EIR Special Report

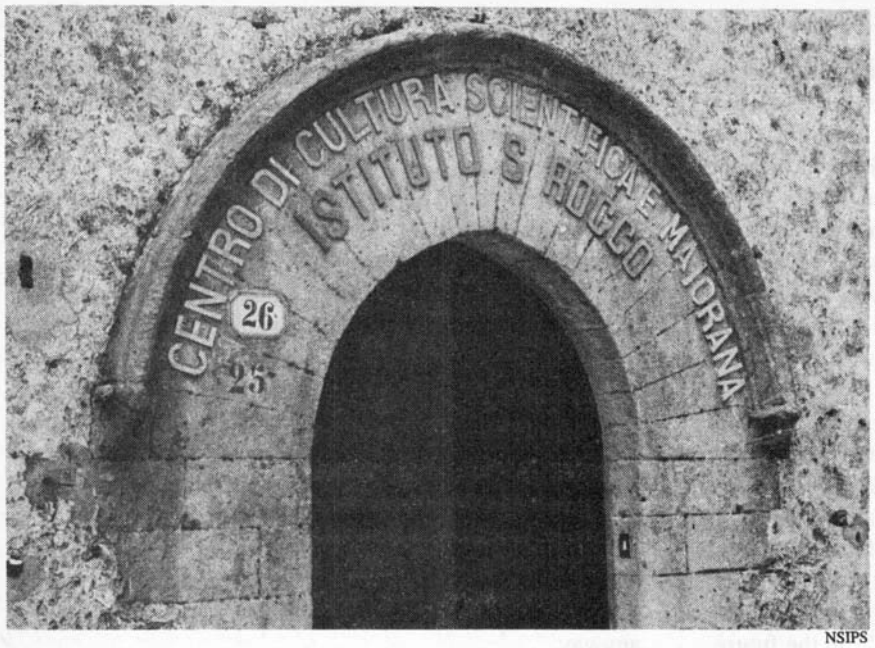
U.S. beam-weapon scientists: No to decoupling

by Giuseppe Filipponi and Webster G. Tarpley

At an international scientific conference just concluded in Erice, Sicily, a group of American laser scientists from the Lawrence Livermore National Laboratory utterly demolished the contention of Henry Kissinger's "decoupling" lobby that President Reagan's Strategic Defense Initiative will sever the defense of Europe and the Pacific Basin from an isolationist "Fortress America." The American laser scientists, associates of Dr. Edward Teller of Livermore, demonstrated conclusively that the successful development and operation of strategic defense systems, especially space-based laser defenses, will depend upon increased cooperation between the United States and its European and Pacific Basin allies. In so doing, the Livermore group reflected the point of view developed at a series of scientific conferences held during last autumn and winter under the auspices of *EIR* and the Fusion Energy Foundation in Bonn, Rome, Paris, Brussels, Oslo, Milan, and other European centers.

As a result of the arguments of the American group, the chairman of the symposium, Prof. Antonino Zichichi, director of the Centre Européen de Recherche Nucleaires of Geneva and of the Centro Ettore Majorana of Erice, rejected the contention of the Soviet representative, Prof. A. A. Vasilyev of Georgii Arbatov's U.S.A. and Canada Institute in Moscow that beam defense would inherently destabilize the world strategic situation. Zichichi called at the end of the conference for "10 years of guaranteed peace for humanity" through strategic defense in a joint effort by the United States, the Soviet Union, China, and Europe. "These shields to intercept the vehicles that carry certain death cannot be destabilizing," commented Zichichi. "They will serve to stop some Nero of the year 2000 from pushing the apocalypse button."

Zichichi's evolution during the conference was a matter of some interest. In his prolusion, he had balanced between the proponents of Mutually Assured Destruction (MAD), on the one hand, and the supporters of Mutually Assured Survival (MAS) on the other. He read a message to the conference from Italian President Sandro Pertini, in which that para-communist statesman lamented the "discouraging phase in the relationship between the superpowers, at a moment



NSIPS

Dr. Lawrence Wood of Lawrence Livermore Laboratory (lower right) and Dr. Vladimir Aleksandrov of the Soviet Academy of Sciences speaking at Erice, Sicily. Wood called for a crash program of beam-weapon defense while the Soviet delegation peddled propaganda about a "nuclear winter."

when the planning, and development, of ever more destructive weapons, and science fiction-like devices, which would leave no hope of survival, are causing increasing alarm." Zichichi's tilt against Reagan's Strategic Defense Initiative (SDI) at the outset was clear, but later the wind would be seen to be blowing in another direction.

