of exposure," with mandatory testing only for donors of blood, tissue, and organs. Watkins agrees, but goes further in his recommendation that sexual offenders "submit to an HIV test at the earliest possible juncture in the criminal justice system," a move that the American Civil Liberties Union, for example, opposes.

Another politically loaded question about testing is who should be notified of the results. To more accurately measure the prevalence of HIV infection, Watkins believes that the Centers for Disease Control (CDC), the federal agency that tracks the epidemic, should be informed of all HIV antibody test results, though identifiers should be removed. However, the academy committee fears that mandatory reporting might discourage some individuals from being tested, and as such, should not be required.

What about sexual partners of infected persons? The academy panel believes that voluntary sexual contact notification can play a useful role. Watkins would like to see partner notification programs target those who would not know they were at risk of HIV infection. As an example, Watkins says that an unknowing wife of a bisexual infected with HIV should be informed by the government if the husband refuses to tell her of his infection. In a similar vein, Watkins wants to make it a crime to "knowingly engage in behaviors which are likely to result in HIV transmission."

In its interim report issued in February, the Presidential Commission proposed spending about $1.5 billion a year for 10 years to stem the AIDS epidemic among the country's estimated 1.1 million intravenous drug users, offering "treatment on demand" at 2500 new facilities (*Science*, 4 March, p. 1087). The academy committee agrees, and reports that "the gross inadequacy of federal efforts to reduce HIV transmission among IV drug abusers . . . is now the most serious deficiency in current efforts to control HIV infection in the United States."

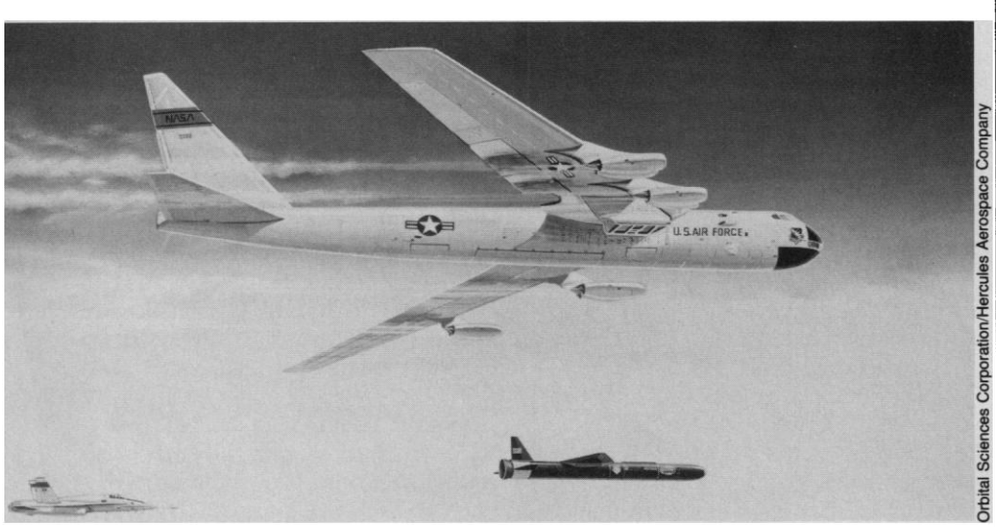
Finally, the academy report suggests that a standing AIDS advisory committee be established to make recommendations to the government and monitor the nation's response to the epidemic. The panel concludes: "HIV infection is a rapidly moving target; a sustained, well-guided effort is needed if we are to remain attentive to its course and thwart its effects."

■ WILLIAM BOOTH

Pentagon Boosts a Small Rocket

Two aerospace firms officially announced on 3 June that they are jointly developing a new commercial launch vehicle: the Pegasus, a booster that will be carried aloft and launched from a conventional aircraft in much the same manner as the old X-15 rocket plane, which it closely resembles.

The partners—the Orbital Sciences Corporation of Fairfax, Virginia, which was formed 6 years ago to develop booster rockets for space shuttle payloads, and the Hercules Aerospace Company of Wilmington, Delaware, which has been making solid-fueled missile stages for more than 30 years—also announced on 3 June that their first customer will be the Defense Advanced Research Projects Agency, which has selected the Pegasus to launch a series of small experimental satellites starting in the summer of 1989. For those first flights the rocket will be launched from the same modified B-52 that the National Aeronautics and Space Administration (NASA) used for the X-15 program; for later flights the partners plan to procure and modify a commercial airliner.



Orbital Sciences Corporation/Hercules Aerospace Company

Pegasus at launch. *An artist's conception of the booster's maiden flight next year.*

According to Orbital Sciences and Hercules spokesmen, the three-stage, solid-fuel booster will have a payload capacity of about 150 to 500 kilograms, depending upon the orbit, or about twice the capacity of an identical rocket launched from the ground. Its cost of roughly $6 million will accordingly be about half that of a ground launch.

At those prices, Orbital Sciences president David Thompson told *Science*, one can envision research teams launching small scientific satellites far more frequently than they do now—within the time frame for a typical Ph.D., for example—and for only a fraction of the current cost. The possibilities include astronomical instruments put up at short notice to monitor transient phenomena such as the recent supernova, and compact materials processing packages that can be brought back into the atmosphere and retrieved.

In fact, says Thompson, Pegasus can even launch payloads of up to 70 kilograms on trajectories to comets, asteroids, and the moon. The company has had some preliminary discussions with NASA about using the Pegasus for such missions.

More generally, the partners see a potential market for about 12 government payloads per year in Pegasus' weight range, mostly for NASA and Defense Department research, and a somewhat hazier market for roughly another dozen commercial and international payloads, mostly communications, remote sensing, and materials processing.

To keep the costs low and the performance high, the Pegasus will be fabricated almost entirely out of a high-strength carbon composite material, and will be built at Hercules' new automated rocket plant near Salt Lake City. More savings come from the fact that the Pegasus will be launched from an aircraft flying at an altitude of 12 kilometers instead of from the ground. For example, aerodynamic drag is minimized because the vehicle is already above 75% of the atmosphere when it starts, and the need to fight against gravity is minimized because a stubby wing on the first stage generates lift. In addition, the carrier aircraft can take off from any convenient airport, fly out over the ocean where no one will be endangered and fire the Pegasus into any desired orbital inclination. The result is a substantial reduction in the constraints that help make a ground launch so expensive.

■ M. MITCHELL WALDROP