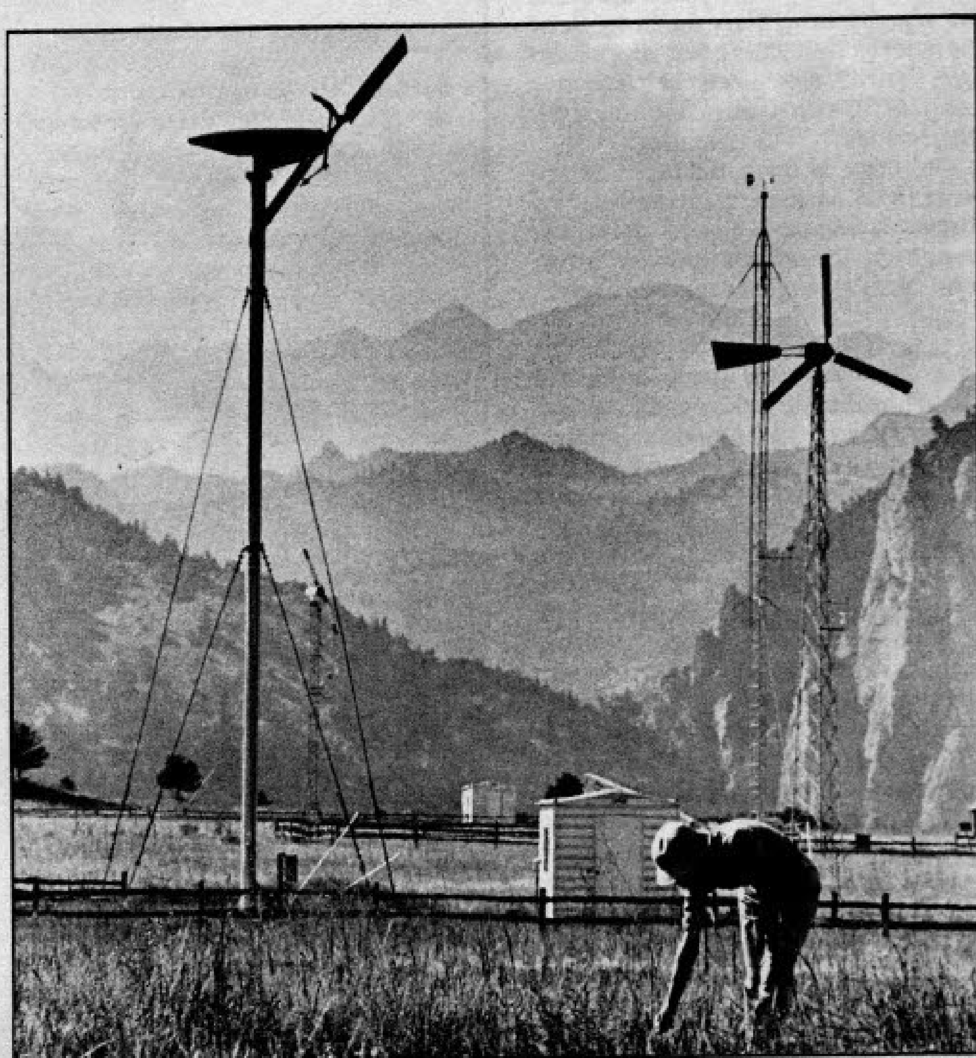
Will the state reach its goal? "Right now we only have 60 megawatts installed," says Kathleen Gray of the California Energy Commission. "That leaves us with another 3,940 Mw to build and that seems like a lot. But wind developers don't have to jump through hoops to get a permit, the energy is there, the economics are right. We remain optimistic"

Livingston, Montana is a town of 7,000 people just north of Yellowstone National Park. Five years ago, 1,200 of those people were employed by the Burlington Northern Railroad. They were diesel mechanics, electrical engineers and machinists.

But in the last few years, as BN laid off 600 employees, the town lost the economic base on which it had relied for almost a century. Casting about for an alternative, Livingston discovered that it had one of the best wind regimes in America.

Town planners took the cue. As an initial step in demonstrating the feasibility of wind development in the area, the town built and began operating the first municipally-owned wind farm in the country.

Then, detailed meteorological work was commissioned that revealed an average windspeed of 16 mph, rather than 14 mph, the figure which earlier data had established. This was not insignificant. Windpower varies as the cube of the windspeed. This extra 2 mph increased the available power by a full 40 percent.



Kent and Dona Dannen

Wind generators near Boulder, Colorado

Without tax credits to rival California's, the payback on wind machines in Livingston is currently five to seven years. But Community Development Director Ed Stern hopes to convince the Montana state legislature to rectify that. "We hope the next session will enact a credit to encourage renewables," said Stern. "And we intend to demonstrate that we aren't just wishing on a star."

Livingston bench have been leased by various wind farm developers. In addition, Livingston has initiated an ambitious outreach program to lure wind turbine manufacturers to the area. "Why not?" said Stern. "Why just out back we've got both I-90 and the railroad."

Recently, Stern has had discussions with a "large multinational firm with an easily recognizable name" about the possibilities of this company building a manufacturing plant in Livingston. "Until just a few years ago," says Stern, "the wind was always something of a joke around here. But now, we have seen the elephant, and hope to bring it home.

—James Udall

A brief, but windy, history

Blowing wind and flowing water powered the ancient world. These two forces were, said the *Oxford Short History of Technology*, "the important prime movers of early times."

From the historical viewpoint, it is clear that all fuel sources pass through a transitional period when they are deemed uneconomic. But with regard to the wind, the current question is not whether the wind will become economic, but rather, when it will become economic again.

Mankind's milking of the wind began almost five thousand years ago with the first Egyptian sailing ships. By 1700 B.C., windmills were common enough that the Babylonian Emperor Hammurabi contemplated using them in his ambitious irrigation schemes.

In 1400 A.D., Pope Celestine III thought so much of the wind that he proclaimed that he owned it. Everyone, Celestine said, should feel free to use his wind—for a price.

By 1750, there were 6,000 windmills at work in Holland reclaiming the lowlands from the sea. And 150 years later, when American inventors went to their drafting tables to design a windmill that would work on the Great Plains, they consulted the theoretical underpinnings of windmill technology, first collated in a report given to the English Royal Society by John Smeaton, in 1759.

The subsequent American demand for the machines was so great that less than 50 years ago there were six million windmills at work here in the United States. but then the Roosevilt administration brought in the Rural Electrification Administration to provide power to rural America. It took 20 years to string the lines that wired the nation, but when that task was complete, federally subsidized power rang the death knell for the U.S. wind industry.

