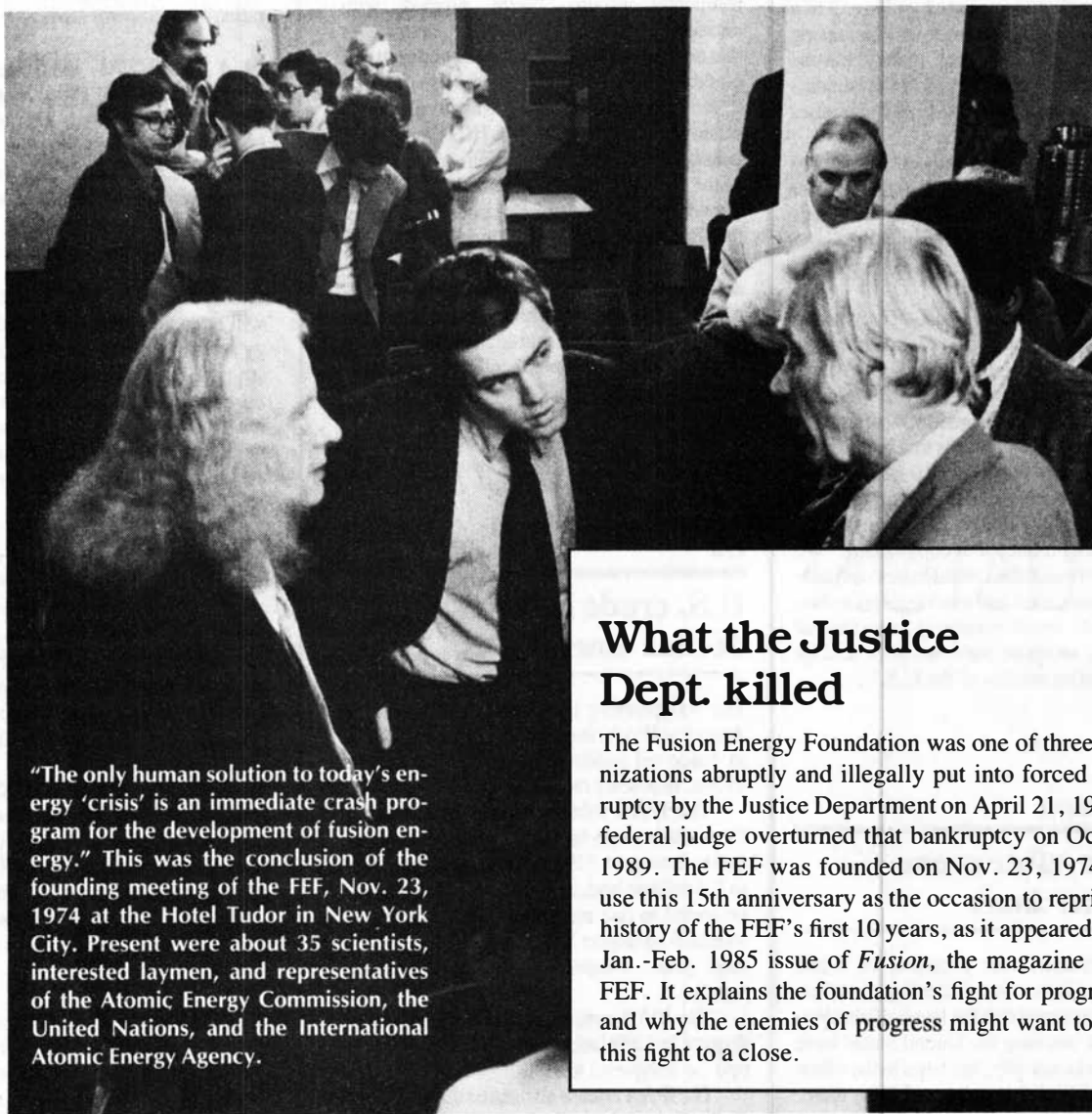


# The Fusion Energy Foundation

## 10 Years of Fighting for Progress



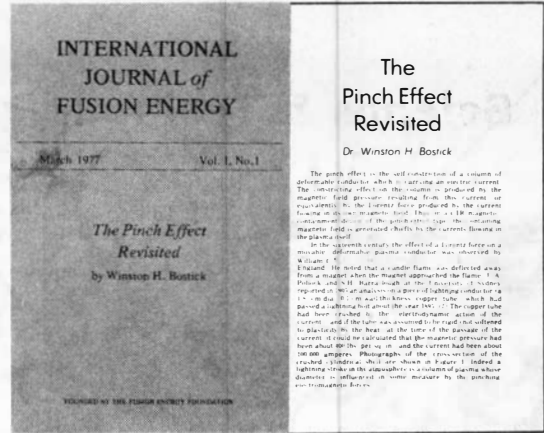
"The only human solution to today's energy 'crisis' is an immediate crash program for the development of fusion energy." This was the conclusion of the founding meeting of the FEF, Nov. 23, 1974 at the Hotel Tudor in New York City. Present were about 35 scientists, interested laymen, and representatives of the Atomic Energy Commission, the United Nations, and the International Atomic Energy Agency.

