essary to remember that a hydrogen bomb can be detonated only by a powerful initial atomic bomb explosion which can spark a chain reaction in the lithium and deuterium mixture. The weapons system commonly called "beam weapons" prevents the initial explosion and substantially transforms the warhead or explosive nose cone into a dud. The missile, like a satellite, may fall to earth's surface, but it can no longer explode. Scientists agree that the emplacement, for example, of defensive lasers on the battlefield, even at the lowest level of technology, could be defended from other similar weapon systems, whereas a missile cannot be effectively defended from a laser beam or particle beam without a massive protection which would cause it to lose both its range and its necessary velocity.

EIR: What are the systems whose technology is most within reach for possible military applications?

Macrì: Laser beams, particularly chemical ones, will be the first usable developed systems. Such coherent light lasers of single wavelength can easily be focused with great precision at present, and there is no reason to believe that the U.S.S.R. is doing anything else. These systems are being intensely studied. Theoretical and applied research, however, is being carried out on all the five types of directed energy systems both for possible military applications and for research on thermonuclear fusion. There already exist lasers of several megawatts, and a chemical laser with enough power to be utilized for significant military jobs like knocking out intercontinental ballistic missiles in flight could be put up in five years. Such lasers would use as their active medium a gaseous compound of fluorine and either ordinary hydrogen or deuterium, whose chemical reaction emits laser light. For more limited military purposes that require less power, lasers could be developed in even less time.

The U.S.S.R. already employed a chemical laser in 1981 in an experiment in which a ballistic missile was shot down. In 1972, in the U.S. military program Eight Card, some wood slabs were ignited at two kilometers distance with a gas laser of 60 kilowatts power. The same laser drilled a hole in a moving target of very small size. In 1976, a U.S. high power laser shot down a drone aircraft from a land-based position. In 1978, the U.S. Navy destroyed a high velocity antitank missile of the TOW type with a chemical laser, and in February 1983 a land-based Soviet laser irreparably damaged a U.S. satellite.

While I am not acquainted with experiments which use directed energy weapons systems other than lasers, I can say from a technical standpoint that particle beams make ideal weapons because they destroy the target like a heavy, very powerful little hammer. On the basis of these considerations and experiences, we can say that anyone who says these weapon systems are 20 years in the future does not have his feet on the ground. By experience I know that technical problems get resolved in the process of posing them. The important thing is political will.

Reagan presents his to the West German

In an interview published May 11 in Bunte Illustrierte, *one of West Germany's leading family magazines, with a circulation of several million, President Reagan explained to a European audience the concept of the anti-ballistic missile defense that he had announced on American television March 23. Reagan's interview, titled "President Reagan's message to the Germans," is excerpted here in a re-translation from the German.*

Bunte: In October it will be exactly 300 years since the first Germans immigrated to America. In your view, is there a special German element in American history? Which Germans do you most admire?

Reagan: Over 60 million Americans are of German descent. This heritage has a great influence on our national character. The strong hands and good hearts of the industrious German forefathers helped to build a strong and good America. Germany sent us heros for our revolutionary war, like Baron Johann de Kalb and Baron von Steuben, politicians, scientists and engineers—including Einstein and Roebling, whose 100th birthday is being celebrated this year; also artists, composers, theologians, businessmen, entrepreneurs, and great sportsmen like Babe Ruth. It is almost impossible to say who among them I most admire. German names fill our history books, appear on our maps and in the family trees of our family Bibles. . . .

Bunte: You have recently developed the idea of securing world peace with unconventional weapons. Can you explain this further? Critics fear that this will extend the battlefield of the earth into space.

Reagan: When I spoke about a strategic defense initiative in my speech of March 23, I indicated that during the past decades American deterrence policy has relied strongly, even exclusively, on offensive nuclear weapons. This deterrence concept is based on the premise that neither side would risk an attack due to the catastrophic consequences it would have. The price of such an attack would far exceed any conceivable gains. This concept has led on both sides, the U.S. and the Soviet Union, to the development of offensive nuclear weapons. I see the day coming when our trust in our offensive power fades and we recognize the possibility of an effective defense. Inter-continental missiles are the most threatening

defense strategy population

of all nuclear weapon systems, which upset the balance of forces in the most sensitive way. Measures to protect ourselves, our families and our countries from annihilation should be incentive enough for disarmament and to ease much of our anxiety.