During the decades that the REA was building its empire, wind power hung on for awhile longer. A giant 1.25 megawatt machine was erected on a ridge in Vermont during World War II. Unfortunately, a catastrophic failure in 1945 sent one of the 90-foot blades 750 feet down the ridgeline. This well publicized collapse ensured that the windmill on Grandpa's Knob would never run again.

The official case for the wind was perhaps last made by an unnamed assistant secretary of the interior, quoted in Wilson Clark's book, *Energy for Survival*. "Wind energy is inexhaustible." the man said in 1951. "Petroleum conservation has long been one of our basic national policies and the saving of oil is particularly urgent in times of national emergency such as the present war in Korea." But this was a voice in a vacuum, nuclear energy was on the horizon and it would be "too cheap to meter."

Now in 1982 things have changed. Since 1976, no new nuclear plants have been ordered and dozens have been cancelled. Wood, in fact, is now supplying a greater percentage of the nation's energy than nuclear power. and although photovoltaic cells are still 10 times as expensive a source of electricity than conventional fuels, kilowatts from the wind are within pennies of being competitive with all other sources of electricity.

Nonetheless, except for a few states (see related story), the nation seems oblivious to the opportunity. Unfortunately, as Clark said, "the shortsighted reasoning employed in the world's decision making today doesn't approximate the real cost to society of any form of energy—fossil fuels, nuclear, wind or solar."

Nowhere is this clearer than in current energy policy. The oil industry continues to benefit—as it has for decades—from a generous oil depletion allowance. The nuclear industry has been seeded with $17 billion in federal funds. The Synthetic Fuels Corporation is presently hoarding $16 billion which will be spent in support of synthetic fuels, even as proposed oil shale plants go belly up in droves.

Meanwhile, what has been the nation's support for the wind? The Carter administration's last budget, in 1980, funded the federal wind development program to the tune of $75 million. Reagan chopped that in half during his first year, slashed it again this year, and has proposed a wind budget for 1983 of $5 million, or about half that which the nation will spend next year on predator control.

Nonetheless, despite the oil glut, the recession, the nation's preference for fossil fuels and exotic technologies, people in the wind industry remain optimistic. "Wind will be stronger in 20 years than it is now," says Jay Carter, Jr., of Carter Wind Systems. "Stronger in 50 than in 20. There's five to 10 percent of the nation's energy blowing around free out there, and though the utilities right now have a wait-and-see attitude, they'll soon be scrambling all over themselves to get every part of it."

—James Udall

Copper...

(continued from page 7)

extended elbows and forearms from the searing heat. Near the bottom of the gentle hill where the shops and bars thin out, drivers execute dramatic U-turns and continue with their cruise.

The door is open and business appears brisk inside Pin's Bar and Taco House. Even early in the afternoon Pins, the Sportsman and the other Main Street hangouts can be rough.

Despite the hardships of joblessness, Arizona's 12,000 unemployed copper miners do not blame the American mining companies that issued the paychecks or the multinational oil companies that, more often than not these days, exercise ultimate control over the mining company. The villains are the foreign governments in Peru or Chile or Zambia or Zaire, which have nationalized the mines and kept them open despite the falling prices, more for political expediency than profits.

The analogy between America's copper and auto industries is too obvious to be ignored. Both are caught in the shift from the old guard, heavy industry economic base to the high technology and sevice sectors. Both face stiff foreign competition. And both have a limited prospect of recovery from the recession.

If Chase Creek Street was in any town other than Clifton, Arizona, real estate developers would have long since restored its crumbling collection of 80-year-old buildings. Tourists would wander along the thirteen foot wide street eating and drinking and browsing in what were once the shops and saloons of one of America's most prosperous and productive copper mining towns.

In 1900, the Clifton Meat Market brought a shipment of fresh oysters in from Homer, Louisiana, every Friday. The First Chance Saloon offered "the finest of wines, liquors and cigars kept constantly in stock." At his gents' furnishings store Henry Katz sold a pair of men's Amigos, "the best shoe ever known," for $3.00.

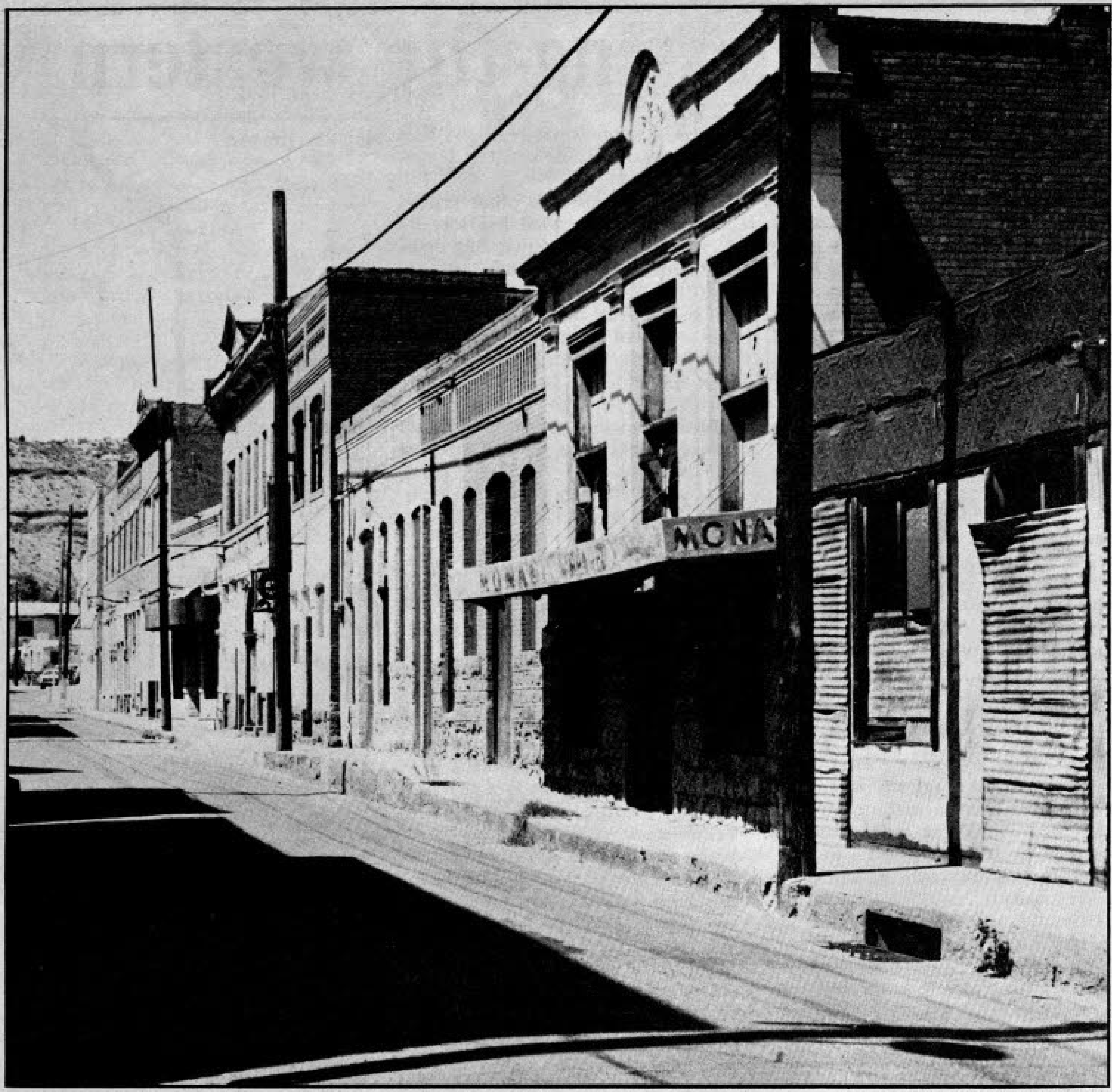
Clifton's dance hall girls, faro and poker games were as abundant as the copper which attracted them. Atop the cliffs two thousand feet above Chase Creek Street outcrops of green copper carbonate sparkled in the turn of the century sun.

