that not enough clear functional responsibility is delegated.

Therefore, in eliminating the post of Director of Defense Research & Engineering, a single position is replaced by three of higher rank—two Assistant Secretaries reporting directly to a new Deputy Secretary for Management of Resources and one reporting to a new Deputy Secretary for Evaluation.

As a result, the Deputy Secretary-Resources would control all R&D, including the existing Advanced Research Projects Agency (ARPA), whose responsibilities would be expanded to direct all basic military research and exploratory development.

Similarly, all test and evaluation would be under a Deputy Secretary, with the Assistant Secretary-Test and Evaluation directing testing for all R&D programs; his operations would be monitored and testing methods and procedures would be designed by the proposed Defense Test Agency. Further, DTA would oversee operational test and evaluation of all major weapon systems.

These changes in R&D management would contribute enormously to another major recommendation of the panel already instituted, coincidentally, by Laird. Hereafter, all new major weapon systems will undergo thorough and rigid testing prior to procurement; no longer will components of a major system undergo development concurrent with production. It was this concurrence policy that led to the huge cost overruns in such programs as the C-5A cargo plane.

The panel's recommendations could go far to eliminate some of the embarrassing aspects of Defense procurement, and indications are that the report is being taken seriously.

In making the recommendations public, Laird declared, ". . . we have put a high priority on the panel's report." But it is doubtful that critics of military spending in general will be appeased by any reorganization, no matter how effective. □

NERVE GAS AGAIN

Disposal at sea

The Department of Defense has been subjected to intense criticism in recent years over its practices and proposals for disposing of weapons containing chemical warfare agents. The criticism is partly justified: The military appears to have shown a remarkable lack of judgment in its failure to take into account environmental effects and other hazards.

But now DOD is between a rock and a hard place. Small ground-to-ground rockets containing the deadly GB nerve gas, stored at Lexington Blue Grass Depot in Kentucky and Anniston Army Depot in Alabama, must be disposed of quickly before something even more serious happens. The only disposal method appears to be to load them on an old freighter, tow it out to sea and sink freighter, rockets and all in the ocean depths.

The reason for the urgency: Internal leaking in the rockets. Although Army statements have been vague, apparently the nerve gas is seeping into the rockets' propellant chambers; it is feared that this may cause detonation. The Army says this risk so outweighs the hazards of dumping at sea that it will go ahead with this method of disposal despite opposition. If the Army has its way, the rockets, encased in desk-sized concrete blocks after the leaking was first suspected, will be loaded aboard trains sometime after Aug. 10. They will be hauled to Sunny Point, N.C., to be put in the freighter's hold. Two days later, the freighter will be sunk 245 miles off Cape Kennedy in 16,000 feet of water. The job must be done before the September hurricane season begins.

The opposition to the Army's plan comes mainly from Rep. Paul Rogers (D-Fla.) and Florida Gov. Claude Kirk. Rogers is asking for a Congressional resolution against the dumping off Florida's coast; Kirk is reported to be seeking a court injunction.

A serious disaster during the operation is so unlikely as to be "vanishingly small," says a National Academy of Sciences report last year on a similar disposal problem (SN: 7/12/69, p. 26). Extensive precautions will be taken during the shipment to the coast. The trains hauling the concrete-encased rockets will travel at no more than 35 miles an hour and they will avoid population centers. The danger while towing the freighter out to sea and sinking it is likewise small. But what happens on the bottom of the sea is anyone's guess (SN: 6/28/69, p. 609), and the NAS report treats this subject only perfunctorily: "Upon the corrosion of the steel containers, seawater will penetrate concrete and the thin aluminum bodies of the rockets, thus allowing the GB to diffuse slowly to the outside. . . . The GB that escapes will be hydrolyzed gradually by seawater. The resulting toxicity of the sea should be highly localized."

But a Defense Department spokesman this week admitted that the Army did not know exactly how much seawater would hydrolyze a given amount of GB; and he also admitted that sea life could be killed by the gas before the detoxifying hydrolysis takes place. It is mainly because of the numerous unanswered questions with regard to the effects on marine ecology that Kirk is asking for an injunction against the operation. □

PLASMA PROBLEMS

Protecting the donors

Only a decade or so ago medical researchers in the United States were inducing a serious disease, hepatitis, in prison volunteers. Public shock at a practice reminiscent of the medical experiments of Nazi Germany caused researchers to rethink their extensive effort to solve the mystery of the sometimes fatal disease. Such human experiments on hepatitis and other diseases are no longer done.

Last week the National Academy of Sciences raised a new question of medical ethics, as well as a serious question of public health. The Academy's Committee on Plasma questioned the methods of many of the small plasma banks which, without benefit of a supervising physician, collect blood plasma for sale to the drug houses that use it to produce the albumin and antibodies doctors use to save lives.

Alcoholics, drug addicts and assorted derelicts have become major donors of such plasma. A person can make as much as $400 a month selling his plasma, especially if he doesn't mind being immunized against tetanus and certain other deadly diseases before it is withdrawn. On-the-spot immunization is used to produce the wanted antibodies or other immune substances in the donor's blood stream.

While there are sharp limits on the amount of whole blood anyone can give, donors can survive plasma extraction as often as every two days.

This is possible because a recently developed closed-system plastic tube apparatus makes it possible to take the blood out of the body, extract the plasma and return the vital blood cells to the donor, all without risk of infection.

There are nevertheless unpleasant results, both for the derelict donors and for the thousands of hospitalized patients who receive antibodies or other products derived from the donated blood plasma.

The public health question is well known: Along with life-saving plasma products, patients may occasionally receive serum hepatitis, treatment of which requires a minimum of three months of hospitalization.

Another question has been less thoroughly discussed. Plasma donors are usually quite unaware that certain little-understood diseases may show up years later because blood banks have hyperimmunized them — given them large, repeated doses of antigens—to stimulate antibody formation before their plasma is withdrawn.

An estimated two percent of derelict or hippy donors have been found to be hepatitis carriers, while only about