### What the Justice Dept. killed

The Fusion Energy Foundation was one of three organizations abruptly and illegally put into forced bankruptcy by the Justice Department on April 21, 1987. A federal judge overturned that bankruptcy on Oct. 25, 1989. The FEF was founded on Nov. 23, 1974. We use this 15th anniversary as the occasion to reprint the history of the FEF's first 10 years, as it appeared in the Jan.-Feb. 1985 issue of *Fusion*, the magazine of the FEF. It explains the foundation's fight for progress—and why the enemies of progress might want to bring this fight to a close.

Above: Charles B. Stevens (center), FEF director of fusion engineering, at the founding meeting talking informally with Dr. Robert Moon (left) and Dr. Winston Bostick, both members of the initial scientific advisory board.

In early 1975, the FEF began to sponsor conferences promoting fusion energy, nuclear power, and industrial development in major cities around the country, and by spring 1975, a bi-monthly FEF newsletter circulated to a few hundred subscribers. A theoretical journal, the *International Journal of Fusion Energy*, made its debut in March 1977, featuring Winston Bostick's discussion of plasma filaments—the self-ordered structures in fusion plasmas that many scientists said could not exist. Dr. Morris Levitt was the FEF's first executive director.

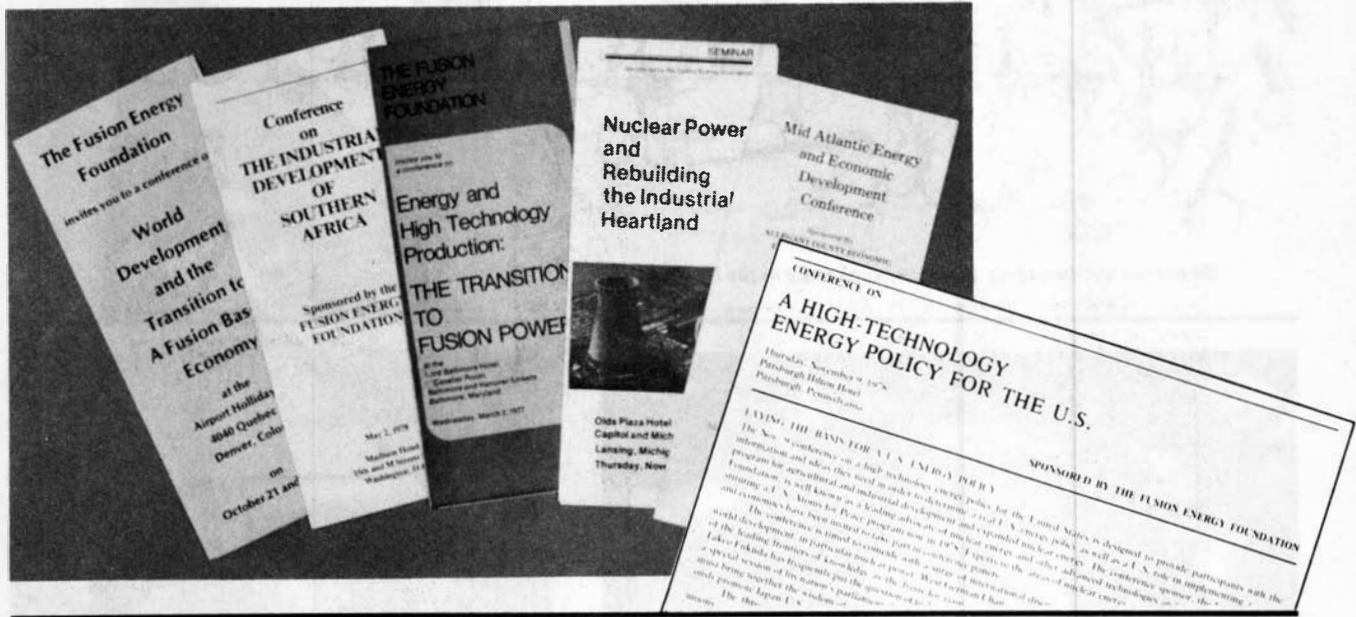


### The Pinch Effect Revisited

Dr. Winston H. Bostick

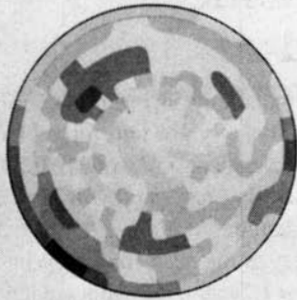
The pinch effect is the self-contraction of a column of deformable fluid in which is carrying an electric current. The inward effect on the column is produced by the magnetic field pressure resulting from the current. It is equivalent to the Lorentz force produced by the current flowing in one wire placed inside the other. In a 1.8 m diameter column of a pinch effect tube, the surrounding magnetic field is approximately 100 G. The current flowing in the pinch effect tube is approximately 100 A.