When the Phelps Dodge Corporation shut down its Clifton-Morenci operations on Sunday, April 18, 1982, 2,000 of Clifton's people were thrown out of work.By the middle of the summer Greenlee County unemployment had reached 57.4 percent.

"The county's major source of revenue is sales tax, mostly from copper sales," said Greenlee County Administrator Dave Perkins. "In good times that gives us more than enough to complete our budget."

In bad times such as these, it saddles the county with a projected $900,0000 deficit and forces county employees to work a 32-hour week. It kindles talk of looking to Arizona's legislature for financial relief. It limits the five-man Clifton Police Department to 50 miles of driving per shift. It prevents necessary repairs to be made to the town's leaky public swimming pool, which remained empty through the hundred degree heat of the summer.

It was a Wednesday, April 7, when Phelps Dodge announced the Clifton-Morenci shutdown. The men who made their livings in the reduction works and the open pit mine were given letters telling them what they had to look forward to.



Paul Talbot

Chase Creek Street, Clifton, Arizona

The analogy between America's copper and automobile industries is too obvious to be ignored.

"Vacation pay will be paid to laid-off employees as soon as it can be calculated by the payroll department...

"Unemployment Benefit Plan: The weekly benefit payable to an eligible employee under the Phelps Dodge U.B. plan is $50 a week for 26 weeks and $90 per week for the following 26 weeks...

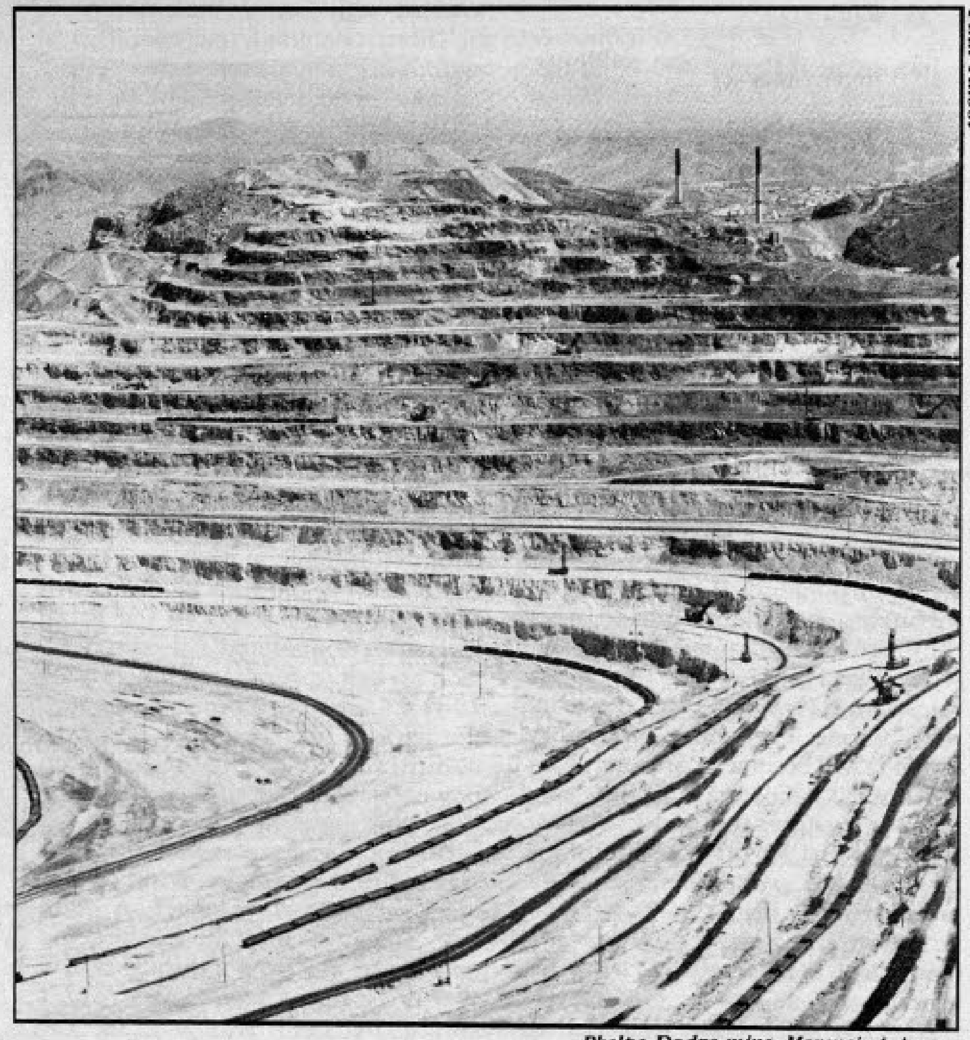
"Arizona State Unemployment Insurance: Arrangements have been made with the Department of Economic Security to process applications during the week of April 19 at the Morenci Club. Currently the benefit is $95 per week...

"Payments For Company Housing: The company is establishing a special provision for those laid-off employees who live in company-owned houses...

"Store Credit: The management of the Phelps Dodge Mercantile Company does not want to create a hardship for any family, but for its own survival it cannot extend unlimited amounts of credit..."

It is the Friday before Labor Day in the Phelps Dodge company store. Beer, steak and charcoal are all on sale but the majority of the shopping carts being pushed around are filling up with more modest staples. Many of the women of Clifton and Morenci have their unemployed husbands in tow. The men are softly chatting with one another in the aisles.

