ARE COST OVERRUNS A MILITARY-INDUSTRY-COMPLEX SPECIALTY?

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Recent discussions of cost overruns in military procurement have occasioned loud cries of anguish about the military-industrial complex. These discussions in their current phase refer to remarks by President Eisenhower in his farewell address. The recent recommendation of the General Accounting Office that all defense contractors be required to adopt a set of uniform accounting practices is part of this stream of events. Although these two are clearly separate and separable, they are combined here because the public information media have identified them as cause and effect. Probably the most noteworthy such identification was the New York Times editorial on Tuesday, January 27, 1970.

The idea of uniform accounting practices for defense contractors is not new and at all times has seemed both appropriate and possible. Such bookkeeping is now specified by the Armed Services Procurement Regulations (ASPRs), which are deficient in information requirements and really do not require uniformity. This is referred to here simply to eliminate it from a discussion of cost overruns, since uniform accounting procedures (although desirable) can deal only with history.

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They can identify past overruns but would be of little or no service in meeting the real problem--future overruns.

The problem of cost overruns is neither new nor peculiar to the military. An early illustration is provided by Roman history shortly after the beginning of the Christian era. At that time, Rome decided to build an aqueduct for the town of Troas in Asia.

Costs started to outrun the estimates as soon as the construction began. According to the historian Edward Gibbon, "... the young magistrate, observing that the town of Troas was indifferently supplied with water, obtained from the munificence of Hadrian three hundred myriads of drachms (about a hundred thousand pounds) for the construction of a new aqueduct. But in the execution of the work the charge amounted to more than double the estimate, and the officers of the revenue began to murmur."[1] The complaint of the revenue collectors was silenced by the generosity of the wealthy Julius Atticus, who met all of the extra cost out of his pocket. Since no Julius Atticus lives today, the taxpayer and the public treasury foot the bill, be it a civil or a military project.

Two issues are involved in the problem of cost overrun: (1) the formulation of the original estimate of the cost of the item, and (2) the control of cost when the project is under way.

As indicated above, the GAO proposal would not eliminate the first of these difficulties--estimates of future costs. Although it might alleviate the second problem--cost control--it could be expected to accomplish this only at some distant future time.

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*Edward Gibbon, The Decline and Fall of the Roman Empire, The Modern Library, New York, p. 40.

Substantial effort to deal with the problem of surprise or cost overruns has been expended in both government and industry, and in both the United States and abroad. A significant contribution was the report of Great Britain's Plowden Committee,[2] which recognized that efficiency of cost control derives from both the quality of the forward estimate and the reliability of the instruments of financial control applied to the work to be done. Although the Plowden Committee dealt with the problem of procurement by the British Defence Ministry, its findings apply equally to all undertakings that will produce goods to be delivered five or more years in the future, including those in both the United States and private business.

The fact that cost overrun is not exclusive to government or to Defense Department programs is proven by a wide range of experience, starting with the Roman illustration discussed earlier. Let me cite a few fairly recent ones.

In the early 1950s, when nuclear reactor technology first became available for peaceful uses, a major public utility company contracted with an established boilermaker for an atomic core for a power plant. Although the public utility had had long experience with fossil fuel and hydroelectric plants, this was its first entry into the nuclear field. For this reason, even though the boilermaker had had substantial atomic experience through its contribution to the World War II Manhattan Project, the public utility engaged a consulting firm that was an established technical consultant in the nuclear field.

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*The Control of Public Expenditures, HMS Stationery Office, London, 1961.

The contract awarded by the public utility called for delivery of the reactor core within four years for $55 million. On the original delivery date, the boilermaker had run out of money and was not able to make delivery. Delivery was made several years later and the cost overrun was some 200 percent of the original price.

The cost overrun results were the same for one of the nation's largest communications companies when it introduced a new transmission technology after World War II. Here again, in spite of an accumulation of knowledge, the technique selected for introduction was not fully developed and time was an important factor. In this case, the time schedule was met, but with a 300 to 400 percent cost overrun.

Again in the early 1950s, an American auto manufacturer decided to reintroduce an old body-frame concept. Although it had been used previously by the company and was currently being produced by other auto manufacturers in both the United States and Europe, it was new to that company at that time. All went well until the first units were delivered to the company's proving ground, where the front end was found to be entirely unstable and unmanageable when speed was accelerated--it raised off the ground. An addition of several hundred pounds of metal to the front end held it on the ground, but caused cost overruns of about $200 per unit. In the automobile industry, where budgets are very tight, even a $10.00 per unit change is considered substantial.

In the public field in recent years, we are all familiar with the cost overruns on the Rayburn Annex to the House Office Building. Most of us have also heard about the enormous additions to the original

contract price required for some of Chicago's elevated highways. To this list of overruns for ordinary construction well within the state of the art, one or two items from the 1968 hearings on Atomic Energy Commission appropriations might be added.

The most striking AEC overrun cited at that time was for the modification of reactor facilities at Hanford, Washington, where the original cost estimate was $12,300,000 and the final figures totaled $21,728,000. The zero gradient synchrotron at Argonne was originally estimated at $29,000,000; the final cost was $51,402,000. AEC's Project Sherwood, initially estimated at $30,000,000, actually cost $57,004,000.

Turning again to the nongovernment construction: An office building is a simple structure compared to modern military aircraft and guided missiles. Standard grades of steel are used for beams, reinforcement rods, and mesh. There exist numerous suppliers of ready-mixed concrete, sheathing materials for the exterior, sash, flooring, roofing materials, and every other part of the structure. Yet we all know of many commercial office buildings that involved substantial cost overruns. Innumerable people who contracted for private homes have experienced the same problem--they wind up paying substantially more than originally bargained for.

These examples are cited simply to demonstrate that cost overrun is not a phenomenon unique to either the Department of Defense or military goods. To be sure, this will always be a fruitful area of study for both military and civilian parts of the economy. But let us not be misled by the current list of horrible examples in the military and assume that this is the product of some evil conspiracy between the government and manufacturers of military goods.

In the design, procurement, and production of future goods, errors will always be made, whether in the purchase of new space vehicles for government use, the introduction of new power plants by privately owned electric companies, or the purchase of new office buildings and homes by private individuals. This has been the case since Roman times and can be expected to continue in the foreseeable future.