

Soviet scientific and technical training, on the other hand, is producing far greater numbers of trained graduates than we seem likely to be able to do on this continent, and that number is increasing.

A recent survey showed that, in 1953, there were 5,800,000 people in the United States with higher education. In the U.S.S.R. there were only about 2,000,000; but the number at work in the applied sciences was about the same as in the United States.

In 1954, 60 per cent of Soviet graduating classes had majored in science; in the United States only 8 per cent. In the same year, the U.S.S.R. graduated more engineers and scientists than the United States and Western Europe together. One count shows that last year the U.S.S.R. graduated 60,000 engineers, the United States 22,000, and the United Kingdom 3,000.

We have no means of comparing exactly the standards of training between the Soviet and North American education, but I think it would be unrealistic on our part to doubt the fact that the U.S.S.R. is now quite capable of producing scientists, engineers and technicians, comparable in ability and training to those of any of the non-communist countries.

The Soviet educational system which produces this result operates on two basic rules: obedience and industry. The individual is brought into the system at the age of three and remains in it for fourteen years or so. Then, if he can qualify, he proceeds to higher institutions of learning where he works a six-day week, and works hard. The principle of education without pain or of learning through play is wholly rejected.

Furthermore, 47 per cent of the students' working time is devoted to science and mathematics. By comparison a recent survey showed that only 8 per cent of United States students study chemistry, 5 per cent take physics and a little over 20% take general science.

We do not, then, come off very well in comparison with Soviet Russia in the test applied to our educational system of quantitative results in the engineering and scientific field. That test, however, is not the most important one that we face; though it is important enough, in all truth.

Even if this continent turned out engineers and scientists by the hundreds of thousands each year, that would not alone enable us to meet the new communist challenge of "competitive co-existence." In the short run it would give us a greater feeling of security. In the long run, it would not by itself give us much hope for the future.