In the experiment, the effect of a Lorentz force on a magnetic deformable plasma conductor was observed by William F. Bostick. He noted that a plasma filament was deflected away from a magnet when the magnet approached the filament. The filament was deflected from the magnet by the Lorentz force. The Lorentz force is a force that acts on a current-carrying conductor in a magnetic field. The Lorentz force is a force that acts on a current-carrying conductor in a magnetic field. The Lorentz force is a force that acts on a current-carrying conductor in a magnetic field.



# FUSION

MAGAZINE OF THE FUSION ENERGY FOUNDATION



Conference on Nonlinearity Launches FEF Biological Sciences Division

\$1.50

July-August 1977

In July-August 1977, the FEF launched *Fusion* as a monthly magazine. The first issue featured presentations from the founding meeting of the FEF biological sciences section at Columbia University in New York, at which 200 biologists, mathematicians, physicists, and engineers discussed the need to take up the achievements of Riemann and Cantor and apply them to biological processes.

The FEF News section in the first issue reported how Energy Secretary James Schlesinger had waged a campaign to intimidate participants at an April 1977 conference on energy and technological development in Pittsburgh. The FEF obtained a temporary restraining order against such harassment, and 120 people attended the conference in a city that President Carter had selected as a model to set the pace for his deindustrialization and conservation policies.



Conference on Nonlinearity Launches FEF Biological Sciences Division

The conference on Nonlinearity, held at Columbia University in New York, was a landmark event for the FEF. It brought together leading scientists from various disciplines to discuss the implications of nonlinear dynamics for biological systems. The conference was organized by the FEF Biological Sciences Division and was a significant step in the foundation's commitment to interdisciplinary research.



"So you see Mr. President, there's no such thing as the E-beam."

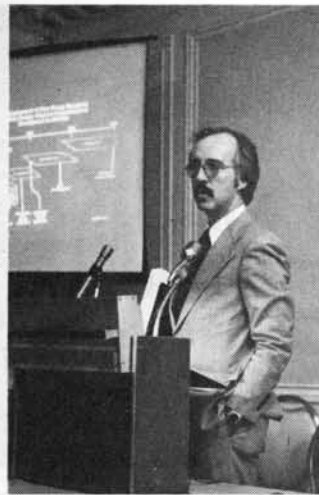
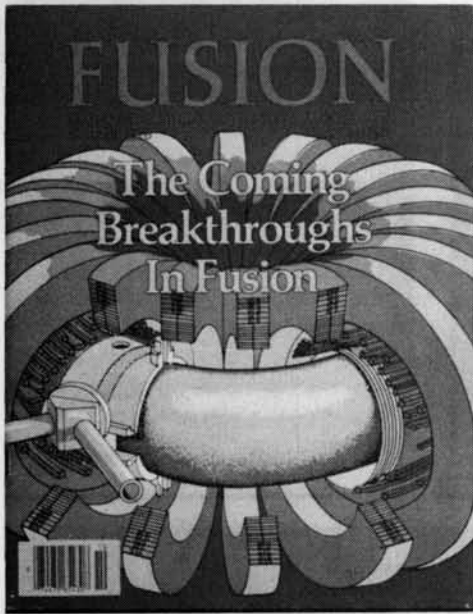
As early as 1977, the FEF advocated beam defense research. This pamphlet reported on how far in advance the Soviets were in beam research, and a cartoon in *Fusion* suggested one of the reasons that the United States lagged behind.

SPUTNIK OF THE SEVENTIES



The FEF campaigns for nuclear power, industrial development, advanced science and technology, and against the Malthusian ideas of the environmentalists quickly became international and *Fusion* magazine was initiated as a quarterly in German, French, Spanish, Italian, and Swedish.

(A) Nuclear power, yes! reads the buttons of FEF organizers in Sweden shortly before the March 1980 referendum on nuclear development there. (B) Cecilia Soto de Estevez, director of the Mexican Association for Fusion Energy, shows visitors the fusion technology display at a 1981 industrial fair in the state of Sonora. (C) Mayor Seib (at podium) joins Helga Zepp LaRouche (left) at a 1981 mass meeting in West Germany to support the Biblis nuclear plant.

