



Dr. Brode: Hard times for chemists.

passed demand. I have already been given 750 resumes and I expect the total will hit 2,000 before the week is out."

However bad the current situation may be, Dr. Brode foresees a time when it will be just the opposite. In the 1990's, severe shortages, not just of chemists but of scientists in all fields are expected.

"By the 1990's," says Dr. Brode, "the size of our college-age graduating group will be the same size as it is today, yet the total larger national population and expanded economy will undoubtedly require additional scientific and technical personnel. We will probably have quite a shortage."

Until then he expects a fairly tight job market in scientific fields, although certainly not anywhere near as bad as it is this year in chemistry.

ENGINEERING MANPOWER

Hard times and a union

A large group of California engineers and scientists ushered in a new era for themselves and possibly for their peers across the nation last week when they voted to affiliate with the AFL-CIO. It was believed to be the first time so large a group has ever chosen to enter the giant union's fold en masse.

The 1,140-member Engineers and Scientists of California (ESC) voted overwhelmingly to link up with the professional, office and industrial union part of the AFL-CIO affiliated Marine Engineers Beneficial Association.

"Engineers haven't kept up with the times on salaries or fringe benefits," says Laurence Rodgers, ESC executive director. "In some cases they make less money designing a tool than those tradesmen who eventually use it. We wanted an organization that had some real strength in negotiations and could give us assistance in organizing."

Most of ESC members are electrical and mechanical engineers employed by

the Pacific Gas and Electric Co. The rest comprise a range of scientists and engineers including chemists and physicists from San Francisco Bay area testing laboratories, civil engineers, architectural engineers and surveyors from throughout the northern part of the state.

"Engineers make up the largest group of professional craftsmen in the country," Rodgers points out. "And after its initial taste of success the union has set its sights on organizing this group across the country."

But why did the ESC pick this time to join hands with the AFL-CIO? Why not last year or the year before?

One of the main reasons could be the reverberations from large manpower cutbacks in the aerospace and defense-oriented industries over the past year. While surplus isn't evident in every field, it has hit certain areas and the prospect for the future isn't bright.

"Most companies that traditionally hire a lot of engineers are cutting back and tightening the belt," says Marshall Harris, who runs a large San Francisco engineering employment service. "Companies are no longer interested in the engineer with a couple of years of general experience. The jobs they are filling now are tightly specified and if the man they want isn't around, they just won't hire anyone."

Design engineers have been hardest hit in the slowing market, and the personnel manager from a large West Coast aerospace company tells why:

"Since the end of 1967 we have dropped about 6,500 employees, and about 1,200 were engineers. Most of these were dropped from the hardware and production end of the operation, and only a few from the analytical side. We need the idea men, because in a period like this, it is where your strength lies. It's rather obvious that production is going to lag in the next year, so it's time to really get moving on concepts. With Federal spending cuts, the competition for Government contracts is even keener."

This personnel director said his company's overall manpower forecast for the next year "looks just about like a flat line."

But while there are other instances of large-scale layoffs, they are the exception rather than the rule. Most companies are cutting back through attrition. When an engineer leaves, he simply is not replaced. So instead of engineers dumped into the job market in bucketsfull, it has become a steady trickle.

Another bitter pill for engineers to swallow is the dropping salary. "A lot of companies who relied heavily on Government contracts are now trying to find some commercial spinoff from their

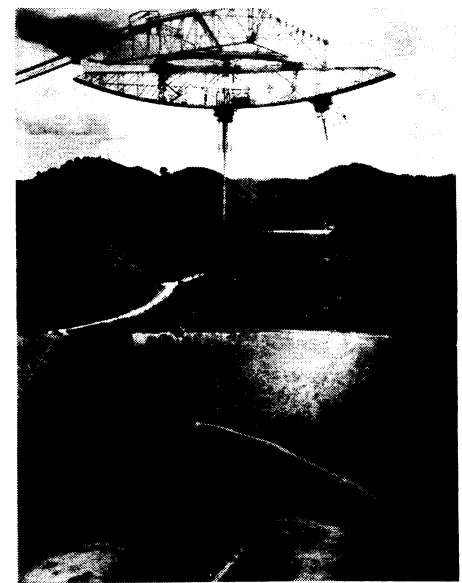
products," says Harris.

"But since the profit on the commercial market doesn't match that made from a Government contract, the engineer is usually hired for a lower salary."

"I have always thought unions were something for the other guy," said one ESC member, "but then I got tossed around hard and had no comeback. Now we'll have some bargaining power."

RADIO ASTRONOMY

Two years and no action



Cornell

Arecibo: Still in need of a facelift.

The idea that neutron stars might exist had been around theoretical astrophysics for a couple of decades, but it was not until radio astronomers discovered and studied pulsars that there were known objects that could seriously be considered to be neutron stars.

"The presently accepted proof of the neutron star state of matter is a fantastic confirmation of the exhilarating reach of theoretical science," says the Ad Hoc Advisory Panel for Large Radio Astronomy Facilities, known as the Dicke panel after its chairman, Dr. Robert H. Dicke of Princeton University.

The Dicke panel cites pulsars, and other successful work by radio astronomers, in its latest plea to the National Science Foundation for money for the construction of new radio telescopes.

The panel first met in 1967 (SN: 9/2/67, p. 225), when it issued a series of recommendations for new radio astronomy construction. It met again this summer and now says: "Two years have passed without the implementation of any of the 1967 recommendations of this panel for the construction of major new radio astronomical telescopes. . . . The facilities for radio astronomy in the