Down the street, the company theatre is closed but the bowling alley is still open. So is the company-owned Morenci Motel where more than the usual number of Phelps Dodge executives from out of town



Paul Talbot

Phelps Dodge mine, Morenci, Arizona

have been staying.

When they eat in the motel's dining room they are temporarily insulated from their industry's problems. There are no windows in the big, bare dining room for them to stare out.

There are no reminders. Smoke no longer billows from the two stacks a mile up the road at the reduction works.

Past the plant site route 666 plunges through a short tunnel and proceeds to wind up the side of a mountain. To the right are scatterings of weathered tombstones, all that remain of the original site of Morenci.

In 1937 the people of Morenci were told to pack up and move. Six weeks later the town was torn down and excavation began on the open

Copper...

pit. Today the pit stretches for more than a mile and a half from rim to farthest rim. Its benches are carved 50 feet high. Twelve-car trains can roll along 95 miles of track. Hundred ton capacity trucks and freight cars can be loaded with electric shovels whose buckets can be stuffed with up to 22 cubic yards of rock.

The holes which are drilled into the side of the pit are at least a foot in diameter, large enough to handle a half ton, even a ton of explosives. A typical blast will crack open the earth and loosen more than 200,000 tons of rock.

Since the Morenci open pit mine went into production 40 years ago more than 1.75 billion tons of material has been hauled out of it and close to 700 million tons of sulfide copper has been processed.

Arizona's governor flew into Clifton-Morenci five days after Phelps Dodge announced it was shutting down. Democrat Bruce Babbitt told the workers not to expect to return to their jobs by the first of June, a possibility the company had raised. Babbitt told them he figured the mine would stay closed until fall.

"Excessively pessimistic" is how Phelps Dodge Clifton-Morenci operations manager John Bolles branded the governor's comments. "The layoff," he said in April, "will not last that long."

What should the company be telling its people?

"We, unfortunately, don't have a lot to tell them that's specific," said Phelps Dodge chairman George Munroe. "We have tried to keep them advised as to how things look, and we have tried to keep rumors from getting started, but that's pretty hard to do."

As corporate policy, Munroe prefers to have his people on the front lines do the talking. He feels Phelps Dodge employees and leaders in company towns such as Clifton-Morenci "are used to dealing with local managers and getting their information that way."

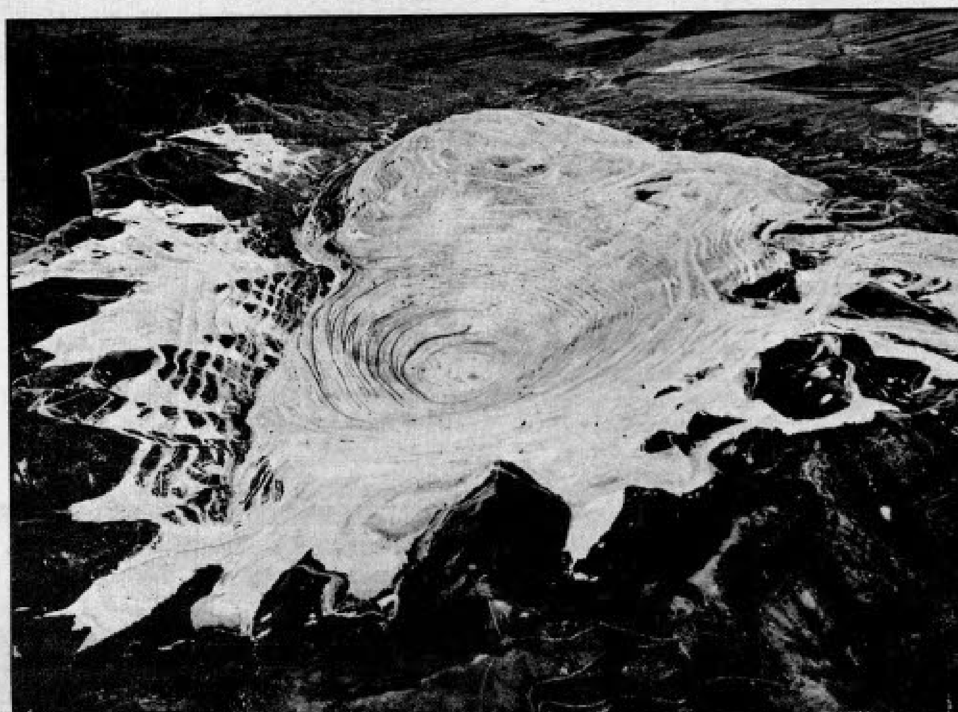
Early in September, Phelps Dodge recalled 1,450 of its laid-off employees to Morenci. On September 17, Standard Oil Company (Indiana) announced it was closing its Cyprus Pima mining operations as of October 1, "because of the continuing slump in the world copper market." The action resulted in the layoff of 208 of the mine's 300 employees. The closure is for an "indefinite period of time."

‡‡‡‡‡

Paul Talbot is a freelance writer living in Chandler, Arizona and news director for radio station KZZP in Phoenix.

COPPER DEPRESSION
Utah

by Jess Funk


Don Green/Kennecott Minerals

Bingham mine, Utah

Over 2,000 persons once employed by Utah's two copper producers, Kennecott Minerals Company Utah Copper Division and ARCO's Anaconda Minerals Company are out of work and Anaconda recently announced it is shutting down its Carr Fork mining operation near Tooele, Utah, in the near future.

In addition Kennecott, while it continues to operate, is losing $30-40 million every three months, according to one source.

On the brighter side, Kennecott's open pit operation at the huge Bingham Canyon mine continues to employ ever 5,000 persons in management and labor and is producing copper at the same level as before the layoffs began earlier this year.

Given the worldwide depression in the copper industry, there has been some speculation in Utah about Kennecott shutting down entirely and what impact that would have on the state's economy.

Last spring when rumors of additional layoffs and a possible shutdown started circulating Utah Gov. Scott Matheson (D) met with corporate officials in Cleveland to learn their plans. Sohio assured the governor that the Utah operation would not close and that Sohio would invest $1 billion to modernize the aging ore concentrator at Bingham along with other parts of the mining complex.

In spite of Sohio's assurance the governor directed the Utah State Planning Office to study the impact of a total layoff. At the same time the governor set up a special task force to make recommendations about retraining those workers already laid off.

"It could be another Detroit," said Brad Barber, staff economist with the state planning office. "If the remaining 5,000 or so workers at Kennecott were laid off, unemployment in Utah could be in the 11 percent to 12 percent range and exceed the national average," Barber said.