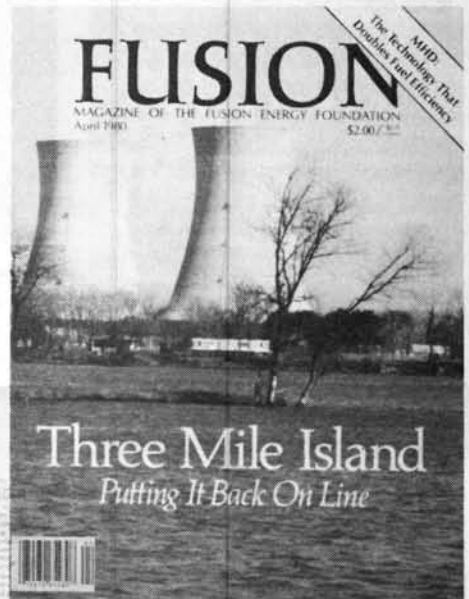


Above: John Clarke, associate director of the DOE Office of Fusion Energy, speaking at the FEF's annual meeting in 1978.

When the Princeton Large Torus reached record tokamak temperatures, upwards of 60 million degrees, during summer 1978, the FEF made sure that this news became world headlines instead of being kept in Energy Secretary James Schlesinger's closet. Pressure from the FEF forced the DOE to break its blackout with a press conference. The FEF followed up with a special *Fusion* issue on "The Coming Breakthroughs in Fusion" to let the world know the importance of the research result. At the same time that Schlesinger was downplaying fusion, he nixed a \$1 billion proposal from the Japanese to jointly develop fusion. Schlesinger's alternative? Coal liquefaction.



Above: The Fusion booth at the Houston airport.



Special Report

**The Harrisburg Hoax**

All-Out War on Nuclear Energy

1. The FEF States the Case for Sabotage
2. What Happened at the Three Mile Island Plant
3. The Crisis Chain of Command
4. Harrisburg: Facts and Fiction
5. The Big Lie About Radiation
6. The Lone Fonda Antiframer

**1** The FEF States the Case for Sabotage

The FEF has long been a vocal proponent of nuclear energy. In a recent issue of *Fusion*, the magazine published a special report titled "The Harrisburg Hoax: All-Out War on Nuclear Energy." The report, which was written by the FEF's executive director, John Clarke, and a team of FEF staff, is a scathing attack on the environmentalists who have been trying to shut down the Three Mile Island nuclear power plant. Clarke and his team argue that the environmentalists' actions are a "hoax" and that the plant is safe and reliable. They also argue that the environmentalists are trying to sabotage the nuclear industry and that they should be held accountable for their actions.

**2** What Happened at the Three Mile Island Plant

The Three Mile Island nuclear power plant is one of the most controversial nuclear power plants in the United States. It was built in 1974 and has since been the subject of numerous investigations and lawsuits. In March 1979, a major accident occurred at the plant, which resulted in a partial meltdown of the reactor core. This event, known as the Three Mile Island accident, is considered one of the most serious nuclear accidents in the world. The accident was caused by a combination of human error and equipment failure. The FEF's special report provides a detailed account of what happened at the plant and argues that the accident was a result of sabotage by environmentalists.

The Three Mile Island incident in March 1979 marked a turning point for the nuclear industry and for the FEF, which led an aggressive fight to expand the U.S. nuclear industry and debunk the propaganda of the environmentalists. *Fusion* organizers became a familiar sight at airports around the country, and the picket sign "Feed Jane Fonda to the Whales" became American history. *Fusion* sales reached 200,000 as it became the nation's only pronuclear science magazine.



Carlos de Hoyos

The FEF won the Freedoms Foundation George Washington medal for its *Fusion* magazine series exposing possible sabotage at Three Mile Island. Jon Gilbertson (right), then FEF nuclear engineering director, holding the medal at the award ceremony in June 1980. With him (from left) are Dr. Morris Levitt, then FEF executive director; Robert W. Miller, president of the Freedoms Foundation; and Marjorie Mazel Hecht, managing editor of *Fusion*.

When President Carter signed the Magnetic Fusion Energy Engineering Act into law Oct. 7, 1980, it provided the potential for the United States to launch another Apollo Project, this time to move the economy into the 21st century with an unlimited energy source and uncountable technology spin-offs. The law specified an engineering reactor to be built by 1990 and a commercial prototype by the year 2000. The FEF had waged a vigorous eight-month educational campaign to make the "McCormack bill"—known for its chief sponsor, Washington Rep. Mike McCormack—a reality.



Carlos de Hoyos

Above: Rep. McCormack addresses a May 1981 FEF seminar in Washington, D.C., on how the science budget cuts threaten national security. Right: One of the thousands of postcards fusion supporters sent to President Reagan urging him to implement the 1980 fusion law.

