

Military and economic breakthroughs: what beam weaponry will accomplish

by Steven Bardwell

Dr. Steven Bardwell, EIR's military editor, is also director of Plasma Physics at the Fusion Energy Foundation.

The news media have portrayed the beam weapon as a "Buck Rogers" fantasy or as a "third generation nuclear weapon" that will "militarize" space by putting bombs there. But beams weapons are neither wonder weapons nor nuclear weapons. Directed energy beams can be of intense electromagnetic waves of the same wavelength (laser beams), of subatomic particles (electron beams, proton beams, or neutral particle beams), or microwave and plasma beams—all of which travel at or near the speed of light. The development of such beams would represent a qualitative leap in our understanding of physical science and technology, comparable to the leap the world made with the use of nuclear fission.

Beam weapons would make nuclear war obsolete. Beam weapons do not simply hit a missile silo or prevent a nuclear missile from being launched; they ensure that the nuclear warhead is destroyed in the atmosphere. There is no nuclear explosion, no nuclear holocaust.

The United States could have the first generation of beams weapons within five years—if the United States puts a priority on beam research. Such beam weapons would be able to find, track, and destroy a nuclear-armed ICBM, preventing its explosion. And in another 10 to 15 years, a second generation of space-based beam weapons could be developed giving even greater protection, with a capacity to destroy 10,000 ICBMs at once. For the first time since the development of the ICBM, the United States would possess an actual *defense* against an all-out nuclear attack.

As President Reagan made clear, important scientific questions remain to be solved; to bring beam weapons on line in the 5- to 15-year time-scale suggested here would require nothing less than a research and development effort comparable to the Manhattan Project that pioneered nuclear weapons. A new Manhattan Project, ironically, would for the first time in 30 years free this nation from being held hostage to the threat of nuclear holocaust. More important, as Democratic Party figure Lyndon LaRouche, the Fusion Energy Foundation, and more recently, the distinguished physicist Dr. Edward Teller have stressed, a brute-force research effort

in beam technologies would have a revolutionary impact in accelerating the development of nuclear fusion for energy production, the development of plasma torches for materials processing, and a host of other revolutionary technologies.

Like the NASA Apollo moon-shot program in the 1960s, an all-out research program in this frontier science area would spur industrial productivity and revive the U.S. economy, at the same time making the industrialization and development of the Third World nations a reality at last. A Fusion Energy Foundation study of the impact of a beam weapon program on the U.S. economy shows that such a program will create 200,000 new jobs within a year and add \$190 billion per year in new capital investment. Only such an Apollo-style program, the study shows—putting a "science driver" at the lead of the economy—can jolt the United States out of its current state of economic depression and provide for continuing growth.

How a beam weapon works

A beam weapon system would have to meet the same requirements as any "conventional" defense system against ballistic missiles. The Los Alamos National Laboratory's 1980 report on ballistic missiles defense specified the problems to solve as follows: 1) early warning that hostile ICBMs have been launched; 2) detection and assessment of the threat; 3) derivation of trajectories and prediction of targets; 4) discrimination of warheads, re-entry vehicles, and decoys; 5) targeting the interceptor (the beam); 6) guidance of the beam; 7) destruction of the target.

During the past 15 years, both the United States and the Soviet Union have perfected the early warning technology using satellites, and both countries routinely monitor all missile launchings. The more refined assessments are now accomplished using ground-based radar, but there are several new technologies that will greatly enhance the determination of where a missile is coming from, how fast it is going, and what its target is, and also discriminate between those missiles meant to hit their mark and the decoys.

The Los Alamos group has stated that the best way of using those new technologies for the job is to launch rocket-borne probes into trajectories above the atmosphere equipped

with 1) a long wavelength infrared sensor technology that can detect fuel tanks in the hostile missile at distances of 3,500 miles; 2) computer and communications technologies that can handle the data for as many as 20,000 targets in the infrared telescope's field of view.

Once the necessary information is processed, of course, the beam weapon must be aimed and must hit and destroy its target, as well as assess whether another shot is necessary. The technologies needed here are completely new, requiring unique solutions: Aiming a beam weapon at a target 3,500 miles away is like hitting an image about .00003 degrees wide—the same as a piece of thread seen at 100 meters—while it is moving at 20,000 feet per second!

It is generally agreed that the aiming and tracking technologies are within our scientific grasp today. What is required is concentrated work on the problem using existing optical systems (there are now cameras on civilian satellites that can point to a region of the sky with the accuracy required by a beam weapon) and fourth generation gyroscopes now on the drawing boards.

The more difficult task will be powering the beam to the target with energy enough to destroy the target and energy of a sort that will be absorbed by the target so that it will be disabled.

The timetable is as follows: within five years we could have a hybrid beam weapon system with an on-ground laser and mirror in space. This would offer complete protection against an accidental ICBM launch or an attack by a runaway

third power. In another 10 years, a second-generation beam system could give us substantial protection; and in 15 years, more advanced and much more attractive possibilities, like the X-ray laser, could provide us with defense against all-out nuclear attacks.

The plasma age

The development of beam weapons will not only free humanity from the insanity of having no defense against nuclear war, it will bring mankind out of the atomic age and into the plasma age, where we will be able to master technologies using the highest-energy form of matter known today. These new technologies will have more revolutionary impact on society than the introduction of electricity had 100 years ago.

Mastery of a plasma would put at our command 1) an energy source—nuclear fusion—that has an unlimited fuel supply taken from sea water and is cheap, clean, and inherently safe; 2) access to a supply of raw materials that would be virtually inexhaustible through the technology of a fusion torch, which is capable of refining the lowest grade ores economically; 3) new materials-processing technologies that allow the creation of nuclear-tailored materials (isotope separation on a large scale), the degradation of radioactive wastes, and the ultimate recycling of wastes, using the plasma torch.

This is not science fiction; it is what can be done in the next few years—if Americans win the policy fight for an Apollo-style program to develop beam technologies.

EIR

U.S., Canada and Mexico only

3 months \$125
 6 months \$225
 1 year \$396

Foreign Rates

Central America, West Indies, Venezuela and Colombia:
 3 mo. \$135, 6 mo. \$245, 1 yr. \$450
 Western Europe, South America, Mediterranean, and
 North Africa: 3 mo. \$140, 6 mo. \$255, 1 yr. \$470
 All other countries: 3 mo. \$145, 6 mo. \$265, 1 yr. \$490

I would like to subscribe to the *Executive Intelligence Review* for

3 months 6 months 1 year

Please charge my

Master Charge No. _____ Visa No. _____
 Interbank No. _____ Signature _____
 Expiration date _____

I enclose \$ _____ check or money order

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Make checks payable to *Executive Intelligence Review* and mail to *EIR*, 304 W. 58th Street, 5th Floor, New York, NY 10019. For more information call (212) 247-8820.