Barber was involved in the study for the governor which, he said, shows employees in the state's mining sector earn an average of close to $500 per week. When Kennecott employment was at 7,400 persons the company's annual payroll was worth $250 million, its employees paid $8 million a year in state income tax and the company's tax bill was $27.4 million in 1980. Currently the company is employing roughly two-thirds as many people and so its contrbution to the state economy would be reduced by a like amount.

For each job at Kennecott the company estimated it generates three and one-half elsewhere in the state economy. Another source said the factor is two and a half and Barber said it is two jobs. Taking the most conservative figure the layoff still translates into a loss of around 5,000 additional jobs in the state.

As the state's largest industrial complex, the Utah Copper Division is also one of the biggest industrial consumers of materials, supplies and energy in the state.

Despite losses of at least $10 million a month, Kennecott's Utah Division continues to operate for two reasons, according to Ken Hochstetler, the company's director of public affairs. For one thing, he said, the mine produces by-products—gold, silver and other minerals— which can be sold at a profit, helping to defray some of the losses in copper. Further, because the operation is so large, economies of scale dictate that it is cheaper for the mining operation to keep running and take some losses now rather than shutting down for a period of time and then absorbing the high cost of starting up again. No matter what the company does, it has certain fixed costs it must pay, Hochstetler said.

Hochstetler said the company isn't happy about the cutbacks it made, but that things are operating more efficiently both in management and labor. The same amount of copper is being produced by fewer people because of efficiency measures, he said. Productivity in the copper industry is up 17 percent.

Labor officials in Utah aren't happy about the cutbacks either but they are taking what they see as a pragmatic position. Given the national recession, the concommitent depression in the copper industry and the presence of cheap foreign copper in the marketplace, it is fortunate that the Bingham mine is open and their remaining membership is working.

However, union leaders also see management making a mistake by cutting back so severely on preventive maintenance at the Kennecott works. As the company continues to produce copper, it will have to do the major maintenance work it is ignoring now and it will cost more later, they said.

Union members will gradually be called back to work, something the different labor hiring halls say is already happening on a small scale.

One economist at the University of Utah said that, because of the cost of shutting down in cold weather, it is even more unlikely that the Kennecott mine will be closed at any time soon.

There is unanimity among those reviewing the Utah situation that the recovery in the copper industry will be slow. But, as the national economy warms up so will copper sales. When the recovery comes, the call back to work will be gradual and many of those who are laid off will never be re-employed in the copper industry.

Workers waiting for the recall are collecting unemployment, which has been extended an additional 10 weeks. One union local has set up a food bank for the families of unemployed workers and those still working have been contributing to it with commodities and cash. Supplies haven't been meeting the need, but the local hopes it can stretch things at least through the Christmas season.

Job retraining and relocation hasn't occurred, the union said, because the state doesn't have the resources and the federal government has cut back on these programs.

The recent acquisition of the Utah copper properties by large oil companies has added a new dimension to the situation in the state. Kennecott was purchased by Sohio last year for $1.8 billion at $61 a share—more than twice the going price at the time. Anaconda was purchased by Atlantic Richfield in 1978. Both companies wanted to diversify in a primary industry not related to energy.

The new ownership of mining properties by these large oil companies is seen as something of mixed blessing, especially in the labor ranks. The new parent companies have huge oil profits to put into modernization and expansion, something which has already happened. The Anaconda venture at Carr Fork is an ambitious project using unproven mining techniques and it is doubtful it could have happened without substantial backing, one local economist said.

Kennecott had reached its debt limit and probably could not have generated the capital needed to rejuvenate its physical plant. Sohio had the money needed to upgrade the facilities. More importantly it had the ability to absorb the tremendous losses the Utah Division is now experiencing. Without Sohio backing, it is likely Kennecott would be closed by now, according to labor officials.

Sohio will soon complete its study of the proposed $1 billion update of facilities. The company is also looking seriously at developing underground mining at the Bingham site.

Kennecott was once an independent company with close ties to the Utah community. As a good neighbor it was seen as responsive to local needs. With ownership now further removed it remains to be seen how the new arrangement will work out in terms of community relationships and in things like labor contract negotiations.

While the Anaconda mine at Carr Fork still is unproven, the Kennecott Bingham mine is a strong entity. Company officials claim there are 16 billion tons of copper reserves still to be mined, enough to continue between 60 and 80 years at the present level of productivity.

Short of a much worse national economy the Utah concensus seems to be the big pit will stay open indefinitely. As one veteran union official said, "There is plenty of life in the old hole and we're going to dig it out."

‡‡‡‡

Jess Funk is a Salt Lake City-based freelance writer.

BULLETIN BOARD

RATING PHOTOVOLTAICS

The Dept. of Energy's Solar Energy Research Institute has issued a document that provides a basis for design, use and testing of photovoltaic energy systems. This updated issue replaces interim performance criteria published in 1981. *Performance Criteria for Photovoltaic Energy Systems*, developed in response to the Photovoltaic Research, Development and Demonstration Act of 1978, costs $14.50 for volume 1 (criteria) and $17.50 for volume 2 (test methods) and is available from SERI, Document Distribution Service, 1617 Cole Blvd., Golden, Colo. 80401. Specify report no. SERI/TR-214-1567 on orders.

THE TOUGHEST CHALLENGE

The Colorado Outward Bound School will take on public land use planning in the intermountain region of Utah and Colorado in a course to be offered in 1983. In exploring the complex land planning controversy, the Western Wilderness Program will feature seminars with public land managers, corporate executives, Indian leaders and local people as well as visits to coal and uranium strip mines. The program runs for 60 days and is available for up to 12 quarter credits. For more information write to the Colorado Outward Bound School, 945 Pennsylvania, Dept. WWP-3, Denver, Colo. 80203.

TO SOD OR NOT TO SOD

"Sodding Native Grasslands for Mined Land Reclamation in the Northern Great Plains" discusses the use of sodding to reclaim problem sites. Published as part of the Colorado School of Mines' bi-monthly Mineral and Resources series, the report costs $2.50 and may be ordered from the Colorado School of Mines Press, Publications Center, Golden, Colo. 80401.

INDIAN ENERGY MEETING

The 1982 annual meeting of the Council of Energy Resource Tribes will be held Nov. 18-19 in Denver, Colo. "Indian Energy Development in the New Economic and Legislative Environment" is the theme of this year's meeting. Recent changes in government policy and marketing of Indian energy resources will be discussed. Registration is $15. For more information contact Pete Segall, Council of Energy Resource Tribes, 1140 Connecticut Ave. N.W., Suite 310, Washington, D.C. 20036 or call (202) 887-9155.

STATE OF THE ENVIRONMENT

The Conservation Foundation has published a 439-page book entitled *State of the Environment 1982*. The book covers the entire spectrum of environmental issues from acid rain to hazardous waste disposal. It discusses the effectiveness of pollution control programs, trends in air and water quality and the Reagan administration's environmental record. Copies of the book cost $16.50 and may be ordered from the Conservation Foundation, 1717 Massachusetts Ave., N.W., Washington D.C. 20036 or call (202) 797-4300.

