

ond of the two Applied Physics Laboratories (APL) near the end of 1977 (the first was already decertified in 1975) and the Applied Research Laboratory (ARL), and the Air Force decertified ANSER on October 1, 1976. In the case of the laboratories, they were simply declared no longer to be FFRDCs. The federal government continued contracting with them, but without the special FFRDC status. In addition, the MITRE and RAND corporations set up their FFRDC portions separate from the rest of the company. MITRE formed its C<sup>3</sup>I Division and RAND renamed Project RAND Project Air Force. Both C<sup>3</sup>I and Project Air Force became FFRDCs. Aerospace was asked no longer to diversify outside of defense work and to divest itself of its existing non-DoD work. MITRE in Bedford was similarly restricted, but the MITRE office in Washington was not.

This changing environment was described by the DDR&E in its report of June 1976 (56). It summarized the status of the nine existing FFRDCs (called FCRCs throughout the report). Their budget was \$297 million, ranging from a high of \$82 million for Aerospace to a low of \$2 million for ANSER, and their total employment was 4,500. In its review of the study and analysis centers, it noted that their annual workload was around \$40 million, 15 percent of all DoD expenditures on studies and analyses. A Defense Science Board task force had recently strongly endorsed the DoD FFRDCs. The DDR&E concluded that, while the industrial base capable of performing some of the tasks done by FFRDCs had grown markedly since their founding, the need for FFRDCs still existed and that FFRDCs provided “high quality, essential services” (56).

## THE TRANSITION TO THE PRESENT

The number of FFRDCs remained stable from 1978 until 1984, when four new FFRDCs were established. Of these, three were essentially reorganizations of existing efforts and one was an entirely new entity (the Software Engineering Institute).

The other three FFRDCs were LMI, NDRI (RAND) and the Arroyo Center (RAND). LMI had been in existence since 1961, and had been listed once by the National Science Foundation as an FCRC. The NDRI and Arroyo Center both evolved directly out of existing programs at RAND (61, p. 44).

The other significant event that occurred at that time was the 1983 passage of the Competition in Contracting Act (CICA). This act had provisions that clearly identified the FFRDCs and set procedures for issuance of contracts to them without competitive procurement. While these limitations did little to change the DoD business of FFRDCs, CICA did clarify their procedures. CICA made it more difficult, in some respects, to issue small study contracts in a timely manner to private firms, making the use of FFRDCs more attractive to the federal government managers. On the other hand, CICA also made non-DoD work by FFRDCs much harder to arrange.

In 1984 the Office of Federal Procurement Policy (OFPP) Policy Letter 84-1 was issued, codifying rules for establishing FFRDCs. The Federal Acquisition Regulations were modified in 1990 so as to bring them into conformity with OFPP 84-1.

As explained in the Introduction, the FFRDC system represents a departure from the federal government’s usual pattern of buying from the lowest bidder, and requires a ceiling on expenditure for reasons analogous to those that necessitate tempering the lowest-bidder rule with a caveat regarding what constitutes acceptable quality. In the last 10 years, four different ceiling systems have been used to limit expenditure of DoD-appropriated funds at FFRDCs, indirectly limiting staff levels and therefore the size of the FFRDC system as a whole:

- Prior to FY 1991, the individual centers’ DoD sponsors set ceilings on their individual centers’ DoD use;
- Congress imposed center-by-center ceilings in FY 1991 and FY 1992;

- DR&E set individual ceilings on the DoD use of DoD FFRDCs in FY 1993; and
- Congress now places a financial ceiling on the DoD use of DoD FFRDCs and DDR&E apportionments this ceiling among the centers; the FY 1994 and FY 1995 ceilings were set in this way and are shown in appendix D (31).

At present, the ceiling is below the current demand and limits the availability of the FFRDCs to do work and the flexibility of federal government program managers to award them work.

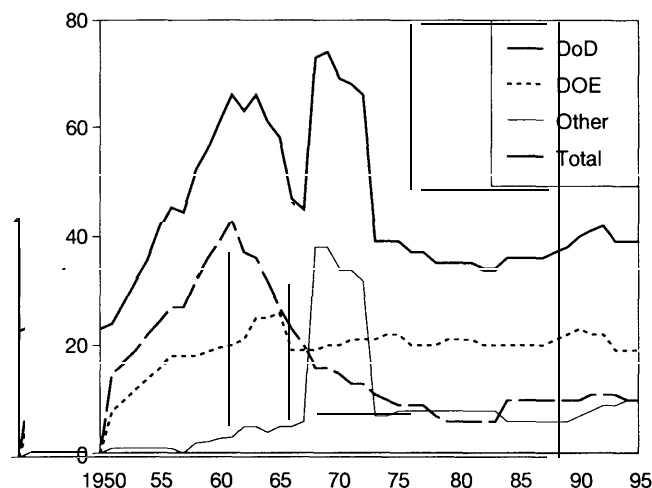
The 10 FFRDCs that existed or were created in 1984 are the same 10 that exist today. There was only one DoD FFRDC created after 1984, the Institute for Advanced Technology, sponsored by the Army and contracted through the University of Texas. It was created in FY 1991 and decertified after FY 1992. An abortive attempt was made to create a DoD FFRDC in connection with the Strategic Defense Initiative.

The work and missions of the study and analysis centers are different in emphasis from what they were when the centers were originally established. Descriptions of their missions today provide a different emphasis to the reasons FFRDCs exist. They are said to provide:

- continuity,
- ability to work with sensitive and classified data,
- responsiveness, and
- objectivity.

These reasons differ from the reasons for the centers' creation: the exploratory research mission has lost center stage, though it continues and arguably brings benefits disproportionate to its size. Instead of being free-wheeling think tanks operating in a university-like environment, the study and analysis federal research centers now strive to be reservoirs of knowledge, objectivity, and experience, on tap to support the military's ongoing mission. In some respects, this transition occurred because the federal research centers have completed the original mission assigned to them. Their success in developing new methodologies is demonstrated by the existence of a private indus-

FIGURE 1-2: A Count of Federal Research Centers<sup>a</sup>



<sup>a</sup> The actual numbers used are provided in appendix B

SOURCES: National Science Foundation, *Federal Funds for Science, Federal Funds for Research, Development, and Other Scientific Activities*, and *Federal Funds for Research and Development*, vols. I through XLII (Washington, DC: 1952-1994).

try capable of taking on at least part of their function.

As their missions were accomplished, the FFRDCs declined from the 43 DoD FCRCs reported in 1961 to the 6 that existed from 1978 to 1983. The annual NSF reports list federal research centers from 1950 to the present. Figure 1-2 shows the total number of centers reported for each fiscal year with separate counts for DoD, Department of Energy, and other centers. The data used for this graph are provided in appendix B.

The record of R&D obligations for FFRDCs is also provided by the NSF reports. However total expenditures or total receipts can exceed R&D obligations by 20 percent or more and only R&D obligations are reported by NSF. Figure 1-3 shows obligated DoD funding for each center. As can be seen from this graph, Aerospace, MITRE, and Lincoln Laboratory operate at an entirely different level of effort from that of the study and analysis centers. Figure 1-4 summarizes the disparity. The