Certainly the implementation of this concept will meet with objections and impediments. But the perspective of a nuclear holocaust, where each side aims a cocked gun at the other, is not acceptable. The development of a defense system could prevent our peoples from being hostages to the preservation of peace. Therefore, I have ordered a comprehensive examination of technologies and other areas dealing with defense in its broadest sense, in order to evaluate how our security and that of our allies can be guaranteed by such methods.

We do not propose any particular weapon system, but we have begun the basic research that could lead to a new development by the turn of the century. It is still too soon to advocate precise systems. During our research we will adhere to all existing treaties and will consult closely with our allies. We hope that defense systems against nuclear missiles, once they are developed, will be fully included in arms control measures.

No, we will not take the arms race into space. The Soviets are the only ones that have operational anti-satellite weapons. In 1979 they rejected our proposals to ban all such weapons, and they are continuing a comprehensive research program for space-based weapons. Unfortunately their deeds give the lie to their words about the peaceful use of space—words recently revived.

Bunte: Do you believe that a limited nuclear war in Europe is possible?
Reagan: Let me first stress that our policy is aimed at preventing conflicts and at settling differences of opinion by peaceful means. We and our allies will not use our weapons except in response to an attack. I do not believe that a limited nuclear war is possible.

During the entire postwar period, the United States has made it clear that the American inter-continental missiles are a component of the defense of Western Europe. In 1979 NATO strengthened this link with the so-called two-track decision, according to which intermediate range missiles would be stationed in five European NATO countries, unless an accord with the Soviet Union were to make the stationing unnecessary. The deployment of the Pershing II and the land-based cruise missiles will guarantee a full palette for the deterrence of Soviet aggression—from conventional weapons up to the inter-continental missiles stationed in the United States.

A convincing confirmation of how U.S. forces are coupled to the defense of Western Europe was provided by none other than Soviet Defense Minister Dmitri Ustinov, on April 6 in East Germany: "Should Washington think we would respond to an attack with the Pershings and cruise missiles only by retaliating against targets in Western Europe, it would be thoroughly mistaken. A counter-strike will inevitably follow against the U.S.A."

Like all NATO's weapons, the cruise missiles and the Pershing II would not have been developed but to deter war. If we maintain a balance of weapons, there will be no attack; and NATO will successfully preserve the peace for another four decades. . . .

Bunte: Mr. President, is there anything you would like to say to the Germans?
Reagan: The populations of the United States and the Federal Republic of Germany are bound together by their common values, convictions, and interests. Together we will face many challenges in the coming years.

I am convinced that these challenges will be successfully met thanks to our deep commitment to Western values, our deep trust in democracy and our faith in God. We are committed to the peaceful competition of ideas like individual and national freedom.

The Federal Republic and the United States have pledged themselves to the cause of peace. And we will maintain our defensive forces, which are necessary to guarantee our security. At the same time we will not neglect our efforts to reduce the danger of war through negotiations—in Geneva, Vienna, Madrid, and wherever we have the possibility to make progress to a more secure future. The United States has made proposals that were hailed by our allies and supported by the population of the Western democracies: proposals for the drastic reduction of warheads on intercontinental missiles, proposals for eliminating a whole class of nuclear weapons, for the banning of chemical weapons, for reducing to an equal number the Warsaw Pact's troops and NATO's troops in Western Europe, as well as a stop to the proliferation of nuclear weapons to unstable areas of the world, which endangers equilibrium.

I hope that the Soviet Union will join the German and American populations in our mutual striving, like that of the population of Poland, to erect a cathedral of peace—out of the deepest sense of duty and devotion.

As I said in a speech before the Bundestag in June of last year: "If we build peace conscientiously, it will last as long as the spires of the Cologne cathedral. . . ."