AEROSPACE INDUSTRIES

Lockheed Lives Again

THE project for building the huge military transport aircraft called the C5A has survived yet another attack by critics in the Senate of this and other new weapons systems, with the result that the Lockheed Company will not find itself having to abandon manufacture of the aircraft for lack of funds. It remains, however, to be decided how the relationship between the Department of Defense and the luckless company will eventually be resolved. Already there are reports that a part of the price that Lockheed will have to pay for being bailed out of its contract for development and manufacture of the aircraft will be the transfer of the Georgia plant at which the work is concentrated to public ownership.

The C5A has become in the past few months a haunting admonition for all industrial concerns anxious to win military contracts. In technical terms, the aircraft is a remarkable development in its own right—it is designed to lift more than 80 tons of military equipment. Much of the engineering interest of the development has been the design of a wing sufficiently large and efficient to provide the necessary lift. Administratively, the contract for the development work, originally signed in October 1965, broke new ground by being one of the first fixed-price contracts of this size negotiated by the Department of Defense as part of Mr McNamara's belief that it should be possible to save public money by the introduction of commercial procedures into military procurement. The original contract supposed that $1,900 million would cover the cost of development and the manufacture of 115 aircraft. At the beginning, Lockheed must have been given some assurance that the project would not become a very heavy loss by the provision in the contract allowing for a price increase for the second half of the production run if the estimated costs should have turned out to be too low in the production of the first 57 aircraft. In the event, the complications of the wing design and of the electronic equipment built into the aircraft have plainly turned out to be much greater than originally supposed, while the Pentagon seems to have set its face against a loosening of the tight performance specification originally agreed on. On the present showing, it seems as if the cost of the whole enterprise would turn out to be close on $5,000 million, although the total cost was for practical purposes reduced last October when the Air Force said that it would settle for 81 aircraft rather than the 115 originally ordered.

This reduction of the scale of the operation seems to have aggravated Lockheed's troubles. Under the original contract, it would have been possible to offset losses on the first half of the production run by increasing the price charged to the Air Force for the second half of the order, although there was an upper limit to the extent to which Lockheed could expect to make good its losses in this way. With the curtailment of the second series of aircraft ordered, the scope for recovery in this way has also been curtailed, and it seems to be agreed that Lockheed will make a loss of somewhere between $200 million and $650 million on the whole operation, depending on the outcome of current negotiations with the Department of Defense.

The Lockheed issue came up in Congress last week in the form of an amendment to the Military Appropriations Bill put forward by Senators Proxmire and Schweiker, two redoubtable critics of military expenditure. Their object, on August 20 and then on August 26, was to limit the freedom of the Department of Defense to spend a sum of $200 million set aside in the C5A appropriation for what are called contingencies. This sum of money is additional to the $334 million estimated by the Air Force to be due to Lockheed under the terms of the contract in the current financial year, and which is thought sufficient to complete some 42 aircraft. The assumption is that the contingency allowance will in practice be used to make good some of the company's expected losses. The arguments for making these payments, put forward last week in the Senate, turn around the strategic advantages of the C5A and the likelihood that too fierce a view of the situation might force Lockheed to default on its contract or even to file for bankruptcy. In the event, the Senate agreed that the $200 million should be spent, which gives the Pentagon an opportunity to find a way of keeping production going. From last week's debate, however, it is clear that there are influential voices in the Senate against too lenient a settlement. Whatever happens, there is a feeling that defence contracting will never be the same again.

DEFENCE POLICY

ABM Undeterred

As everybody expected, there was no fight in the Senate when eventually Senator Brookes's attempt to confine the deployment of the Safeguard to the two sites at which deployment has already begun came up for debate. Unlike the Cooper-Hart Amendment to the Military Appropriations Bill (see *Nature*, **227**, 770; 1970), the Brookes Amendment would have allowed the Department of Defense to spend all the Safeguard money requested for 1971, but would have compelled the diversion of the $300 million odd allocated to the preliminary work at the Whiteman base in Missouri to the improvement of the radar defences at the sites in Idaho and North Dakota. Inevitably, the argument turned not so much on the political question of whether the work being carried forward on Safeguard will help or hinder the SALT talks, due to be resumed in Helsinki in November, but on the admitted inadequacy of the radars being put in at the Safeguard bases. During the financial year that has now begun, the Department of Defense intends to equip the two existing sites with extra Sprint missiles, so as to help ensure the defence of individual Minuteman silos, but Dr John Foster, Chief of Research at the Pentagon, agreed earlier this year that a sound defence of these missiles would require point-by-point radars as well. It is entirely understandable that the Senate should seem to be on weaker ground when trying to force new patterns of technical development on the military than when arguing about general principles, but last week's debate nevertheless provided a fresh insight into the ways in which the Safeguard system is being put together from its separate components.

Eventually, there will be twelve missile sites, covering the United States uniformly. At each of the sites will be a local radar system with a range of several hundreds of miles, and at seven of them will be Presimeter Acquisition Radars with ranges of several