## FUSION

President Ronald Reagan  
The White House  
Washington, D.C. 20500

Dear Mr. President:

Indiscriminate budget cuts coupled with the high interest rate policy of Federal Reserve Chairman Paul Volcker threaten economic and military disaster. The United States is now in danger of losing its scientific and technological edge in space, fusion, and nuclear energy.

Continuing the commitment to progress that has made America great requires making long-term investments in science and technology research and development.

We urge you to act now to:

- (1) lower interest rates
- (2) fully fund the fusion budget to ensure that the nation can build a commercial reactor by the year 2000
- (3) provide full...



Carlos de Hoyos

Above: Dr. Gottlieb at the podium. Seated at left is FEF research director Uwe Parpart Henke.

More than 350 fusion supporters gathered at a banquet sponsored by the FEF in February 1981 to honor Dr. Melvin Gottlieb, who had recently retired as the director of the Princeton Plasma Physics Laboratory. On hand to recount the history of the fusion program and Gottlieb's pioneer role were three generations of fusion scientists—including Gottlieb's college physics teacher, Dr. Robert Moon, and one of Gottlieb's former graduate students, Dr. William Ellis, then director of the Mirror Systems Division at the DOE Office of Fusion Energy.

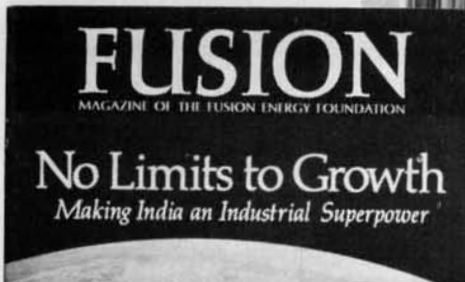


TABLE 1  
INDIA'S NUCLEAR ENERGY

INDIA'S NUCLEAR ENERGY program is the result of a long and steady process of development. The program is based on the concept of a self-sustaining nuclear power system. The program is designed to meet the country's growing energy needs and to provide a secure and reliable source of power.

The program is based on the following principles:

- 1. To develop a self-sustaining nuclear power system.
- 2. To provide a secure and reliable source of power.
- 3. To meet the country's growing energy needs.

The program is designed to be a model for other developing countries.



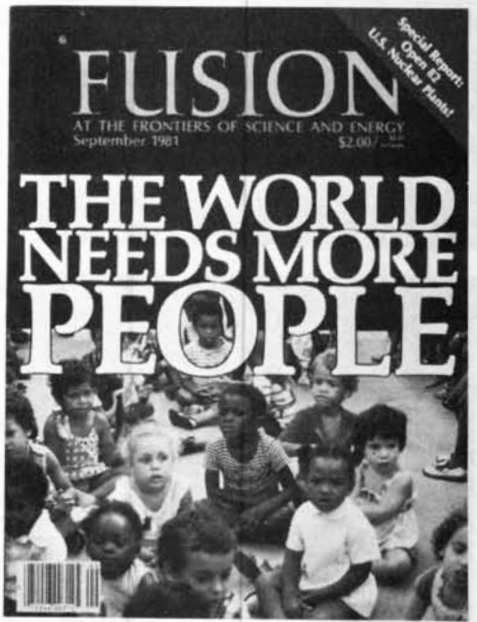
Around the world, the FEF countered the gloom and doom of the zero-growthers by demonstrating that there are no limits to growth. As long as economies operate with a science driver, introducing new technologies into industry at a rapid rate, they will create new resources. The FEF jointly developed the LaRouche-Riemann economic model with the *Executive Intelligence Review* magazine and used the model to design specific development strategies for several countries.

The science behind the LaRouche-Riemann model was introduced in the July 1979 *Fusion*. A 40-year plan to make India into an industrial superpower was presented in May 1980. The FEF showed that Malthus and his successors at the International Monetary Fund and the World Bank were wrong: Cutting population growth and barring investment in high technology would not even hold the miserable status quo. Instead, the FEF proposed a bold program in investment in high technology and infrastructure and a vast upgrading of the population's material and cultural level to transform India.



世界人口は足りない  
西暦2000年の地球の虚偽を斬る  
フュージョン誌

その悪名高きレポート「西暦2000年の地球」は、地球の人口は多過ぎると結論した。だがそれは、本当に人口が多過ぎるからではなく、レポートの著者が、科学や技術の発展を阻害する政策を推し進めたことにほかならない。世界人口は、今、不足しており、その状態が、続くと...