The Livermore group, led by Drs. Lowell Wood, John Nuckolls, and Arthur Broyles, swept away the confusion and disinformation on the real implications of beam defense which had led the British, French, Italian, and, until recently, West German governments to advance reservations against the Strategic Defense Initiative. "Both superpowers," said Wood, "have a compelling interest in seeing their allies fully protected by evolving strategic defense capabilities," also as a "hedge against the Finlandization of the alliances' members." Wood warned against the growth of an isolationist mentality in the United States: "From a U.S. perspective, neither NATO nor the Pacific Basin alliances could survive United States motion toward a 'Fortress America' stance."

A laser shield for all the allies

Dr. Wood stressed that maximum effectiveness will be obtained from space-based x-ray lasers if they neutralize enemy ballistic missiles during their boost phase, during the first three to five minutes, before MIRVed warheads can separate. During this phase, Wood explained, it is impossible to determine where the missiles are heading. "The missiles must be destroyed before we know whether the target is Paris, Bonn, New York, or Tokyo, or, for that matter, a target inside the U.S.S.R. They must be destroyed with indifference to where they are heading. Even if the United States were indifferent to its allies, we would have to give a leakproof coat to all of them."

Wood pointed to sensor and communication technologies as areas vital to laser defense in which the Western Europeans are equal or superior to the United States, and where their contribution could thus be decisive in production and deployment. He identified digital data-processing as an area in which cooperation with Japan would be vital. Concerning midcourse and low-level (point) defense, Wood stated that these could be "employed every bit as aptly by democracies on the European continent as they could on the American continent." Wood also voiced the expectation that the United States would "make available the technology and perhaps even the turnkey systems to its allies in Europe and the Pacific Basin."

An x-ray laser costing $30 million could easily destroy 30 ICBMs, IRBMs, or SLBMs each costing between $30 million and $300 million dollars, Wood declared, yielding a cost efficiency advantage for the defense of between 30 and 300 to 1. He contrasted this with the total U.S. spending of $10,000 billion under the MAD regime, which cannot protect the life of a single citizen against nuclear missiles and which thus has miserably failed to respond to the constitutional imperative of providing for the common defense. Wood refuted claims that such countermeasures as the proliferation of the offense, the hardening of ICBMs, or the use of decoys could hope to overwhelm beam defense.

Analyzing the present strategic confrontation, Wood showed how both superpowers are pushed, under the current

MAD arrangement, closer and closer to a "launch-on-warning" response, placing the world on a hair-trigger to nuclear war. The posture of the U.S.S.R., he said, is one of "preemptive strike," in contrast to the United States' "massive retaliatory blow" configuration. He pointed to the "ever-shortening strategic time-lines due to extreme forward-basing of strike forces" and the "possibly crucial advantages deriving to both sides from launch-on-warning and launch-under-attack." The result, he concluded, is a "geopolitical stability in crisis which is highly doubtful," with "both sides strongly impelled to early salvo-launch."

Wood detailed the multiple orders of magnitude advances in telecommunications, digital data-processing, pulsed power, and directed energy that now make laser defense possible. Strategic defense, he said, will lead to a new strategic configuration, in which attacks will be warded off by their utter futility, rather than by a balance of terror. He looked forward to "'full-up' testing of non-nuclear defense systems against small-scale 'launch-against-self dud attacks'" in the future. He attributed assertions of the impossibility of laser defense to "fantasies—almost always pessimistic—which arise from limited technical background and from confusing engineering challenges with the barriers of fundamental physical laws."

Wood was adamant that a Soviet anti-tactical ballistic-missile defense system is now in operation, and is the only one of its kind in the world. In addition to the system around Moscow allowed by the ABM treaty, this is a system capable of defending the western part of the U.S.S.R. against land-based medium-range missiles such as the Pershing II and also against submarine-launched ballistic missiles. The Soviets have built radar facilities bigger and more numerous than those permitted by the ABM treaty. The missile used by the Russians is the SA-X-12, which can carry a nuclear warhead and whose operating range is very large. "Strategic defense is alive and well and living in the U.S.S.R.," Wood concluded.

