

Mining Ranks Growing Thinner as Students Become Fewer



Students at Montana School of Mines attend lecture on use of pilot mill. Some mining schools, which once graduated fifty or more engineers a year, now find only four or five candidates for mining degrees. The industry is becoming concerned over its inability to attract young men.



Prospective mining engineers at University of Arizona College of Mines test efficiency of rock-drilling machine. Many have left this field and turned to rocketry.

ENGINEERS STEER AWAY FROM MINES

Career in Industry Loses Appeal Against Glamour, Pay of Space Fields

By JACK R. RYAN

The future of mining engineering is beginning to look a little shaky, judging from the meager amount of new blood being pumped into the profession.

It's one of the oldest, and certainly among the most basic, of all branches of engineering, charged with the vital task of seeking out and recovering the mineral raw materials of industry and defense.

But in the midst of all the ballyhoo over rocketry and space-age science, mining engineering apparently has lost much of its allure.

This year, throughout the nation, only 208 new mining engineers received their first degrees (usually bachelor of science), according to the Engineering Manpower Commission. That compared with 469 only eight years ago. Total first degrees in all branches of engineering exceeded 35,000 annually in recent years.

It is true that most other engineering branches also posted declines from the levels of the early 1950's, when graduation rolls were swelled by veterans finishing their work under the G. I. Bill. But no branch had anywhere near the drop experienced by mining.

Classes Small

Several of the twenty-nine fully-accredited colleges and universities offering mining degrees graduated only one to six new engineers last June. Some had more professors than graduates. Columbia University here, which once conferred bachelor's degrees on fifty to 100 a year in mining engineering, this spring awarded only five. The School of Mines at Columbia was founded in 1864, was the first of its kind in the United States and is the oldest engineering department at the university.

Why has the profession lost the popularity it once had among the bright young men seeking their fortunes? Engineers, educators and industry executives, asked that question last week in a series of interviews, offered dozens of reasons.

Mining cannot compete just now with the "glamour" fields—rocketry and the advanced chemistry and electronics that support it, they said. The starting salaries may be as high as in other traditional forms of engineering (some young engineers dispute this), but they are still below those being offered in the new nuclear and space-age fields.

Old-Timers' Complain

Some old-timers in the metals industry complained that today's youngsters lacked the venturesome spirit that fired the mining engineers of forty years ago.

"Nowadays all some kids think about is security," said one copper executive. "They used to be more concerned with the chance to strike it rich, of becoming boss of the mine, of making their own way rapidly in the world even if it involved a few risks."

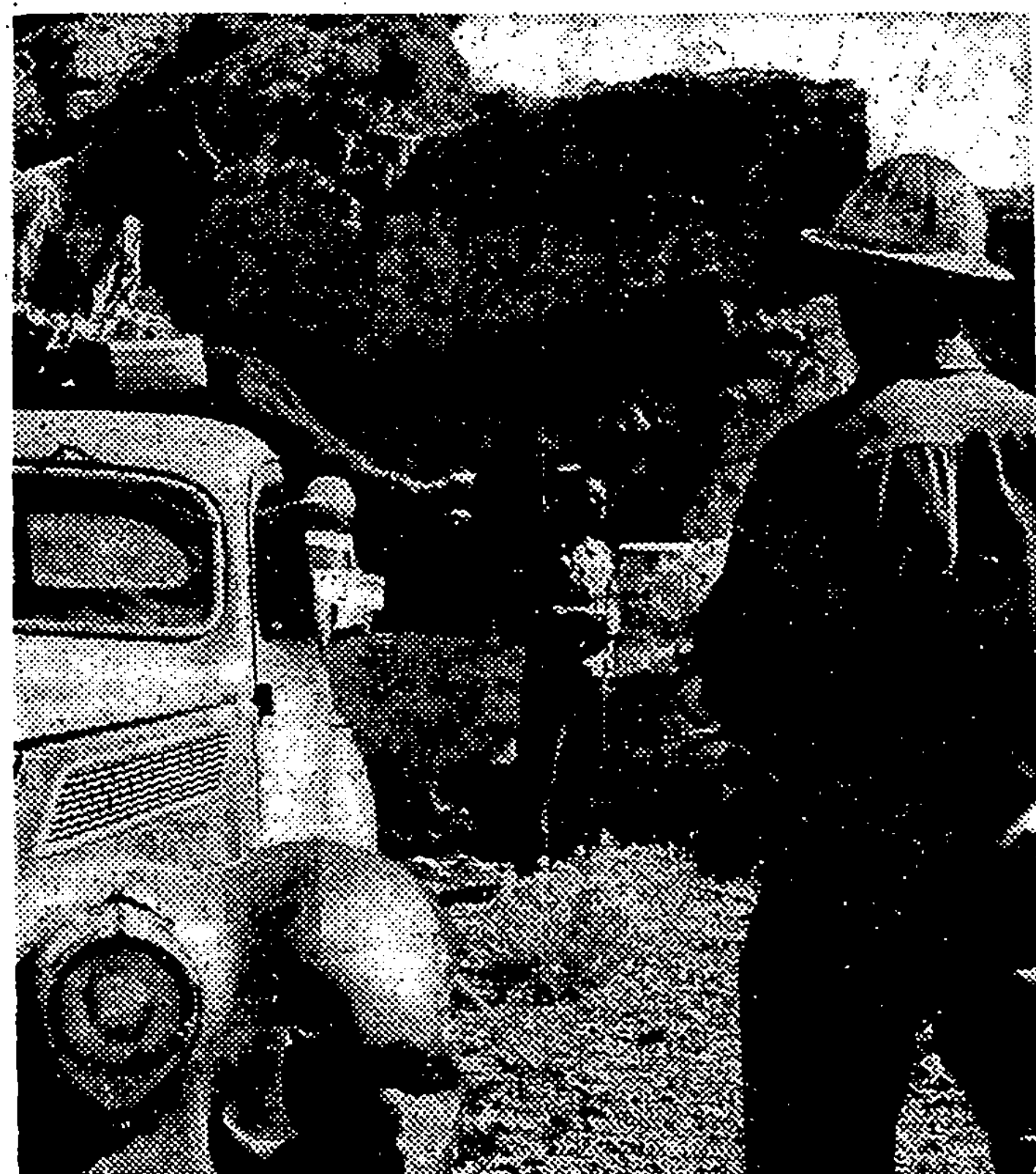
But a younger mining engineer retorted, in a typical comment:

"The kids wouldn't mind being exiled to some lonely mine out in the cactus or the jungle if the rewards were commensurate with the hardship."

"But what usually happens? The new engineer gets stuck with underground surveying or sampling for months or years."

"Only a few companies are doing any real research that would provide challenging, professional work — the kind he could find quickly in aircraft or chemistry, for example. And with so many little mining companies swallowed up by the big ones these days, what are the real chances any more of

Continued on Page 11, Column 6



Montana School of Mines students on a field trip in southwestern Montana. Among complaints of the young men is that jobs are too far away from civilization.

ENGINEERS STEER AWAY FROM MINES

Continued From Page 1

striking it rich or becoming a boy-wonder boss?"

Others said the lack of economic continuity in the profession had discouraged many. They noted that during the recent recession, many mining engineers—and not the newcomers alone—were laid off. If the present widespread strikes in the major nonferrous metals companies continued long, more engineers would be out of jobs, too, they predicted.

"These engineers should be looked on as part of a company's permanent investment," said one who now holds an important editorial post in the field. "In times of strikes or recessions, they should be put to work trying to cut mining costs or reduce safety hazards or doing some other kind of essential research—not just laid off."

William A. Vine, Professor of Mining Engineering at the Montana School of Mines, suggested that many of the young men who were not choosing mining engineering as such were branching off into allied specialties, such as geology, geophysical engineering, petroleum engineering and so on, and were being graduated in those fields.

Supply and Demand

Some mining executives shrug off the problem, say it's one of simple supply and demand: when a real shortage of mining engineers develops, salaries and other incentives will be forced up and students will flock into the profession.

Other observers, pondering the long-range future of the minerals industry, have been voicing increasing concern recently. Who, they ask, is going to provide the nation's metals, mineral chemicals and fuels a decade or two from now when ore bodies have become leaner and deeper and harder to find?

One asking such questions is Roger V. Pierce, a well-known Salt Lake City consulting engineer and a national vice president of the American Institute of Mining, Metallurgical and Petroleum Engineers. He believes that one of these days, the easy-to-mine deposits abroad—being mined for their high-grade ore now, the way ours were thirty-five years ago—will be depleted to the point that leaner ores still available here will be in urgent demand.

"We're not training the boys now for that coming period when we'll need them," he said. "We're not preparing the future minerals engineers to keep up with other industries. We don't stop training army, navy and air force officers just because we're not currently fighting a hot war, do we?"

School Shift Urged

In speeches to engineering and college groups of several states, Mr. Pierce has been urging that the twenty-nine present accredited schools giving mining degrees be consolidated into six or less. These, he says, should be strategically placed so that students could get first-hand training in commercial mining operations, and should be supported financially by the Federal Government and by industry through endowment funds.

"Ninety per cent or more of our mining engineers are coming from state-supported schools, not one of which has enough money to put a first-class faculty on the campus," he contends.

Nathaniel Arbiter, Professor of Mineral Engineering at Columbia, is concerned over what he sees as the dwindling supply of qualified students to conduct research in ore beneficiation and extractive metallurgy. Such research is flourishing abroad, he reports, and is being given massive support by governments in the Communist bloc.

Clyde E. Weed, chairman of the Anaconda Company and himself a mining engineer, said there were still "rare opportunities" for young engineers in his company.

"The kind of young men who will succeed is the kind of fellow who is interested in adventure, not security," he said last week. "He's concerned with creativity, not the comfort of routine. He's a gambler of his energies on the calculated risk. He's capable of living with a quiet confidence and self-sufficiency in remote areas. He delights in the prospect of giving life to barren lands. He wants opportunity in life, not somebody's plan."