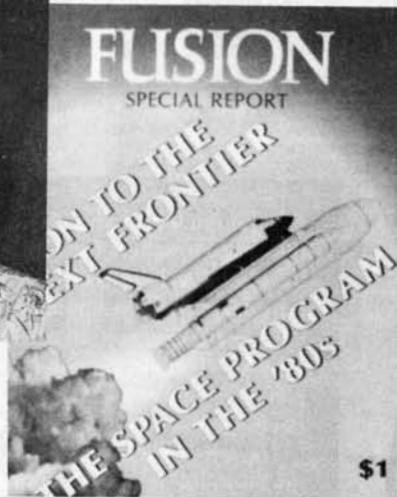
The *Fusion* feature was reprinted in Japanese in the popular science magazine *Cosmos 82*. Inset: FEF research director Uwe Parpart Henke (at podium) debated Nicholas Yost, one of the principal architects of the Carter administration's *Global 2000 Report*, before an audience of diplomats, government officials, and university professors. Yost stated, "We have to choose between despair, hopelessness, and total extinction," while Henke documented why "a newborn child is the principal asset of the human race, not a threat to the existence of the living."

With its September 1981 *Fusion* cover proclaiming "The World Needs More People," the FEF took center stage in attacking the Carter administration's *Global 2000 Report*. The critique made headlines around the world.



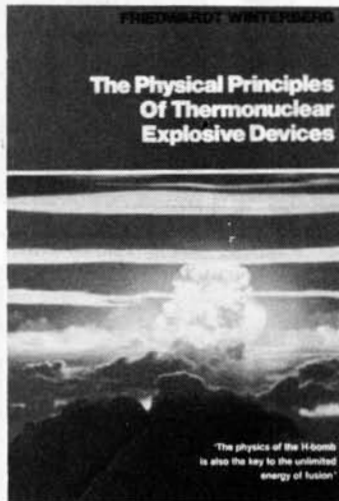
Stuart K. Lewis

Above: Marsha Freeman, Fusion's Washington editor, with astronaut Crippen.



With the successful flight of the Columbia Space Shuttle in April 1981, the FEF opened a renewed campaign for space development. *Fusion* published an exclusive interview with astronaut Robert Crippen, pilot of the first Shuttle flight, and issued a special report "On to the Next Frontier: The Space Program in the '80s." The report outlined an aggressive NASA program including a manned space station, colonization of the Moon and Mars, and accelerated planetary exploration. "The final issue is, where are we going with our civilization? . . . We are talking about the movement of civilization into space," said Sen. Harrison Schmitt in his introduction to the report. The details of how to do this were elaborated in the December 1981 *Fusion* in a cover story by renowned space scientist Krafft Ehrlicke on colonizing and industrializing the Moon.

In August 1981, the FEF published a book by fusion scientist Friedwardt Winterberg demystifying the science of the H-bomb and describing the basic physical principles upon which the most concentrated energy source—inertial confinement fusion—as well as the most destructive weapon are based. As Winterberg says in his introduction to *The Physical Principles of Thermonuclear Explosive Devices*: "there are no secrets surrounding thermonuclear explosive devices. . . all the basic physics is accessible in the open, published scientific literature. . ."



Stuart K. Lewis

Busemann chats with Carol White, then FEF education director.



Carlos de Hoyos

Above: Adolf Busemann at the podium. "I am very pleased to sit here today and hear that my ideas from many decades ago are still working and doing more than I ever would have thought about," he said with characteristic modesty and humor. He briefly described his early work at Ludwig Prandtl's institute at Göttingen in the mid-1920s on supersonic flows and his prediction of the behavior of crossing Mach waves during high speed flight. With him (from left) are Dr. Krafft Ehrlicke, Mrs. Ingeborg Ehrlicke, fusion scientist Dr. Friedwardt Winterberg, and plasma physicist Dr. William Grossman.

In November 1981, the FEF brought together an outstanding group of scientists at an awards dinner to honor Dr. Adolf Busemann, a pioneer in aerodynamics and one of the most outstanding exponents of Bernhard Riemann's hydrodynamic method in this century. The FEF tribute to Busemann in his 80th year was both a celebration of the classical tradition in science that Busemann represents and a call to renew the commitment to restore excellence in American science education.

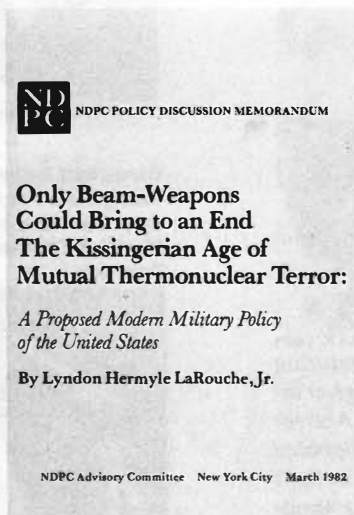


One of the weapons the FEF used in the war against scientific illiteracy was a new magazine, *The Young Scientist*, which is now incorporated into *Fusion*. The magazine got rave reviews—except from the ultraliberal environmentalists who thought it was “biased” to teach children that progress and growth were good.



