that "there is one reason for our current problems with readiness and sustainability: a lack of appropriate funding for the last ten years." He estimates that $17.6 billion for spare parts and munitions, plus some additional money for repair technicians, will resolve the Air Force's equipment troubles.

This view is shared, to some extent, by the Reagan Administration, which considers readiness to be the hottest topic in the ever-changing cycle of defense priorities. Reagan intends to buy the same weapons and supporting equipment that former President Carter did, but more quickly and in far greater quantities. Officials say that having more equipment around will make the failure of individual items less worrisome; technicians can, among other things, more easily cannibalize spare parts from working units, a common practice among crews tending the F-15. And the costs of specific weapons may decline as a result of accelerated production schedules, even if the total cost of each system is much higher. Under the Carter budget, for example, the Navy was to build two EA6B radar-jamming aircraft at a cost of $60 million apiece. Reagan plans to build six, and the resultant production economies dropped the individual cost to less than $30 million. In this manner has the initial battle against expensive, unreliable weaponry been joined.

Increasingly, experts believe that more systematic changes in the defense procurement system may be necessary. One view holds that weapons are just too complex, and that the only solution is to strive for greater simplicity. The most cogent statement of this view has emerged from within the Defense Department, of all places. Franklin Spinney, a DOD program analyst and former Air Force engineer, recently told a Senate subcommittee that the military's pursuit of technological sophistication at any cost has caused it to ignore human contributions that account for numerous weapons failures. In a report that prompts criticism from other Pentagon officials, Spinney writes that "our bias toward short-term investments in weapons of increasing complexity is the cause of our long-term cost growth."

Pentagon planners are repeatedly seduced by the notion that "advancing technology will . . . provide revolutionary increases in capability," Spinney says. Actual combat experience is disappointing, either because capabilities are exaggerated during a weapon's design or because the advantage offered by new technology proves to be slight. This was

(Continued on page 312)

Identifying the Dangerous Individual

If the Secret Service had interviewed John Hinckley before his alleged attempt to assassinate President Reagan, would he have been identified as potentially dangerous?

Even before the latest assassination attempt, the agency was worried about its methods for identifying people who pose a danger to its "protectees." Last September the Secret Service asked the Institute of Medicine (IOM) to review the literature on violence-prone individuals and come up with some recommendations to improve its screening system. The committee of lawyers and behavioral scientists, headed by Walter Menninger of the Menninger Clinic, held a 2-day workshop in early March. Its report is due in July.

The committee has a difficult task, because it is well known that the best—and perhaps only—predictor of violence on the part of an individual is past acts of violence. Asked what sort of research might yield other indicators, committee member Elissa Benedek of the University of Michigan suggested that "we can begin to look at particular diagnostic categories of mental illness where there is more likelihood" of dangerous behavior. But she emphasized that this might result in only marginal gains in understanding since the vast majority of mentally ill persons are not dangerous.

Secret Service spokesmen told *Science* their organization used to be guided by an assassin's profile of sorts, which was a composite of Bremer and Oswald types—that is, the lone, maladjusted young male. But then Squeaky Fromme and Sara Jane Moore, the two women who tried to shoot President Ford, blew that away. The agency keeps a list of about 350 individuals who are regarded as definitely dangerous, and whose whereabouts it likes to know—an easy task because the vast majority are institutionalized. The primary way suspicious characters are identified is through threatening letters to the protectees. Every time the Service hears about such threats, voiced or written, they track down the perpetrator for an interview. If an individual seems unbalanced, he is asked to undergo a psychiatric evaluation. Current procedures, however, appear to be inadequate. Secret Service spokesman Jim Boyle suggests that there "may be some way that therapy can be arranged" for violent loners who write threatening letters to the President.

IOM committee member Saleem Shah, who heads the National Institute of Mental Health's Center for the Study of Crime and Delinquency, says that the base rate of political assassinations is so low that experts can never expect to achieve success in predicting likely assassins. Officials have little more to go on than they did in 1969, when the National Commission on the Causes and Prevention of Violence came up with the following list of attributes of presidential assassins and would-be assassins: male, white, foreign-born or with foreign-born parents, slight of stature, loners who can't hold a job or maintain a relationship. Typically, they come from broken homes with absent or unresponsive fathers, zealously adhere to some cause, use a handgun for the murder attempt, and select a moment when the President is appearing before a crowd, thus making their act very public and virtually assuring their own apprehension. That Hinckley fits some of these categories and was still able to do what he did, emphasizes the difficulty of the Secret Service's task.—***Constance Holden***

FDA, NHTSA Appointments

The Reagan Administration has made several recent appointments of interest to the scientific and medical community.

Arthur Hayes, Jr., a physician and expert in the therapeutic uses of drugs, has been nominated as director of the Food and Drug Administration (FDA). Hayes, 47, currently teaches at the Pennsylvania State University Hershey Medical Center, where he specializes in research on drugs to treat hypertension. He is the immediate past president of the American Society for Clinical Pharmacology and Therapeutics.

