



Ali In London

Muhammad Ali surrounded by press photographers last Thursday when he arrived at the London pavilion for the Charity Premiere of "Freedom Road" in aid of the Cancer Research Fund. The film tells the story of a former slave who returns from the American Civil War and becomes the first black senator of the United States.

UPI Photo

Shortages of Engineers are Likely to Persist in Next Ten Years

ATLANTA, GA. — In the next ten years, shortages of engineers and other high technology graduates are likely to persist both in the nation and in the South, according to a new report from the Southern Regional Education Board (SREB). These manpower shortages may be eased, however, if more high school students take a rigorous set of math courses and if women and blacks shift to the high technology fields.

The SREB report focuses on the relationship between the study of mathematics by high school students and the supply of high technology manpower. "To a considerable extent," the report maintains, "the production of engineers, mathematicians, physical scientists, and computer programmers depends on a strong background in mathematics."

However, women and minorities — who helped

to create the recent boom in higher education enrollments — have not been very inclined to study mathematics in either high school or college. Furthermore, one southern state estimates that only one out of ten of its recent high school graduates has taken trigonometry, the essential pre-calculus course.

The report, entitled *Engineering and High Technology Manpower Shortages: The Connection with Mathematics*, was prepared by SREB economist Eva C. Galambos, who concludes that the present low level of participation in these high school math courses represents a "fundamental constraint" on a rapid expansion of high technology manpower.

In addition, many school districts currently are plagued by shortages of math teachers, due in part to the many better-paying opportunities in other

mathematics graduates elsewhere in the job market. And recent trends in enrollments and degrees make the current shortage of high school math teachers seem likely to continue. In the South, half as many baccalaureate degrees in math were awarded in 1977-78 than just seven years earlier.

The nation's growing concern with industrial productivity and technological achievement is likely to spur an even greater demand for high technology manpower, the report says, mirroring America's reaction to the launch of Sputnik twenty years ago. Yet the traditional source of new scientists and engineers — young, white males — will be in short supply in the coming years. In fact, the absolute number of all high school graduates in 1985 is expected to be 15% lower than ten years

earlier.

In the engineering field, where supply and demand tended to "roller coaster" over the years, enrollments are surging once again. For example, in 1979, junior-year enrollments were 80% greater than in 1973, and some 62,000 to 67,000 new engineering baccalaureates are expected annually in the nation during the Eighties.

Dr. Galambos says that the demand for these engineers should remain strong in the near future, but she questions whether the annual supply of new engineers can be maintained. Many public engineering schools already are at peak capacity, and it is difficult to rapidly shift faculty and other resources to high-demand programs. Indeed, faculty shortages in engineering are already reported. With the starting salaries commanded by engineers there is little incentive for students to pursue graduate study for an academic career.

In the nation and in the South, demand for engineers is expected to outpace supply as the pool of 18-to-21 year olds begins to decline. The many specialists who cross over to engineering from other high technology fields may help fill engineering jobs. But, the overall balance of the nation's technical manpower may be adversely affected because the physical sciences, computer science, and other high technology fields are experiencing shortages of their own. Dr. Galambos suggests that industry may resolve the impending shortage of engineers by shifting "engineering technologists" into engineering positions. Yet such a shift would only produce another shortage in the production and maintenance areas where such technologists are now deployed.

Another possible constraint on the supply of engineers and engineering faculty is that the number of students who constitute the potential supply base

includes a growing enrollment of foreign students, many of whom are expected to return home after receiving their degrees. The SREB report notes that in 1978 in the South, over one-third of all engineering doctorates were awarded to foreign students.

"In short," notes Dr. Galambos, "without deliberate action at all educational levels,

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Comparing food labels can help consumers save money, get better nutrition and stay informed, believes Mrs. Rachel Kinlaw, extension food specialist, North Carolina State University.

Simply reading labels is

important, but careful comparison of several is the real secret of making wise buying choices, because different labels can include different kinds of information. Mrs. Kinlaw explains.

In comparing labels, she

says to look for several types of information — all of which must be accurate.

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