Stuart K. Lewis

Above: Two New York junior high school students, Michael Masterov (left) and Yaroslav Shoikhet, who, inspired by the first issue, built a model tokamak and won first prize in the national SEER science competition sponsored by the National Energy Foundation.



Above: LaRouche's March 1982 pamphlet on beam weapons.

More than a year before President Reagan made his historic March 23, 1983 speech proposing the development of new technologies to overturn the era of Mutual Assured Destruction, the FEF, led by board member Lyndon H. LaRouche, Jr. had been advocating a crash program to develop directed energy beam technologies, and the FEF wrote proposed legislation to carry out this new Apollo program. The FEF also waged a vigorous organizing campaign against the nuclear freeze movement.

Left: The Seattle Daily at Washington University featured the FEF campaign against the freeze.



While much of Washington and the scientific community was stunned by the President's speech, and the press immediately began to ridicule it as "Star Wars," the FEF quickly mobilized to educate the nation about beam defense. FEF executive director Paul Gallagher appeared on CBS national television news supporting the President's proposal, and showing graphics drawn by the FEF depicting what beam weapons are. The FEF launched a national campaign with scores of media interviews and debates on the subject, plus a major conference in Washington April 13 that drew more than 600 people. Additional conferences were held in all the capital cities of Western Europe, involving many scientists and military representatives.



Stuart K. Lewis

Top right: An Associated Press story featuring Uwe Parpart Henke. Inset: Paul Gallagher interviewed at the FEF office by CBS TV. Above: Steven Bardwell (at microphone) debates anti-beam-spokesmen Richard Garwin (left) and John Parmentola. The event was sponsored in April 1983 by the N.Y. chapter of the American Institute of Aeronautics and Astronautics.

In October 1983, Aero Publishers released the FEF's *Beam Defense: An Alternative to Nuclear Destruction*, the first popular book on the subject. *Beam Defense*, which has also been published in Japanese by Jiji Press, won the top award of the Aviation/Space Writers Association in May 1984.

# Laser weapons

## Scientist claims they'll provide foolproof missile defense soon

By FRED S. HOFFMAN  
AP Military Writer

WASHINGTON (AP)—The United States could have within 10 to 12 years a space-based system of laser weapons that would afford the entire country a "foolproof" defense against missile attack, according to the research director of a foundation, which has explored the concept since 1977.

A more limited ground-based system that could defend key command centers and important bases, could be achieved in 20 years, said Dr. Uwe Parpart, who heads research for the Fusion Energy Foundation in New York.

Parpart said he could not estimate the total cost of such a defense, but estimated it ultimately might cost the United States to spend about \$3 billion.

His proposition for a national space-based laser system against missile attack from the Soviet Union is considerably more optimistic, President Reagan's. Last week he expressed hope for such a defense of the country. He did not say this program is a high priority.

Parpart said the foundation is interested in what are called Energy Weapons in 1977 as from its principal concern to such energy.

### Defense shift

"A ballistic missile defense system would begin to shift strategic equations and get us mutually assured destruction and policy," said Parpart in a phone interview.



Dr. Uwe Parpart of the Fusion Energy Foundation (AP Wirephoto)

"If we want a full, foolproof area defense of the United States, that clearly is a major defense in the future, possible in 12 years," Parpart said.

On the other hand, a more limited system that could defend key targets, he would expect the United States could be accomplished in five to seven years, probably even.

Parpart said the first phase of such defense could be built around a ground-based laser device which would shoot laser beams into space to be reflected off orbiting mirrors to strike Soviet missiles as they move upward in their ballistic trajectory enroute to the United States.

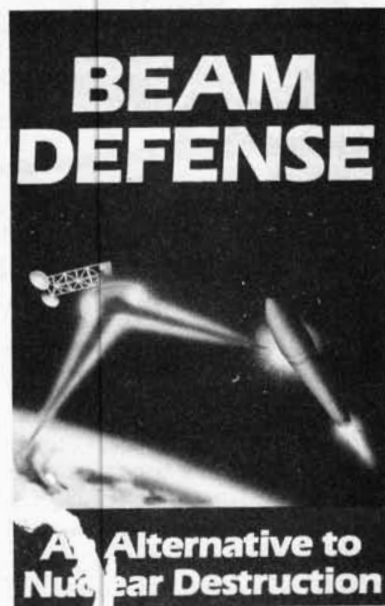
### X-ray lasers

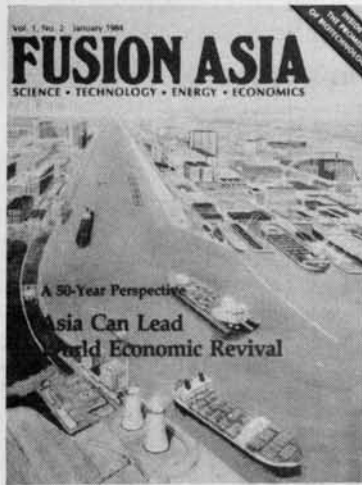
In a second phase, Parpart said the United States could put in operation a space-based system using X-ray lasers. With such X-ray beams, Parpart said, "You would only have to point and shoot."