Hayes's background seems well suited to the tasks he will confront. He has a masters degree in politics, philosophy, and economics, earned at

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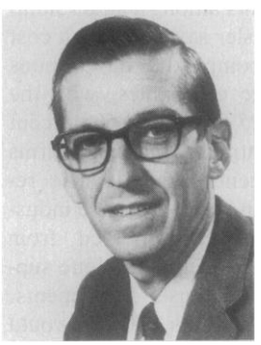
Oxford University as a Rhodes Scholar and a Danforth fellow. He earned his medical degree at Cornell, where he became an assistant professor and eventually an associate dean.

He has testified before a congressional committee that he believes the current drug approval process takes too long and requires acceleration—a view that puts him in agreement with the Administration's general emphasis on deregulation. But a colleague at Hershey says that Hayes sees most drug issues with "a great sense of balance. He can see the viewpoints of physicians, patients, and the drug companies." He once served as a consultant for the drug firm Hoffmann–La Roche.



Arthur Hayes, Jr.
Will head FDA

Jere Goyan, the previous FDA director, says that Hayes has "good scientific credentials." Goyan had appointed Hayes to a search committee for a new director of the agency's Bureau of Drugs.

In a somewhat less obvious choice, the Administration has selected Raymond Peck, a vice president of the National Coal Association, to be the new director of the National Highway Traffic Safety Administration. Peck, an attorney with previous government experience, says that he favors more use of cost-benefit analysis in automotive regulation, an end to federally mandated fuel economy standards, and only voluntary installation of auto airbags for passenger protection.

A spokesman for the American Trauma Society, a group of medical experts and businessmen, expressed concern at the confirmation hearing that Peck "may reduce monitoring of dangerous design flaws in automobiles . . . and diminish attempts to design a crash-proof automobile." A representative from Physicians for Auto Safety commented that Peck "might just as well have been appointed Surgeon General." Peck's former employer, the coal lobby, has also contributed senior vice president Glenn Schleede to the Office of Management and Budget, where he is the third-ranking official under Dave Stockman.

The Administration has appointed Edward Noble, a Tulsa oil executive, as the new director of the Synfuels Corporation. Noble replaces John Sawhill, who was previously deputy secretary of energy and a president of New York University.

—R. Jeffrey Smith

Yale Adopts Plan to Handle Charges of Fraud

Yale medical school has instituted a new procedure for dealing with charges of fraudulent research, according to Philip Felig, a professor at Yale who recently testified at hearings on data falsification held by a House science and technology subcommittee. The new procedure takes adjudication of the charges out of the hands of the accused. Last year, Felig's career and the Yale campus were shaken by an administrative imbroglio (*Science*, 3 October 1980) in which charges leveled against Felig and a data-fabricating colleague were basically ignored for 1 year, in part due to Felig's continuing assurances that his associate's work was credible. Says Felig: "Recent events indicate that trust may be misplaced. Consequently, mechanisms should exist within an institution for a review process which takes the matter out of the hands of involved investigators."

At Yale, any charges arising in the future will be reviewed by an ad hoc committee of senior faculty not involved with the research, according to Samuel Thier, chairman of the department of medicine. They will review charges and data and pass judgment on the credibility of the work. During the evaluation, none of the data may be published, and the results of all reviews will be shared with the accuser. If the charges are substantiated, institutions sponsoring the research will be notified.

Thier says this protocol has been adopted by the department of medicine and that chairmen of other departments have adopted similar procedures.—***William J. Broad***

Exxon Scraps Motor Device

The Exxon Corporation has renounced its highly publicized alternating current synthesizer, an energy-saving device for electric motors. In 1979, Exxon announced that the synthesizer could result in conservation of 400,000 barrels of oil a day if widely used by industry (*Science*, 16 November 1979, p. 773). The company had announced at the same time that it was acquiring the giant Reliance Electric Company in order to swiftly bring the invention to market. The $1.8 billion purchase generated controversy in Congress, which was then considering legislation to make oil companies spend the fruits of price decontrol on searches for more energy instead of on profitable mergers.

After 2 years of study with the help of Reliance engineers, Exxon says that its device has a faulty design, rendering it costly and unreliable in practical use. The company's argument now is that only by acquiring Reliance would they have learned of these flaws.

Meanwhile, the Federal Trade Commission (FTC), which is suing Exxon to force divestiture of Reliance, has uncovered an internal Exxon document that lends support to the idea that the synthesizer development was crafted as a fig leaf to cover the controversial acquisition. A memo from a vice president of Exxon Enterprises, a subsidiary, to George Piercy, a vice president of Exxon itself, suggests that Reliance was picked as the result of a study of possible corporate acquisition targets. "We then realized the advantages for commercializing the energy-saving device," the memo reads.

The memo would appear to contradict Piercy's 1979 congressional testimony that "consideration of acquisition of Reliance Electric began as a means of commercializing" the synthesizer technology. The FTC's suit against Exxon will probably not be resolved for several years.

—R. Jeffrey Smith