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From Where I Sit

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CPYRGHT

You have to learn arithmetic to become an engineer. Arithmetic is not being taught in most American public schools these days as it must be for basic engineering construction.

You have to have a full course of high school mathematics to become an engineer. That means algebra, plane geometry, solid geometry, advanced algebra and trigonometry. Few high schools these days offer all those courses. Many stop with plane geometry.

Many years ago algebra and geometry were required courses in high school except for the girls who were taking home economics. Somewhere along the way most high schools decided that algebra and geometry were too tough — that public speaking, community singing, art and such were much more important. After all we were looking for culture weren't we?

And if you doubt the sincerity of my statement here, have but to refer you to a speech made by a superintendent of public instruction some ten or fifteen years ago to a local service club in which he expressed great pride in the fact that high schools had gotten away from the foolish idea that student education should be limited to English, mathematics, history, languages and the sciences, and were offering fifty or sixty different courses which gave cultural instead of brain training.

The main idea seemed to be to find enough easy subjects high school students could take so they could graduate without working too hard. Mathematics and the various sciences, particularly physics and chemistry, were just too rough on the brain.

Paraphrasing, but in support of the above statement, it might be pointed out that two years of foreign language were REQUIRED for graduation not so many years ago. This was likewise discarded, probably because the educators discovered that with the lack of proper foundation in English grammar the poor youngsters couldn't be expected to learn any other language. So they passed the responsibility on to the colleges.

riors, scientists and technicians at a rate which is outnumbering our own skilled men more than two to one — on the land, on the sea and in the air.

The sad, sad fact, yes TRAGIC fact, from the standpoint of national welfare, is that we do NOT have the skilled, scientific manpower in our factories, labs and armed forces to match the Russians in a futuristic war. If you're inclined to come back with the familiar: "Says who?" the answer is: "Says who?" intelligence and other federal agencies.

About the only field in which we have enough men trained to meet the problems of the present era is that of construction, where we're experimenting with new concrete mixes, new types of building material and new designs to withstand maximum explosions. Elsewhere however, we are getting very, very short of skilled engineers.

Earlier this year, for instance, General Motors needed 480 expert tool and die makers for an emergency retooling project. They were not to be found in the United States and the net result was they were imported from the far corners of the earth. In this case, of course, we're talking about skilled workers who should be trained in technical schools and machine shops, but exactly the same thing is true in the field of science and engineering.

The Soviets have been graduating at least 1200 aeronautical engineers a year since 1951. In 1951 we gave diplomas to 1725 such technicians. But the number has been diminishing critically ever since. At the most recent commencement here in the United States, exactly 645 diplomas were granted to aeronautical engineers and this in the midst of tremendous development and advancement in the air age.

We're building supersonic bombers of tremendous power. We're building guided missiles which are intricate and potent. We've perfected anti-aircraft weapons which have more than a million parts. These devices require trained engineers to handle, repair and operate. And we don't have those engineers. We're not training as many now as we did ten years ago and need many times as many.

Of course the general reaction is: what's the difference — if youngsters don't learn mathematics they can make a living doing something that doesn't require it. Then they go on to buttress their arguments with the declaration that, after all, machines do most of the work today and men's brains don't have to grasp intricacies of mathematics and science.

But the significance goes far deeper — to the survival of the nation, as a matter of fact, and here's how:

You may or may not have read here some months ago the story of how industry is feeling the pinch of fewer and fewer trained engineers to the point where progress and production are beginning to lag. How the universities of the nation are graduating fewer and fewer engineers each year with grave danger that the young men of this country who are capable along this line will diminish to the vanishing point.

Actually, we're losing in a very important race to the Russians who, though doing a good talking job at Geneva this week about peace, are still rushing preparation for push-button warfare, training hundreds of thousands of electronic and aeronautical war

And it's not that young men aren't interested in this fascinating field. It's just that they aren't being taught the fundamentals which make it possible for them to understand the subject. Hundreds of high school graduates give up their planned engineering courses after the first year because they find the going TOO TOUGH. They've been trained in taking it easy. They haven't the foundation. They don't know how to study, to concentrate or to reason. They lost out all the way from the primary grades to university and the colleges cannot make up the deficiency.

The plain, simple fact is that we're reaping on a national basis, the crop sowed by the "progressive" educators of a generation ago. Give them credit for being sincere though supercilious, but also remember that IF somebody had planned to destroy or seriously hamper the great American industrial machine, mightiest in all history, the best place to attack was certainly in the public schools JUST AS THEY WERE