He said a laser eye quick-setting, setting off a shock wave when striking the jet engine.

## Directed Energy Beam Weapons Technologies Can End the Era of Mutual Thermonuclear Terror

The Military, Economic, and Strategic Implications of Energy Beam Weapons





During 1983-1984, the FEF greatly expanded its organizing presence in Asia with the addition of *Fusion Asia* magazine, an English-language quarterly edited in New Delhi, India, by Ramtanu Maitra, and distributed throughout Asia. The FEF opened an office in Bangkok, Thailand, and sponsored two large and successful science conferences there, one on beam defense and the other on the development of a sea-level canal through the Isthmus of Kra. In addition, the FEF held several seminars in Japan on beam defense and a conference on laser technology in Bombay.

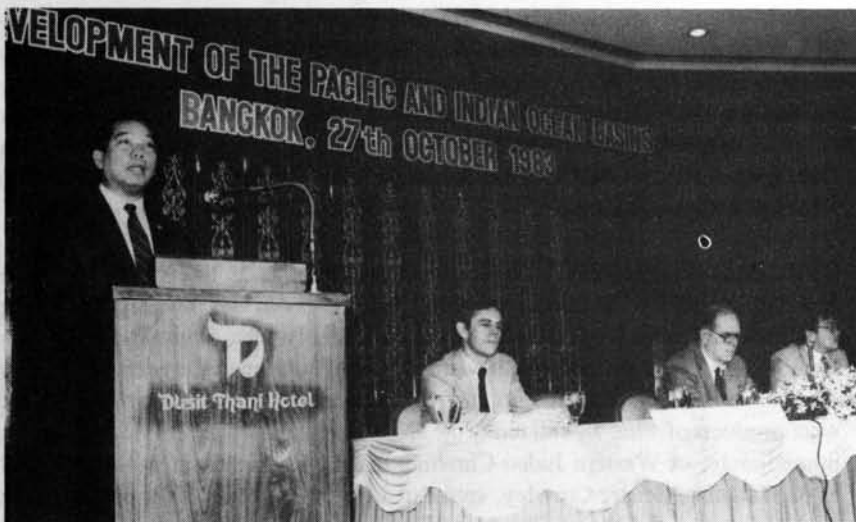
## In Memoriam Dr. Robert J. Moon

Robert James Moon, professor emeritus at the University of Chicago, a scientific collaborator of imprisoned statesman Lyndon LaRouche, and a founding member of the Fusion Energy Foundation, died in Chicago on Oct. 31, at the age of 77. Dr. Moon, a great scientist and devout Episcopalian, is survived by three daughters and a son, and will be buried in his boyhood home town of Springfield, Missouri.

In the days before his death, Dr. Moon was busy collaborating with friends from the FEF, on plans to revitalize the foundation's work, following the Oct. 25 court ruling dismissing the government's 1987 involuntary bankruptcy of FEF. He had greeted the news of the reversal with characteristic joy: "Hallelujah, and Praise the Lord! Now let's get him [LaRouche] out" of prison.

Dr. Moon was a member of the Manhattan Project, and continued for five decades to work in frontier areas of nuclear science. In a 1985 interview in *Fusion* magazine, he told why he helped found FEF in November 1974.

"First, I wanted to bring before the public worldwide the fact that energy is a key ingredient in the well-being of any society and that we had to increase our energy resources in order to expand our populations. Second, energy from combustion had reached a state of equilibrium. . . . Third, we wanted to encourage a greater exchange of ideas on advanced nuclear energy—fission and fusion—among those engaged in research in these fields. The fourth point, very important, is that we wanted to encourage new ideas and an understanding of phenomena on the frontiers of science, especially fusion energy and related processes."



Top: LaRouche (center) and Henke visit the High-Energy Physics Laboratory at Tsukuba City in Japan. FEF's theoretical publications have influenced the development of Japan's laser fusion program, in particular. Dr. Chiyo Yamanaka, head of the Institute for Laser Engineering at Osaka University, is on the scientific advisory board of Fusion and Fusion Asia. Above: Thai communications minister Samak Sundaravej speaking at an October 1983 conference on the development of the Pacific and Indian Ocean Basins. With him (from left) are Uwe Parpart Henke, Lyndon H. LaRouche, and FEF coordinator in Thailand, Pakdee Tanapura.