

puter center. Around the institutes, 18 in all, an industrial city was built.

Academician Lavrent'ev, Novosibirsk's founder and first settler, heads the Institute of Hydrodynamics. He has done work on the theory of cumulative (directed) explosions since the 1940s, and contributed substantially to Soviet weapons development during World War II. He once made the observation that "modern science cannot develop without a large industrial base." That is the thinking that produced Novosibirsk.

When the project was first launched, scientists found that, as their theoretical breakthroughs were tuned toward application to industrial processes, the factory workforce drawn from around Novosibirsk could not immediately assimilate the new technologies. The scientists themselves were therefore continually drawn into engineering and technical experimentation and away from basic theoretical work.

To solve the problem, Lavrent'ev drew up a program for creating experimental pilot-plants to test the latest technologies, and industrial research centers to handle their design and production. This division of labor allowed scientists to concentrate on basic research, the foundation of the development project.

To Soviet scientists and science students, Novosibirsk's development has constituted an unparalleled opportunity for creative work. At the Institute of Mathematics, Academician L.V. Kantorovich put his ideas on the use of mathematics in economic planning to practical test. Novosibirsk was planned with the question of improving the quality of labor-power foremost in mind.

The key consideration in massive industrial construction is whether a labor force—drawn initially from a culturally backward, peasant region would be developed to the point of assimilating a whole range of new technologies successively brought on line. Therefore, Novosibirsk and the attached Akademgorodok community (where the Academy institutes themselves are located) have been planned and built as cultural centers for the surrounding population. The city now has a population of more than 1.5 million, with over 550 libraries, four museums, an opera house, concert hall, a university, and several technical high schools, all immediately accessible to towns and villages within a 200 mile radius via the Trans-Siberian Railroad.

The Academy itself is made up of 18 Institutes involving over 50,000 people, including 21 Academicians, 47 Corresponding Members, 3,000 scientists with masters or doctoral degrees, and thousands of engineers, technicians and students. The community has been made into a national science training center that attracts some of the most promising students from all over the country.

Every third person in Novosibirsk is a student, and other centers modeled on Akademgorodok are now being built elsewhere in Siberia.

Can we restore West Point's tradition?

University of Chicago Professor Izaak Wirszup's point that the average American high school graduate is essentially illiterate in science and math (most particularly when compared to the typical Soviet student) was recently well substantiated by Dr. Morris Levitt, a former physics researcher and teacher who is now the director of the Fusion Energy Foundation. In a guest commentary in the May 14 issue of the twice-weekly newspaper New Solidarity, Dr. Levitt recounted the situation at the United States Military Academy at West Point, New York where he had just given a seminar on "Fusion Power and its Military Applications" at the invitation of members of the physics department. We excerpt that article here.

... The situation at West Point that I learned of first hand from officers in the science faculty is perhaps the most shocking aspect of the ongoing collapse of U.S. scientific training and capabilities. Compared with the many campus playpens I have visited this year, West Point and its cadets at least still *look* like they should. But our nation's most respected institution of higher learning and national service is also in danger of becoming not much more than a Hollywood set....

Back in 1976, you may recall that there was a major cheating scandal at West Point. Somehow, an advance copy of an exam was obtained, copied, and distributed to a number of cadets. Whether or not cheating went on, it was alleged that the honor code, which calls for reporting anyone else known to be violating the rules, had been seriously breached. The whole incident had a most peculiar odor about it, because grade-grubbing is normally alien to cadet and military life since professional advancement is very rarely linked to purely academic accomplishments.



Dr. Levitt address officers and cadets at West Point.

However, a team of “reformers” immediately descended upon the Academy to “clean things up.” Their recommendation? Improve the ethical standards by upgrading the liberal arts curriculum and smashing the science and technology requirements. The traditional military faculty opposed the “reform”—which was said to be largely inspired by a professor from Kook Tech (also known as Princeton)—but to no avail.

The result? Whereas in the past every cadet was required to take at least three semesters of physics and a course in electrical engineering it is now possible to graduate with just a sniff or two of science. Many cadets are doing just that, concentrating in a series of courses dubbed “the poets and lovers” curriculum by the traditionalists. Therefore, it is now possible for a West Point graduate to get some sensitive organ shot off by a laser beam on a distant electronic battlefield, without even knowing what the offending gizmo was called, let alone how it works!

The physics faculty meanwhile is desperately trying to cope with their new orders to cram mechanics, electromagnetism, and modern physics into just two semesters. Predictably, the ranks of science majors and physics concentrators is rapidly dwindling. America, what outrages you permit against your best traditions! Don't you know that West Point was the first major scientific and engineering institution in the young American republic? Its great commandant of the early 19th century, Superintendent Thayer, was in direct contact with the staff of the peerless institution on which the Academy was originally modeled, the Ecole Polytechnique of Republican France. The Ecole, under the leadership of the great scientists Monge and Carnot, produced the advances in

geometry, dynamics, thermodynamics, and chemistry which laid the basis for modern science, as well as the outstanding officer cadres responsible for the military defense of the Republic; West Point was the source of the first science textbooks in America and the engineering corps that built up our vital inland waterways.

West Point is the last bastion to fall in a war offensive against American science and republicanism that started in the second half of the 1960s. At that time *NATO's* Club of Rome and its environmentalist spawn killed off our two pace-setting science programs, space exploration and nuclear energy, and the Aquarian kook-dominated National Science Foundation replaced the scientific core of the educational system with the New Math and Malthusian drivel...

What has been the net result? Look at it from top to bottom. A few of our oldest scientists, like Edward Teller, are trying to push forward basic energy and military research against increasing odds. Our many talented and dedicated senior scientists have managed to maintain a significant level of progress in fusion and weapons systems, but with no present prospect for bringing on line in the 1980s the most advanced types of systems that the broad-based Soviet effort brings closer to realization every year. Below that level, the opportunities for fruitful scientific work continue to shrink, manifested by the continuing falloff in science training at all levels from postgraduate down to the hideously deprived public schools. The All Volunteer Army is now 60 percent comprised of individuals who are not high school graduates, but who are generally well schooled in the ways of drug use...

Perhaps one final anecdote from West Point summarizes the whole situation. An officer on the science faculty who recently served a tour of duty with the Brazilian Army recounted the following story. The officers of the Brazilian Army are selected from the top of the intellectual elite of the country. Their service is viewed as a hallmark of honor. The enlisted men also consider Army service to be a great honor, and in fact it offers much better educational and training opportunities than most any other employment. Officers and enlisted men also have a concrete sense of purpose through the army's role in engineering and construction projects to build up the infrastructure of their country.

One day, however, the West Point officer recounted, two enlisted men in his unit were caught in possession of some marijuana. The entire unit was immediately assembled, and in front of all the officers and enlisted men the drug users were stripped of their insignias and drummed out of the Army, suffering humiliation and disgrace as much from the contempt of their former comrades as from their loss of position.

Can we be any less resolute in fighting to restore our country's science and honor?