Wood predicted that a serious program on the Apollo project model (which he distinguished from a crash program of the Manhattan District Project of World War II variety) could defend vital military targets against an echeloned ICBM attack in 4 to 6 years, could destroy 90% of an incoming strike after 8 to 12 years, and could provide a "leakproof umbrella in a downpour" after 10 to 15 years.

Kissinger under fire

Dr. John Nuckolls elaborated the implications of beam defense for strategic doctrine and the defense of Europe. There has been an erosion, he said, in European confidence in the likelihood that a U.S. President would order an all-out strategic attack on the U.S.S.R. in case of a successful Soviet attack on Western Europe. "It was Henry Kissinger who told the Europeans that they had reason to worry about the American response," said Nuckolls. Later, President Carter told several foreign statesmen the same thing. But even if the United States were to intervene, the "best" Europe could hope for would be to become a thermonuclear battlefield! Thus, "there is no good outcome for Europe" under the MAD strategic concepts.

Nuckolls called on the "young geniuses of the Lawrence Livermore Laboratory" to go find ways of "going beyond tactical nuclear war in Europe." Referring to Wood's thesis that boost-phase neutralization must attack all launchers, Nuckolls advised, "Europeans should go for strategic defense."

He showed that the Soviet Union has heavily weighted its strategic forces in favor of a rapidly growing first-strike potential, even at the expense of Soviet second-strike forces. He demonstrated the fallacies of both Vasilyev and Stanford Prof. Sidney Drell when they predict that the x-ray laser will lack sufficient range to be an effective anti-missile weapon, specifying that Drell had been warned of his blunder before his work on the topic was published, but chose to publish anyway.

Professor Arthur Broyles then elaborated the role of civil defense in a strategic defense program for the alliance as a whole. The United States, he argued, needs methods of defense to make it credible to Europe that the United States will come to Europe's aid and be able to continue to fight. Citing Teller's recommendation that "we should tell what we know about strategic defense to our allies," Broyles underlined that the Western alliance must be maintained and strengthened. "When we look at Europe, we see a great industrial potential and large numbers of very highly trained people, who believe in democracy and in our form of government. You are allies that we could not find anywhere else in the world. That is why Europe is of critical importance to us."

Soviet strategic deception

One year ago, world attention was focussed on Erice by the signing of a tripartite U.S.-U.S.S.R.-Europe agreement to explore possibilities of war avoidance through beam defense. This document, bearing the signatures of Teller, Zichichi, and Soviet Academician Yevgenii Velikhov, also proposed joint computer simulation of climate and weather changes in the wake of a nuclear exchange—the so-called "nuclear winter" thesis. In his opening statement, Zichichi made no reference to the beam-defense part of that agreement—a deficiency which was pointed out by *EIR* correspondent Tarpley in an intervention in the first day's plenary session.

The basis of the 1983 agreement had been a generous offer, relayed from the White House to Moscow by Dr. Teller, for managing the transition from Mutually Assured Destruction to Mutually Assured Survival. That Erice declaration was issued just a week before the Soviet downing of Korean Airlines Flight 007 in the Far East, which showed the U.S.S.R.'s true intentions.

Moscow's absolute refusal to seriously discuss strategic defense for war avoidance, made abundantly clear in the interim, was underlined by the absence of Velikhov and his replacement as leader of the Soviet delegation by A. A. Vasilyev, a party hack and intellectual thug from the Arbatov-KGB gang who disgusted those present by presenting a crude spectacle of lies and duplicity.

Vasilyev submitted a paper on "Space-Based Anti-Missile Systems with Directed-Energy Weapons: Strategic, Legal, and Political Implications," produced by the Committee of Soviet Scientists for Peace, Against the Nuclear Threat. This tissue of prevarication and strategic deception asserts, among other things, that the maximum effective range of an x-ray laser is about 3 km., not much more than the nuclear charge that does the pumping. Wood later described the elementary blunder underlying this calculation as unworthy of an undergraduate student, and the document as "fundamentally flawed."

Vasilyev insulted the intelligence of his audience by asserting that, on the one hand, strategic defense is impossible, too expensive, not suitable for the defense of Europe, but on the other hand violates the spirit of the ABM treaty, increases tensions, adds instability, and makes the strategic situation "assymetrical." "Even the discussion of strategic defense in the West adds to international tensions," said Vasilyev.

