

That is, I believe, the result from applied engineering and scientific knowledge.

As you can see from the exhibits--which are designed to present the best quantitative information that I can find available to illustrate the points which will follow, you will have a chance to see for yourselves reflections of some of the things that have already been described.

Well, then, energy is the key to national power, energy applied through science and technology, in a free economy. This is what made the American production machine the greatest one in the world. This is what gave us the greatest standard of living in the world. This is what gave us the greatest economic power in the world.

Out of a nation of approximately 3 million people, in England, this is what produced the industrial revolution, when they found out how to build steam engines. The engines displaced the old system of home industries using muscular or manual labor with readily available thermal energy, one of the natural forces to be utilized by mankind.

Thus it was Newcomen's engine in the 1700's that started the industrial revolution which provided the means to produce such a vast surplus of wanted goods that British trade spread over the face of the world and the flag followed the trade.

The study of economics did not do it. The resulting economy was the product, and it was this economy that kept England in that superior position until the enormous might of competitive, scientific, technological civilizations in other countries thrust it into its present defensive role.

The Germans attained their power largely by finding out how to use British and French basic chemical science, which with the spread of scientific and technological education created that vast German industry founded upon synthetic chemistry which produced so many of the new materials which, as you know, are now the basis for enormous American industries.

At the time of World War I, the German use of technological trained people--of which they had so many more than we, plus the fact that their universities turned out so many more than ours--caused us to rely on them for many of our essential materials at