MT. EMMONS FINAL EIS

The final environmental impact statement for the Mt. Emmons Mining Project is available from the U.S. Forest Service. Amax, Inc. proposed the project, located in Gunnison County, Colo., in 1979 but must now modify their operating plan to comply with the findings of the final EIS. To obtain a copy of the final EIS or for more information contact the Mt. Emmons Project Leader, 216 N. Main St., Gunnison, Colo 81230 or call (303) 641-0471.

HOW TO BE HEARD

"How to be Heard," a training course in media skills will be held Nov. 12-14 in Seattle, Wash. Cosponsored by the Metrocenter YMCA and the Northern Rockies Action Group, the course is designed to increase public relations skills among citizen groups. Writing news releases, producing shows on cable TV and being interviewed are topics that will be covered. Registration is $125. For more information contact Stephen Silha or Mary Judd at (206) 382-5013 or Bruce Ballenger at (406) 442-6615.

TRIBAL ADMINISTRATION DEGREE

The University of New Mexico is developing a program to improve graduate-level education for American Indian students by establishing a M.A. program in Tribal Administration. Emphasis will be placed on financial management, health care administration, and energy and environmental management. Spring semester admission deadline is Dec. 15. For more information contact T. Zane Reeves, Director Public Administration Division, University of New Mexico, Albuquerque, N.M. 87131 or call (505) 277-3312.

ISRAEL ENERGY TOUR

Jordan College is sponsoring an "Energy Tour of Israel," Feb. 17, 1983. Israel is the world's leader in the use of alternative energies such as biomass and solar. The tour will visit alternate energy installations and the Israel Institute of Technology, as well as explore the country's historical sites. The tour costs $1,395. For more information contact Danette Bailey, 360 W. Pine St., Cedar Springs, Mich. 49319 or call (616) 696-1180.

THE WAY WE WERE

The Energy Decade 1970-1980, a 550-page book that documents global energy trends during the 1970's contains full-color charts and graphs on energy consumption, reserves, imports and exports for over 100 countries. Copies cost $125, plus $6 for postage, and may be ordered from McGraw-Hill Publications, Platt's Oilgrams/Coal Week, Dept. F, 457 National Press Bldg., Washington, D.C. 20045 or call (202) 624-7558.

MINING DIRECTORY

The first edition of *Hart's Rocky Mountain Mining Directory* lists 8,000 mining industry-related companies in 11 states and contains detailed descriptions of 1,400 mining and milling operations. The directory costs $35 and is available from Hart Publications, Inc., P.O. Box 1917, Denver, Colo. 80201, or call (303) 892-1164.

COLORFUL USA

A "Digital Terrain Map of the United States" has been published by the U.S. Geological Survey. The map, which depicts the topography of the lower 48, is color coded to show elevation differences. The map costs $2.50 and may be purchased from the Western Distribution Branch, USGS, P.O. Box 25286, Federal Center, Denver, Colo. 80225. Orders must include the map number I-1318 and checks or money orders payable to the USGS.

SOLAR CATALOG

The "MASEC Passive Solar Products Catalog" is now available through NRG Products, Inc. The catalog contains descriptions of 340 passive solar products. The catalog costs $31.90 and may be ordered from NRG Products, Inc., 1723 W. Howard St., Evanston, Ill. 60202, or call (312) 328-0003.

HABITAT IMPROVEMENT

The Cooperative Extension Service at Cornell University has published a 40-page booklet designed to help landowners improve wildlife habitat on private land. The booklet "Enhancement of Wildlife Habitat on Private Lands" costs $3.95 and is available from Cornell University Distribution Center-WM, 7 Research Park, Ithaca, N.Y. 14850.

FORT LARAMIE BOOK

The University of Nebraska has republished a book entitled *Fort Laramie and the Sioux*. Originally printed in 1967, the book offers a detailed account of Fort Laramie's (Wyo.) role in 19th century American history. Copies cost $8.95 and may be purchased from the Fort Laramie Historical Association, Fort Laramie, Wyo. 82212, or call (307) 837-2221.

CLASSIFIED

LEARN HOW the sun can heat your water. Send $1 for SUN's special DHW issue. SUN, Box 3100, Estes Park, CO 80517.

APPLICATIONS FOR the winter High Country News internship will be accepted through December 1. This non-paid position would begin sometime in January and last at least three months. Interns have both editorial and production responsibilities. Interest in natural resource issues is a plus (so is a sense of humor). Send letters of interest, resume and clips to *HCN*, Box K, Lander, Wyoming 82520.

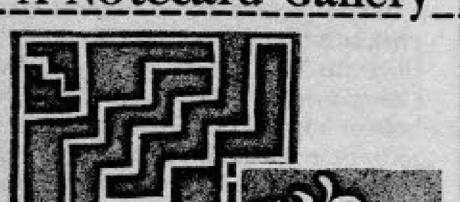
PROGRAM DIRECTOR: TETON SCIENCE SCHOOL. A non-profit, educational institution within Grand Teton National Park offering year round natural history and field biology programs for 5th graders through adults on a residential as well as non-residential basis. *Qualifications*: Academic bacground (advanced degree preferred) and teaching experience in an area related to field biology. Practical experience in administrating field oriented programs for a variety of age groups, evaluating staff, developing programs, long range planning and some marketing. Maturity in dealing with adults and supervisory staff important. Candidates over 30 preferred. Begin February, 1983. *Benefits*: Salary commensurate with experience. Log cabin and board included. Range: $800-$1,000/month. Send resume including references and cover letter to: Teton Science School, Box 68, Kelly, WY 83011.

WOODBURNERS, FIGHT CHIMNEY FIRE HAZARD with regular maintenance and the added safety of a Chimfex(tm) extinguisher. Stops chimney fires with no water damage. Used by many professional fire departments. Only $19.95, includes shipping, or write for free information. Cordwood Enterprises, Box 309, Mills, Wyoming 82644.

MONTANA PUBLISHER NEEDS good quality color transparencies of any National Forest areas adjacent to Yellowstone National Park. Contact Rick Reese, c/o Montana Magazine, Box 5630, Helena, Montana 59601.

CLASSIFIED ADS cost 20¢ per word, prepaid, $5 minimum. Rates vary for display advertising; write *HCN*, Box K, Lander, Wyoming 82520 or call (307) 332-6970 for further information.

