

supersonic transport to be 271 feet long, more than 100 feet longer than any other airlines in the sky at the time. Then it was decided that more passengers would be necessary to help pay for the super-expensive plane, so the aircraft was stretched by 27 feet and its passenger load increased by 41. That 298-foot version got as far as becoming a partial full-scale mockup in the summer of 1966, before the final designs had even been submitted to the Federal Aviation Agency in the SST competition.

By the time the design was submitted, it had grown another eight feet. Now it has been pulled out even farther, to 318 feet—18 feet longer than a football field—following recommendations from the 240-man team of Government and airline representatives which has been studying the design ever since the early stages of competition.

At last, Boeing's engineers seem content to go ahead and build the actual flying prototypes of the SST. Finally, according to Fred A. Maxam, the company's director of SST engineering, Boeing has reached "a very definite fix on the prototype design."

## IMMIGRATION

### New Law Curtails Brain Drain

The United States immigration law to take effect July 1, 1968, may, unexpectedly, throttle the much advertised brain drain. It radically departs from the long-standing procedure of setting quotas for individual nations. Instead, it sets an across-the-board limit of 170,000 immigrants a year and establishes six preference categories for admission to the United States.

Four of the categories apply to relatives of persons already in this country. Two refer to professional and skilled workers, allowing a total of 17,000 persons from each group to enter the U.S. each year on a first-come-first-served basis. As a result, the State Department says, immigration patterns will change dramatically and for the next three or four years the drain of scientific and engineering talent from European countries will be curtailed.

Under the old national quotas system, scientists and skilled laborers from Eastern countries, including India and China, have already added their names to long waiting lists. European scientists, who had no trouble getting visas in the past, now will have to get in line. The line for 17,000 places is already 48,000 persons long. Until scientists from Great Britain, France and other Western nations are in a position to compete actively for professional preference places—if they get in line now it will be at least 1970 before their turn

comes—the bulk of immigrants will come from the four countries that last year lost major numbers of scientists and other professionals to the U.S.: China, 4,454; India, 3,224; Philippines, 2,690 and Korea, 1,087.

Indian Minister of Education Mulla-vasal Raja Ram says he does not consider the influx of Indian doctors and scientists into the U.S. a serious problem because "90 percent return home. The 2,000 or so who have stayed permanently are just a drop in the bucket."

From the British Embassy, scientific consultant Reginald Voysey says his country is not as concerned about its loss of professionals as it is about the migration of skilled workers—tool operators, draftsmen, etc.—who are vital to Britain's struggling economy. The new

## FROM SWEDEN

### Hospitals in Crisis

A triple crisis is hitting Sweden's hospital service. There is excessive investment in buildings, operating costs are soaring and there are too few doctors.

Sweden has about 900 hospitals for 7.8 million people, or 16 beds per 1,000 people, compared with 9.1 in the United States, and 9.8 in Britain. This year some \$200 million will be invested in hospital building, six times the 1950 figure. By 1970 it will be 50 percent higher again.

At the same time running costs have now reached annually about a third of investment costs. Average costs to the community of a bed per day is \$33, and up to \$100 in some intensive care wards. Hospital running costs rose 17 percent in 1965, another 14 percent in 1966.

The hospital building boom is probably unparalleled in the advanced countries, and at the present rate the health services, provided as a public service, threaten to swallow 6.4 percent of the gross national product by 1980 compared with 2.2 percent in 1950.

The boom is partly the result of local politicians competing to give their counties the most and best in hospital care, but manpower supplies haven't kept up. Some 20 percent of physicians' posts in provincial hospitals are vacant or staffed by unqualified men, some wards are closed, and official figures suggest that if nursing needs are to be met every girl leaving school between now and 1970 and not taking a higher education must go into hospital service.

The computer bug has also bitten the health service. The 2 million inhabitants of Stockholm County, for example, are to be registered in a computer bank containing all relevant medical information. Doctors at any hospital in the county will be able to dial for information and receive it within sec-

U.S. immigration law will keep some of these persons in Britain for the next few years.

Speaking of physicians and scientists, Voysey suggests the obstacles to U.S. admission may not be as insurmountable as they seem. These individuals may be able to take advantage of exchange visas which allow them to come to the U.S. for two years to pursue research. There are no numerical restrictions on exchange visas, he says, and once a man has one, it is possible to have it extended by a special waiver. Of the estimated 72,000 Britons who entered this country in the last decade on exchange visas, 6,780 received waivers. Half were physicians; half other professionals, including teachers and nurses.

onds on a television screen.

But people are asking whether all these hospitals are an unmixed blessing. As economist Edgar Borgenhammer points out, for the cost of a new hospital it would be possible to build 20,000 service flats for old age pensioners; and a year's running costs would pay the salaries of 3,500 doctors or 7,000 nurses.

## GASBUGGY

### A-Bomb In the Gas Field

The twice-rescheduled Gasbuggy explosion (SN:12/9), a thermonuclear test to free locked-in natural gas deposits in New Mexico, created a 350-foot-high chimney of rubble beneath the earth when it was finally set off Dec. 10.

Atomic Energy Commission spokesmen said drilling during the next few weeks will yield samples of the gas and measure how fast the radioactivity from the explosion was decaying. After that, production testing, to see how much flow of natural gas had been stimulated by the blast, will begin.

Gasbuggy was the first test sponsored jointly by the AEC and industry to utilize nuclear explosives for commercial purposes. Other proposals in the works include two more natural gas experiments, tests to free shale oil and break up low-grade copper ore and an explosion to create an underground reservoir to store natural gas.

Sometime before April, the AEC hopes to resume the postponed Cabriole excavation test, which was held up last February in order not to upset negotiations of the non-proliferation treaty. Cabriole is one of a series of tests needed to develop nuclear blasting technology for canal digging.