

less subject to abuse by high-priced physicians.

Another economy measure, which can also go into effect by secretarial order, is to eliminate the current two percent "cost-plus" payment to hospitals, originally intended to offset expenses involved in buying new equipment and revising procedures to accommodate the Medicaid program. A \$45 million saving is anticipated. A two percent cost-plus payment to nonprofit institutions and a one-and-a-half percent cost-plus allowance to profit-making institutions, such as nursing homes, under Medicare, will also be dropped, saving another \$75 million.

**To recoup** \$126 million, the Administration, through HEW, proposes to change its Medicaid provisions for the mentally ill, limiting the presently indefinite hospital stays to 120 days. But this will require Congressional approval and is likely to run into a brick wall in the Senate. Federal payments for the mentally ill, initiated in 1965, were first proposed in 1960, approved by the Senate and later dropped in Senate-House conference. At that time, Sen. Long filibustered for three days in an attempt to get the provision back in the law, and now that it is finally there, he is not likely to let it drop.

A spokesman for HEW says the Medicaid curtailments, aimed only at saving money, will not affect the number of persons, expected to be 9.5 million in 1969, who receive benefits. But if New Mexico is any indication, this view may not hold water. When that state's budgeted \$15 million ran out three-quarters of the way through the year, at least 1,500 nursing home patients lost support.

**A provision** in the original legislation, referred to as a "mandate for bankruptcy," is leading a number of states (Oklahoma is particularly pinched, as are southern states) into serious trouble. That provision says that in order to stay in the program, states must steadily expand the scope of their Medicaid so that by 1975 they will be covering the needs of all of the medically indigent residents. Contending that in the face of spiraling costs states should be allowed to hold the line, Sen. Clinton Anderson (D-N.Mex.), a Finance Committee member, introduced a bill to strike the expansion requirements from the law. His bill, which appears to have strong backing, will be tacked on to some House appropriations bill when it reaches the Senate.

A similar move is anticipated for Sen. Long's long-standing desire to push through a bill that would require generic prescriptions for drugs (SN: 12/9/67, p. 559) under these programs, but whether or not that will make it into law this Congress is uncertain. ◇

## RIGID ROTOR

### New chopper in trouble



Lockheed

*Army's Cheyenne: Its vibrations and high costs threaten its promising future.*

One of the most technologically ambitious military aircraft in recent years is the Army's AH-56A Cheyenne armed helicopter. Almost every major system in the chopper is new, from the rigidly mounted rotor system (SN: 3/23/68, p. 291), which increases stability by eliminating the hinges found in conventional rotors, to the automatic laser-beam rangefinder, to an infrared, day-or-night aiming device controlled by movements of the pilot's helmet.

In recent months, the Cheyenne has been having its troubles. Members of what is now widely condemned as the military-industrial complex have often tended in the past to write off such difficulties as normal for any advanced, new program. However, the Cheyenne's have come at a time when the Pentagon has been responding to Congressional pressure by cracking down on its contractors. Planes, missiles, ships and tanks are all feeling the squeeze in ways ranging from rewritten contracts to threats of dropping whole programs where they stand.

**The first sign** that the Cheyenne's number might be coming up was the fatal March 12 crash of one of 10 prototypes already delivered to the Army under a research and development contract totaling more than \$90 million. The flight was apparently being made to investigate known instabilities in the rotor system, and photos taken just before the crash reportedly showed that three of the four rotor blades had come off.

Less than a month later, following discussions with the aircraft's builder, Lockheed-California Co., in Burbank, the Army sent Lockheed an itemized and pointed notice, titled Project Cure, detailing the company's "failure to make satisfactory progress toward the

production and timely delivery of aircraft which will meet contractual requirements."

At stake is the Army's purchase of as many as 375 Cheyennes, at a skyrocketing cost now estimated to be about \$969 million. The only production agreement so far in existence is a letter, yet to be hammered into contract form, covering about \$21.4 million worth of long-lead-time hardware, which must be procured or manufactured early to keep the program on schedule. This and subsequent contracts could be trimmed or even dropped if Lockheed fails to convince the Army that its objections can be overcome.

**Lockheed's reply**, a hefty, 430-page document delivered to the Army on April 28, is apparently being favorably received. At least some of the cited difficulties were already being corrected as the Project Cure notice was being sent.

One problem cited by the Army, for example, referred to inadvertent backward movements of the control stick by the pilot, while the helicopter was on the ground, which on two occasions had caused the rotor blades to dip and strike the tail section of the fuselage, damaging the blades. A 20-pound-pull spring now prevents the stick from easily being pulled all the way back while the chopper is grounded.

Other difficulties for which solutions are believed already to have been tried include the need for repeated corrections with the control stick to compensate for the right-rolling tendency caused by gyroscopic precession, and the tendency for the stick to creep leftward with increasing forward speed, due to unequal lift between the advancing and retreating sides of the rotor.

The Cheyenne has some less readily

solvable problems, however. One is described by the Army as "inadequate directional control during hover and side-ward flight." This is due to inefficiency of the tail rotor, and is believed still to be taking up the time of Lockheed engineers. One possible cure, and probably the one Lockheed hopes will work, since it is relatively simple, is simply to reverse the direction that the tail rotor turns, enabling it to work in a different part of the airstream around the helicopter.