A Notecard Gallery

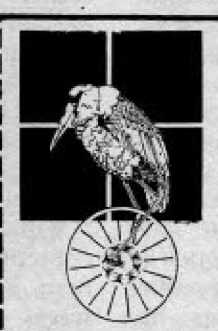


PETROGLYPHS
by Kathy Bogan

10 card set (5 of each design); brown ink on sandstone-colored paper.

CHRISTMAS CRITTERS
by Sylvia Long

10 card set; 5 cards green ink on white; five cards of red ink on white.



STORK
by Sylvia Long

10 card set; black ink on white paper.

DINWOODY CANYON
by Hannah Hinchman

10 card set; black ink on pale grey paper.

Please send me the following set(s) of notecards:

___set(s) PETROGLYPHS @ $4.00 $____

___set(s) DINWOODY CANYON @ $4.00 $____

___set(s) STORK @ $6.00 $____

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Wyoming residents add 3% sales tax $____

Postage (75¢/set) $____

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Please send to High Country News, Box K, Lander, Wyo. 82520.

OPINION

Regulatory reform goes awry

by Russell Boulding

One of the Reagan administration's battle cries in its assault against government bureaucracy has been "regulatory reform." Burdensome, unnecessary and inflexible government regulations, we are told, have been stifling business and burdening consumers with higher prices. The ferocity and speed with which this adminstration has attacked the body of environmental statutes and regulations that has developed during the last fifteen years has been stunning.

GUEST EDITORIAL

The surface coal mining rules promulgated under the Surface Mining Control and Reclamation Act of 1977 are a case in point. The Office of Surface Mining has issued a steady stream of proposed changes to the rules. Each piecemeal change is supposed to eliminate unnecessary rules and give regulatory agencies and coal companies greater flexibility without endangering environmental protection. When forced by the National Wildlife Federation to prepare an environmental impact statement on the cummulative impacts of the hundreds of changes that were being made, OSM grudgingly admitted that about a dozen of the proposed changes might damage the environment. In contrast, environmental groups have identified over two hundred specific changes that they feel endanger the environment.

Something has gone wrong with regulatory reform. The problem stems from wrong-headed assumptions and OSM's failure to remain true to its stated philosophical approach to regulation. The need for reform is based on the supposition that the coal industry is overregulated. This overregulation results from "unnecessary" rules that serve no useful function, and "inflexible" rules that force coal operators to spend more money than is needed to achieve environmental protection goals. The first problem is a red herring and the second is a sheep in wolf's clothing. All rules are made because at least one party with a stake in the rule *and* the regulatory agency feels that it is needed to deal with a real or perceived problem. The rule may not be the best response to the problem, but the rulemaking process ensures that there is rarely, if ever, a clear-cut case of unnecessary regulation.

I have yet to find a good example of an inflexible regulation that actually increased the cost of mining coal. If a coal company can convince a regulatory agency there is a cheaper alternative that provides the same level of environmental protection, the alternative is allowed. On the other hand, examples where regulatory agencies have failed to enforce the most basic environmental protection rules are common. A study of strip mine enforcement in Tennessee showed that the state Division of Surface Mining failed to take action on serious infractions of mining rules in over two-thirds of the mines that were cited for violations by OSM during the Carter administration. A study by the Public Lands Institute in Denver found similar results in five western states.

OSM has taken the scissors to virtually all of the design standards that specify how mining should be conducted to protect the environment, and replaced them with more general performance standards. Design standards are easy to monitor in the field and provide a high assurance that environmental protection goals will be achieved. Their disadvantage is that sometimes alternative methods may be able to produce the same level of protection at lower cost. Performance standards make for simpler rules. The basic environmental objective is stated and anything goes as long as performance is achieved. However, there is less certainty that performance will be achieved—what if the coal operator tries a cheaper method and it doesn't work? Also compliance is more difficult to monitor.

For performance standards to provide the same level of environmental protection as design standards, several compensating changes are essential. There must be more rigorous review of mine permit applications to ensure that mines are well designed. Citizen participation in the regulatory process should increase to ensure that increased flexibility is not abused, and more stringent monitoring and enforcement is needed once mining begins. If design standards are discarded without such counterbalancing changes, we may see again the bad old days when coal was mined without regard for the human and environmental costs.

OSM's proposed rule changes are even worse because in its zeal to "simplify" the rules, existing rules for permit review, citizen participation, monitoring and enforcement are actually being weakened. OSM has provided no economic justification for weakening the rules for the simple reason tht the environmental costs of the proposed changes would increase substantially, while benefits to consumers would be minimal. Public opinion polls have repeatedly shown that Reagan's election victory was not a mandate to despoil the environment. Regulatory reform is doing just that, and concerned citizens must redouble their efforts to get this message across to their elected officials.

‡‡‡‡‡

Russell Boulding, an Indiana-based freelance environmental consultant, has been working with National Wildlife Federation on a lawsuit challenging OSM rule changes.

LETTERS

WALLOP BOOSTED FALCONS

Dear *HCN*,

Over the course of the Wyoming Senate campaign, some leaders of the environmental movement have criticized Malcolm Wallop's (R) environmental record, inferring that he somehow lacks concern for environmental values.

I, for one, think there are some people out there who are either misinformed or misrepresenting Senator Wallop's record, and I would like to bring to the attention of these "environmentalists" something they should know, but have seemingly been unable to uncover in their dirt digging.

Some years ago several subspecies of peregrine falcon were listed by the U.S. Fish and Wildlife Service as endangered under the Endangered Species Act. These subspecies were having great difficulty reproducing in the wild due to DDT and other problems, and a prime factor keeping the birds from extinction was the work of falconers, other raptor breeders and academia in captive breeding. Falconers, the backbone of all successful breeding projects, had an obvious interest in the falcons and a strong incentive to breed them since they wanted to fly the birds.

However, the federal authorities threw an unfortunate monkey wrench in the works when it suddenly interpreted the Endangered Species Act to say that recreational use of endangered falcons acquired or bred after 1973 was prohibited. They further complicated the picture by deciding that, in order to "protect" the endangered subspecies which often resemble non-endangered subspecies, that not even the post-act non-endangered varieties could be flown.

At any rate, this unfortunate ruling—which was no doubt well-intentioned—had the sorry effect of leaving falconers with little incentive to continue breeding birds which they could not fly.

This situation was described to Wallop in 1977. He promptly and almost singlehandedly went to bat for peregrine falcons, and offered an amendment allowing falconers to fly captively-produced birds which sailed through both the Senate and House and became law.

This amendment reversed the situation and created an incentive for raptor breeders to produce peregrines in captivity. The result has been a dramatic comeback of peregrine falcons. I think it is safe to say that over 1,000 peregrines have been produced and reared in captivity to date in the U.S., and many of these have been released in the wild in order to restore wild populations. I think it is also safe to say had it not been for Wallop's amendment, peregrine falcon populations would be a fraction of what they are today.