Vasilyev claimed, incredibly, that the U.S.S.R. has no program to build beam defenses. "If I tell you that we are not building space-based antiballistic-missile systems, you will not believe me," Vasilyev correctly remarked. To prove his point, he then lied that Lt. Gen. James Abrahamson, head of the American SDI, had testified to a congressional committee that there were no signs of a Soviet program in this direction. Vasilyev later reversed himself, denying that the Soviet government ("at the level of the Central Committee") had ever denied the feasibility of beam defense.

Vasilyev had high praise for Henry Kissinger, citing the former Secretary of State's refusal to ban MIRVed warheads in SALT I and his later lament that this was the biggest mistake of United States foreign policy during his tenure in office. "Our dispute now is a prelude to a new chapter of lost possibilities just like these," stated Vasilyev.

Vasilyev's superior at the U.S.A. and Canada Institute, Georgii Arbatov, had just written a half-page article in the Soviet daily *Pravda* on August 13th, boosting Kissinger as a "venerable specialist" in diplomacy.

Among Vasilyev's few honest evaulations was the remark that the strategic role of Europe has increased, not decreased. "Europe right now is the hottest point of the globe, the biggest concentration of nuclear weapons, and the most populated part of the earth," he stated, and then warned against any "claims of territory" in Europe. The reference to the Soviet threat to Europe and the current anti-German "revanchism" campaign in the Moscow media was transparent.

In the evening of the first day of the conference, Wood and Vasilyev became embroiled in acrimonious exchanges. Vasilyev announced that he had objections to make to each and every feature of Wood's speech, but that he would have to limit his critiques because of time reasons. The scientific issue, said Vasilyev, is not whether ultraviolet radiation can be propagated in the atmosphere, but whether infrared radiation can be propagated. American tempers rose in response to this fresh evidence that Vasilyev was a scientific illiterate. Wood had accused those who label beam defense impossible of being "either disingenuous or naive." "I am one of those you call disingenuous or naive," stated Vasilyev.

Vasilyev then alleged that the United States has long possessed an anti-satellite system, which charge Wood promptly denied. Vasilyev cited a 1963 statement by then-President Lyndon B. Johnson that the United States already had an ASAT capability. "Johnson, like Khrushchev, had a big mouth," retorted Wood. "You had an ASAT system then, and this was how you discovered the electromagnetic pulse," countered Vasilyev. "The British discovered EMP," was the comeback from Wood. Vasilyev then raved that the U.S. ASAT system exists, is operational, and is part of a first-strike strategy, according to the *Bulletin of the Atomic Scientists* and various publications of the Union of Concerned Scientists. "Some people in my country, whose views I do not share," shot back Wood, "consider those sources as pro-Soviet propaganda!"

The next day, after Nuckolls had thoroughly confuted the crass blunders of physics and mathematics speckled through the Soviet position paper, Wood turned to the Soviet delegation and appealed to them to discuss openly the differences of scientific evaluation between the two countries so as to leave Erice with a shared technical data base. The Livermore delegation had privately asked some participants on the Soviet side if they could not have found a more suitable spokesman than Vasilyev, whose lack of scientific training was an embarrassment to all. They had then been assured by the Soviets that Vasilyev was indeed a qualified scientist, a doctor of physics. Now, in response to the appeal from Wood, Dr. Vladimir Aleksandrov answered for the Soviet delegation that they could make no reply, since Comrade Vasilyev was out of the room and he, not they, was the expert on anti-missile defense.

The 'nuclear winter' hoax

Reporting on the conference, the Italian newspaper *Il Secolo XIX* on Aug. 23 pointed out that the principal clash was not, indeed, between the U.S. and Soviet delegations, but between the two factions of American scientists from Lawrence Livermore Laboratory.

The titular head of the U.S. delegation was Livermore Prof. Joseph B. Knox, who was trotted out by Zichichi to comment on U.S.-Soviet science exchanges on the first day

of the conference. Knox avoided the subject of strategic defense, limiting himself to the "nuclear winter" systems analysis computer simulations being conducted by U.S. and U.S.S.R. computer centers. He said that he had just been part of a group of five U.S. scientists to visit Moscow, at the insistence of Zichichi, to consult with the Russians on further siumulations. "We visited Kiev, we visited Zagorsk, the center of the Russian Orthodox Church," said Knox. "It was a grand visit. We are building the basis for a working relation," he enthused.