"Half-P hop" is another difficulty under study, named for a very low-frequency vibration that occurs at the rate of half a beat per revolution of the main rotor. This occurs only at high speed, and the solution is believed to involve moving it up until it occurs only at a speed beyond the capability of the helicopter. An approach to this may lie in reducing the play in the aircraft control system, which has increased from Lockheed's original rigid-rotor design due to the addition of servomotors and other intermediate components needed to ease handling of the heavy Cheyenne.

A particularly touchy item in the

Cure notice is excess weight, which the Army says is due to Lockheed's design changes, and which it blames for "an ensuing degradation in performance, maneuver capability and structural integrity." Lockheed is not expected to accept this lying down, and is likely to argue that as much as one-third of the Cheyenne's 17,000-pound gross weight, and some or all of the excess, comes from Government-furnished equipment, including weapon systems, electronics and other hardware. Similar arguments raged for years over the F-111 (SN: 10/21/67, p. 400).

**The nine remaining** Cheyenne prototypes were grounded following the crash, and when they will resume flight is unknown. However, the chopper's troubles are financial as well as technical. Costs have skyrocketed since early estimates of the program's expenses, and Rep. Otis Pike (D-N.Y.) of the House Armed Services Committee claims that the Cheyenne's price tag has jumped from \$992,000 to \$2.2 million each.

As Defense Secretary Melvin Laird guides the Pentagon through a reap-

praisal of its major contracts, however, another Lockheed contract has turned out to have escalated so far that its cost overrun alone may be twice the size of the entire Cheyenne program. This is the Air Force's giant C-5A jet transport, which Congress charges may cost an extra \$2 billion over its original \$3.1 billion estimate. The Air Force feels that the excess will be smaller, \$882 million plus spare parts.

**Other programs** getting the stern once-over include: the FB-111, bomber version of the F-111 jet, for which procurement has been cut from 210 to 60 aircraft; the S-3A antisubmarine aircraft, for which the contract is being held up until it can be changed to require the contractor to demonstrate the plane's performance at predetermined milestone points; the SRAM (Short-Range Attack Missile), on which production is being deferred; the Minuteman 3 missile, which is getting a production slowdown; the Navy's shipbuilding program, whose climbing expenses may cost the Navy \$600 million in new projects, and possibly the Army's Main Battle Tank.

## EXPLOSIVE ISSUE

### Nerve gas: too hot to handle

The Army has a tiger by the tail.

It would prefer not to haul 809 railroad cars full of poison gas from four arsenals through several major cities, for loading aboard obsolete Liberty ships and disposal at sea (SN: 5/17, p. 470).

It cannot safely dismantle and detoxify the 2,700 tons of packaged gas, as has been suggested by a group of scientists at Washington University in St. Louis. And its alternative is being attacked as equally risky.

The gas, Army officials disclosed at a hearing last week before a House foreign affairs subcommittee, is not simply old, World War I and II gases contained in canisters.

**The largest portion** of the proposed shipment, Acting Assistant Secretary of the Army Charles L. Poor told the subcommittee, is in 1,000-pound bombs which contain a combination of deadly GB nerve gas and high explosive dispersal bomblets. And, says Poor, the surplus weapons are in too great a state of decay and thereby too sensitive to be disassembled on site without a risk of a major disaster.

Some 440 carloads of the gas, at the Rocky Mountain Arsenal in Colorado, are in this category.

Poor told the subcommittee the Army planned to scuttle an assortment of chemical munitions 250 miles at sea due east of Atlantic City, N.J., in 7,200 feet of water. The hearing had been

originally scheduled for the previous week, following disclosure of the plans, but the Army had asked for additional time to prepare its information and assemble its experts.

Three types of chemical agents are involved. The nerve gas GB, the most toxic of the three, is presently stored in 1,000-pound bomb clusters officially described as "fin-stabilized, air-to-surface" devices, containing "2.6 pounds of agent GB and approximately one-half pound of tetryl burster" (the high explosive), in each of 76 bomblets comprising one bomb. The explosive component deteriorates with age and becomes more unstable and sensitive to heat and pressure.

The other gases are the somewhat less lethal agents, mustard and tear gas, contained in one-ton steel tanks. The mustard is in a liquid state and under no pressure.

**Army scientists** claim that the mustard will freeze at the water temperatures encountered in the ocean depths, and that should leakage occur, it would, as would the other gases, be rendered into a harmless breakdown product similar to ordinary industrial waste through the hydrolyzing action of the seawater. Even if all the explosives detonated at once, there would be no danger, if it occurred below 1,000 feet, the Army contends. Also, the area of contamination would allegedly be confined to the immediate site of the dump

because of the water's stillness at great depths. The rate at which any leaking gas could be chemically degraded would be faster than the diffusion rate of the gas through the water. None of it could reach the ocean surface, or be carried great distances away in its toxic form.

**The picture** drawn is one which seems to meet all possible objections, with the exception of long-range consequences or unsuspected effects.

The ocean has been used for disposing of all kinds of military and non-military materials, Poor said. Flanked by Army chemical warfare scientists, and officers, he told the subcommittee the ocean floor has always been regarded as a kind of "Davey Jones Locker," remote and inaccessible where "things could be put and forgotten."

This did not sit well with the Congressmen. Rep. Cornelius E. Gallagher (D-N.J.), chairman of the subcommittee, reminded Poor that the ocean floor may become the food locker of the future. The secretary answered that explorers of the ocean floor should first consult the appropriate charts indicating where dumps have been made.

The Army agreed to delay its shipment until further studies have been made of the plans and other options. For an independent review, the Army has asked the National Academy of Sciences to study the problem and provide "even further assurance that the alter-