If peregrine falcons don't symbolize the environmental movement and what can be done through private and public work to restore endangered species, then I don't know what does. Environmentalists and everyone concerned over wildlife can thank Wallop that there are more peregrines today because of his concern.

P.A.B. Widener, Jr.
Sheridan, Wyoming

WORST STORY

Dear *HCN*,

I count on the *High Country News* for good, precise, accurate reporting of natural resource issues in the Rocky Mountain West that are of concern to me professionally and privately.

I was disappointed to see that in your October 15th issue in the lead article "The Best and Worst of the West in Congress," that you took a bad idea from the *Washington Monthly* and amplified it. A number of the slick magazines and periodicals in Washington do "cutesy columns" in rating members of Congress and rely on innuendo, conjecture and gossip. You normally don't fall into that trap.

I have worked for individual senators and on committee staff for over six years and during the entire time Sen. Malcolm Wallop (R-Wyo.) served time in the Senate. Your article is the first time that I have ever seen him characterized as a "rude and impatient man." He is exactly the opposite, extremely polite and considerate to his colleagues and more importantly, in my estimation, to the public, staff and constituents.

This courtesy extends to all. Take for example, the hearing on the American Conservation Corps. Wallop does not oppose the concept. He does have specific concerns on the House passed bill. The subcommittee had over 34 witnesses for that hearing and a limited period of time to conduct the hearing. Many had come from long distances as had Raymond Burr. Wallop had asked all witnesses to limit their testimony to five minutes. I had personally told all witnesses of the five minute limitation in advance. Burr had gone well over his five minutes when the senator reminded him of the obligation. Burr continued to give his testimony and then summarized. The senator did that with all witnesses. It had nothing to do with pro or con issues of the bill.

Wallop is not an impatient man. He has chaired over 45 hearings in 1982 of the Subcommittee on Public and Reserved Water. His policy of having public hearings on public lands, parks and natural resource issues is a marked contrast to counterpart subcommittees in the House of Representatives where in several congresses hearings were not held on park issues. Wallop had patiently chaired and moved legislation through his Subcommittee and the full committee. He has been very effective in guiding legislation through the Committee on Energy and Natural Resources dealing with reform of the Reclamation Act, with reform of the Mineral Royalty Accounting System, several state and individual wilderness area bills including Wyoming, several measures adding to the national park system and various other land protection measures.

Wallop became chairman of the Subcommittee on Public Lands and Reserved Water in 1982. He started a process of public land workshops in addition to the normal workload of the subcommittee which accounts for one-half of the legislative output of the entire committee. We have seen the results of these workshops in amendments to the National Trails System Act, tax initiatives in other committees, administrative changes by other land managing agencies and the introduction of legislation by Senator Wallop for consideration in the next Congress.

I think the participants of those workshops would classify Wallop as extremely effective. He was able to do these things in spite of a rigorous and demanding schedule as chairman of the Senate Ethics Committee.

Tony Bevinetto
Professional Staff Member
Subcommittee on Public Lands
and Reserved Water
Committee on Energy and
Natural Resources
Washington, D.C.

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LETTERS

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ANDREAS REPLIES

Dear *HCN*,

If we were told that the winner of a race started half-way around the track, we would be offended, and think it unfair. We would not be impressed with such arguments as "Well, he would have won anyway," or "If the others had started at the half-way mark most of them would have lost anyway," or "Well, only one or two start at the half-way mark in each race."

Yet that is the substance of most of the remarks (*HCN*, 10/1/82) of Dave Geible and Lyle and Kathy Jones in opposition to my guest editorial proposing limits to large inheritance (*HCN*, 9/31/82). Large inheritance is exactly like starting a race at the half-way mark, and is just as unfair. People differ in their abilities and motivation, and there will always be winners and losers. All I'm asking for is a fair start.

Steve Andreas
Boulder, Colorado

PAT'S THE BEST

Dear *HCN*,

Whoa up! In your story on the best and worst in Congress (*HCN*, 10/15/82), my hero, Pat Schroeder (D-Colo.), with a whopping rating of 91 (closest competitor has a rating of 79!) isn't even mentioned.

Just because Debbie East has left your staff, you can't start ignoring women. Pat deserves a feature story on how she is clearly the best!

Marge Schlitt
Lincoln, Nebraska

NOT SO SPECIAL

Dear *HCN*,

The issue which you have chosen to call the "Idaho Special Issue" (*HCN*, 9/3/82), is inexplicably silent on two issues that many of us in northern Idaho consider vitally important. The first is the diversion and construction of additional dams on the Kootenai River upstream from Bonners Ferry, Idaho. The second is the impending disappearance of the mountain caribou from Idaho.

I was especially disappointed that no mention was made of the Selkirk mountain caribou. Wildlife biologists now consider the Selkirk caribou the rarest mammal in the contiguous United States. The problem is habitat reduction. Clearcut logging, road construction and powerline corridors seriously threaten the caribou's ability to survive. Although the caribou is listed as "threatened" in Idaho, the federal government does not consider this species endangered. Fewer than 20 animals remain. If the caribou is to be saved, immediate action must be taken—endangered species classification must be given, wilderness or at least roadless status must be given to caribou habitat areas, future development must be reviewed in light of its effect on the survival of the caribou and publications like *High Country News* must continue to make the public aware.

My suggestion, with all due respect, would be to omit articles like Steve Andreas' inverse Sagebrush Rebellion shlock and allow space in a future issue for information and update on the desperate plight of the caribou.

Reuben J. Ellis
Bonners Ferry, Idaho

'Twas six weeks before Christmas

... and all through the West,
Myriad creatures were stirring, they were cold and distressed.
The grizzlies and mule deer and ferrets black-footed
looked in wonder at plunder, and asked: How'd they stood it?

James Watt in his fervor and Big Oil in its zeal
Were increasingly leasing the great commonweal.
The rigs and the draglines arose such a clatter,
We sprang to our typewriters and started to batter.

Out of their beds jump your friends in a panic,
Tear open the mailbox in a state nearly manic,
When what to their wondering eyes should appear
But a sixteen-page paper, with prose fair and clear

On Utah, Wyoming, Montana, New Mex,
On endrin, on Exxon, on shale and BuRec;
On cows, Colorado and overthrust belts;
On ecotage, wetlands, on land trusts and pelts;

On Idaho, tailings, on solar and peat;
On things that you plant and things that you eat;
On smelters, on elk bugles, on gas and more such;
On BLM, EPA, Burford and Gorsuch.

So climb up our ladder: Give your friends a subscription
And the issues will fly full of photos and diction.
To readers and revilers, whom we please or offend:

Merry Christmas to all, and to all *HCN!*

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