The Soviet delegation gave full support to the arbitrary and tendentious hypothesis that nuclear war would result in a devastating planetary ice age, locking the northern hemisphere in glaciers and reaching into the southern hemisphere in the immediate aftermath of an all-out thermonuclear exchange (see "Defeating the nuclear war scare: Beam weapons versus appeasement," *EIR*, Dec. 6, 1983). The Russians view the "nuclear winter" hoax as an instrument for duping those Western gulls who imagine nuclear war to be the unthinkable, ultimate holocaust—precisely as prescribed by Kissinger's MAD doctrine. The strategic-defense and civil-defense policies of the Soviet state are not premised on any such "nuclear winter" assumptions.

Professor Vladimir Aleksandrov of the Soviet Academy of Sciences is a world-renowned student of systems analysis and cybernetics. He presented models showing a fall in temperature of 40, 50, or 60 degrees centigrade in Eurasia, and of 20 or 30 degrees centigrade over North America, on the 40th day after a nuclear exchange.

The Russians once had "General Winter." Now they are conducting psychological warfare with General Nuclear Winter.

On the American side, the nuclear-winter simulations have become the refuge for unemployed charlatans. More than one volunteered the confession that, although the computer models predict a nuclear winter, what would actually happen in the earth's climate and meteorology is a totally separate question. The badge of factional allegiance for the nuclear-winter systems analysts is Freeman Dyson of the Princeton Institute for Advanced Study, whose drivellings were repeatedly cited from the podium during the paralyzing boredom of this panel.

Professor Paul J. Crutzen, director of the Air Chemistry Division of the Max Planck Institute for Chemistry in Mainz, opened his remarks with the rather original gambit: "I am a professional pyromaniac," who chases fire engines and dedicates special attention to urban fires, especially at refineries.

Professor Alan D. Hecht, director of the National Climate Program of the United States, made clear how the American taxpayers' money is being spent for pseudoscientific boondoggles that benefit only the KGB. "I've only been in this field for a few months, so I really don't know that much about it. You are really the experts, and not me," he declared, and then proceeded to show slides of burning material in laboratories, including burning beds and furniture, to see what kinds of aerosols are thus produced.

Hecht pointed out that in addition to funding from the Soviet Academy of Sciences and the Royal Swedish Academy, he was looking for money for nuclear-winter simulations from the White House. A decision on this application by President Reagan's Science Advisor George Keyworth is now imminent. If there were ever an appropriation deserving to be suppressed to contain the Federal deficit, this is it.

The failure of systems analysis

The division in the U.S. delegation was presented in stark relief in the reply made by Robert Budwine of Lawrence Livermore to the simulations offered by Aleksandrov. Budwine stated that Livermore has vast experience in the numerical modelling of a great variety of phenomena, including nuclear explosions. This experience has taught that without experimental test data it is difficult, if not impossible, to obtain reliable quantitative results. "Short of experimental data, which we don't have, I doubt we will ever be able to say that there will be a temperature drop of 10, 15, or 20 degrees at any given point on the globe," Budwine said. A heating of the atmosphere is just as plausible as a cooling, he reported. "I am very skeptical."

Professor Enzo Boschi, President of the Italian National Institute of Geophysics, commented that "in reality, it is not clear how much dust a nuclear conflict would throw into the atmosphere, and the uncertainty about these parameters makes any results of the simulations dubious." Or, as one Italian journalist summed up, *"Molto fumo e poco arrosto."* (A lot of smoke, but no meat.) Another Italian journalist recalled during this part of the proceedings that Erice is named in honor of Eryx, son of Venus, and is mentioned by Homer, Thucydides, Virgil, Horace, Polybius, and other authors of antiquity as one of the celebrated brothels of the ancient world.

The final communiqué of the session was a dubious compromise, reflecting above all Zichichi's exertions to avoid a total break between the two superpower delegations. The communiqué recommends, first, further studies of the climatic effects of nuclear war (the nuclear winter); second, studies of natural catastrophes; third, exchange of information between East and West on the consequences of a nuclear conflict, especially on psychological and social consequences; and fourth, continued exchanges regarding the possibility and effects of laser and other anti-missile defense, under conditions of less and less secrecy. During the coming months a Soviet delegation will visit Lawrence Livermore for contacts under this heading. At the close of the proceedings, Professor Zichichi told a small group of journalists that he intended personally to assemble a group of European scientists to study the feasibility of beam weapons.