

Blinding lasers and the murder of Diana

by Charles B. Stevens

Ironically, a weapon whose banning had been sought in conjunction with the banning of land mines—an effort which Princess Diana had joined so prominently in the last months of her life—may have played the key role in her vehicular homicide. This is the blinding laser weapon, or dazer. There are continuing witness reports that an intense flash of light was seen in the tunnel shortly before the car crash that killed the Princess on Aug. 31.

The International Committee of the Red Cross (ICRC), one of the leading organizations involved in the campaign to ban both land mines and blinding laser weapons, notes in its 1995 brochure, “*Blinding Weapons: Gas 1918 . . . Lasers 199?*”: “Within a few years, soldiers, police and even civilians may encounter a new and haunting force on the battlefield and on city streets—blinding laser weapons. These are portable, highly effective and could become widely available. If these blinding weapons proliferate, they are bound to get into the wrong hands. . . . The fact that they are small, light and require no ammunition will make low-energy laser weapons attractive to insurgency movements, terrorists and criminal organizations. In addition, lasers are silent, invisible and leave no ballistic evidence.” (For more details see *Blinding Weapons*, a book published by the ICRC in 1993.)

A second irony is the fact that the first known deployment and use in combat of blinding laser weapons was carried out by the British in their war against Argentina in 1982. This was the “Laser Dazzle Sight,” which had been placed on ships of the Royal Navy. This system is officially known as the Outfit DEC and was used to dazzle the electronic and optical sensors of attacking aircraft and missiles.

The use of optical weapons in warfare is by no means a recent development. It is reported that Archimedes designed mirrors to be utilized against attacking Roman galleys in the siege of Syracuse. Marshal Zhukov flashed tens of thousands of anti-aircraft search lights into the eyes of German defenders in the opening stages of the Battle of Berlin, at the end of World War II. Magnesium- and aluminum-powered star shells and “flash grenades” have been utilized extensively throughout the 20th century. Recently it was reported that a Russian merchant ship had used a blinding laser weapon against a Canadian Sea King.

The more recently developed laser technology and the

closely related monochromatic fluorescent flash lamp, such as the xenon arc-light, have the distinct advantage that they concentrate energy at single wavelengths—distinct colors—and can therefore produce blinding effects at very low-energy outputs. In the case of lasers, their light can be concentrated into narrow beams and directed at targets over large distances. (Though it should be emphasized that the laser light need not be concentrated in a narrow beam; an omnidirectional burst can also be quite effective as a blinding weapon.) Furthermore, countermeasures to such blinding laser weapons are quite difficult to implement, since the laser jumps to alternative wavelengths, not affected by the countermeasures.

Current status

A good summary review of information on blinding laser weapons in the public domain is to be found in John Knowles’s article “Early Morning DEW: Directed Energy Weapons Come of Age,” in the *Journal of Defense Electronics*, October 1996. He reports that the United States had developed at least ten types of blinding laser weapons by 1995. For several decades, non-destructive, low-power lasers have been utilized as range-finders, target designators, and communications links. Blinding laser weapons were first introduced as a countermeasure to these systems. The close-combat laser weapon C-CLAW was introduced in order to blind enemy sensors. The U.S. Army version of this is the Stingray, a vehicle-mounted electro-optic countermeasure device.

Other systems have been developed by Russia, China, France, Great Britain, Germany, and Israel. Among these are the Laser Countermeasure System, made by Lockheed Sanders, which mounts on a M-16 rifle and is designed to impair the vision of an opponent. The Saber 203 rifle-launched “laser grenade,” which was developed by the Air Force Phillips Laboratory, was deployed with the U.S. forces in Somalia in 1995. The Dazer is a man-portable device, which was developed by the Allied Signal Electro-Optical Products Division, and deployed with the U.S. Special Operations Command. Los Alamos National Laboratory developed the Dazzle Laser system for use against low-flying aircraft and missiles. A 40 mm artillery round has been developed which carries a plastic-encased laser dye rod. Upon impact, the rod creates an exceptionally intense, isotropic, omnidirectional flash, which blinds surrounding electro-optical sensors, as well as human observers.

And while, according to Knowles, “mounting pressure from human rights groups and governments such as Sweden” has led the United States to halt “almost all development” of these laser weapons, “other countries such as France, Britain, Russia, Germany and Israel are believed to have pursued EOCD or antipersonnel laser programs.” Knowles quotes a leading U.S. military expert: “Relatively effective laser weapons can be derived quite simply by any nation or organization from commercial laser devices. . . . Accordingly, we believe the threat to be quite real. . . .”