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Report to the Chairman, Committee on National Security, House of Representatives

April 1997

COOPERATIVE THREAT REDUCTION

Status of Defense Conversion Efforts in the Former Soviet Union

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National Security and
International Affairs Division

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The Honorable Floyd Spence
Chairman, Committee on National Security
House of Representatives

Dear Mr. Chairman:

In response to your request, we reviewed the Department of Defense's (DOD) program to help convert defense industries in the former Soviet Union to commercial enterprises.[1] At the time of our review, DOD had undertaken 20 conversion projects, and the Defense Enterprise Fund had completed agreements to undertake 4 projects. Our specific objectives were to assess (1) the effect of defense conversion efforts on the elimination or reduction of military activities and production capabilities in former Soviet weapons of mass destruction enterprises, (2) the status of defense conversion projects and funding, and (3) conformance of the Defense Enterprise Fund's management practices to its grant agreement and the Fund's operating expenses.

Background

DOD's program to convert former Soviet Union defense industries to commercial enterprises is part of the Cooperative Threat Reduction program, which DOD has supported since 1992 to reduce the weapons of mass destruction (WMD) threat.[2] The program's priority objectives include helping to (1) destroy nuclear, biological, and chemical weapons; (2) transport and store weapons that are to be destroyed; and (3) prevent weapon proliferation. In addition to these objectives, the Cooperative Threat Reduction Act of 1993 authorized DOD to establish a program to help demilitarize former Soviet Union defense industries and convert military technologies and capabilities to commercial activities. The Soviet Union had an enormous defense industrial complex that reportedly consisted of 2,000 to 4,000 production enterprises, research and development facilities, and research institutes and employed between 9 million and 14 million people.[3] Although the main objective of the Cooperative Threat Reduction Act focused on WMD reduction, the act did

[1]The former Soviet Union countries that participate in this program are Belarus, Kazakstan, Russia, and Ukraine.

[2]This report is the latest in our series of reviews of the Cooperative Threat Reduction program. See Related GAO products for a list of other reports.

[3]O'Prey, Kevin P. A Farewell to Arms: Russia's Struggles With Defense Conversion. New York: Twentieth Century Fund Press, 1995, page 15.

not specifically require the defense conversion program to target WMD capability. Nonetheless, DOD targeted WMD industries for conversion with the goals of stimulating foreign and domestic investment in the former Soviet Union and demonstrating that partnerships between private U.S. companies and former Soviet enterprises can succeed.

The Office of the Secretary of Defense, along with several government agencies, developed a list of 150 WMD-related enterprises in Belarus, Kazakstan, Russia, and Ukraine to be candidates for defense conversion projects. According to DOD, the list consists of enterprises that were associated with the research, development, or production of WMD; their delivery systems; or subsystems or components. DOD defined WMD to include nuclear, biological, and chemical weapons; guided missiles and aircraft that can deliver these weapons; and weapon platforms, such as aircraft carriers, land-based missile launchers, surface ships, submarines that carry nuclear-equipped guided missiles, and aircraft. Also, firms associated with the production of command, control, and communications equipment for military forces linked to those weapons, as well as with the production of systems that provide strategic defense or counter strategic bombers, were eligible for inclusion on the list.

The Defense Special Weapons Agency (DSWA)—formerly the Defense Nuclear Agency—implements the defense conversion programs and contracts under the guidance of the Deputy to the Assistant Secretary of Defense for Cooperative Threat Reduction. In 1994 and 1995, DSWA established and awarded contracts for the DOD-managed projects. For most of these projects, DSWA contracted with U.S. firms to assist specified former Soviet Union firms. Typically, the former Soviet Union and U.S. firms established a joint venture to provide a civilian good or service, using U.S. private and government funds and former Soviet facilities and labor. The 20 defense conversion projects included 4 projects intended to provide housing for demobilized Strategic Rocket Force personnel in Belarus, Russia, and Ukraine.[4] These projects were undertaken because those countries required that housing be provided for Strategic Rocket Force personnel before their units could be demobilized.

The Cooperative Threat Reduction Act of 1993 also authorized the creation of a private, not-for-profit fund that would continue the defense conversion efforts begun by DSWA. The Defense Enterprise Fund (DEF) was incorporated in June 1994 as a government-funded enterprise to provide

[4]The Cooperative Threat Reduction Act of 1993 includes the provision of housing for former military personnel of the former Soviet Union.

financial support for the demilitarization of industries and conversion of military technologies and capabilities into civilian activities. DEF received its initial funding through a $7.7 million grant from DSWA. The grant agreement specifies the management requirements for DEF and articulates DSWA oversight responsibilities. DEF is currently required to select firms for defense conversion from DOD's list of 150 WMD-related enterprises or notify DSWA if it selects a firm that is not on this list. DOD initially proposed $118 million in government-funded capitalization for DEF; however, according to DOD officials, the U.S. government capitalization of DEF is currently envisioned to end at $71 million. The grant agreement encourages DEF to seek private capital investment, and DEF is currently developing plans to create a private equity fund. In accordance with the grant agreement, DSWA is authorized to approve DEF's plans.

Our review did not include an evaluation of DSWA's management of the 20 individual contracts for defense conversion projects, or an evaluation of how DOD developed the list of 150 firms that it considered to be WMD-related enterprises.

Results in Brief

Given the vast size of the former Soviet Union's weapons complex and the numerous variables involved in trying to assess and quantify military production capacity—including unknown factors such as possible modernization or consolidations at other locations—we were unable to confirm that the defense conversion projects we reviewed had any direct impact on eliminating or reducing weapons of mass destruction or other military production capacity in the former Soviet Union. Nonetheless, of the 24 projects we reviewed, 20 had indigenous partners that DOD identified as firms that had been engaged in producing weapons of mass destruction, and one project involved converting resources that were still engaged in producing weapons of mass destruction. Our analysis also showed that at least 11 projects had directly used buildings formerly engaged in activities related to weapons of mass destruction, and at least 8 projects had employed former workers from weapons of mass destruction-related activities at the newly established enterprises. According to DOD officials, the defense conversion projects are providing assistance to firms that have large numbers of underutilized and often unpaid employees. DOD officials hope that the projects will become commercially viable and that the indigenous parent firms will invest additional resources that might have otherwise been used for producing weapons of mass destruction or other military hardware.

Five of the 24 defense conversion projects were no longer operating at the time of our review. The remaining 19 projects have made varying degrees of progress in setting up commercial businesses, but eight of the projects had not begun production. Four of the projects that had reached production were moving forward, and for one of these projects the U.S. partner bought the Russian partner's share of the joint venture. Three of the four housing projects are complete but have not established commercial enterprises. Two of the housing projects were construction projects and were not intended to generate ongoing businesses. As of March 1997, DOD had notified Congress that it planned to spend a total of $179.7 million on defense conversion projects and had disbursed $143 million, including $51.7 million granted to the Defense Enterprise Fund.[5] As of December 1996, the Fund had committed $22.6 million to eight investment projects and had invested $16.6 million.

The Defense Enterprise Fund has complied with many elements of the grant agreement with the Defense Special Weapons Agency, but it has not finalized some key grant requirements, and the Agency has not enforced compliance. The Defense Special Weapons Agency's oversight of the Fund has been less rigorous than the level provided for by the grant agreement. The Defense Special Weapons Agency and the Defense Enterprise Fund have not established the required evaluation benchmarks necessary for DOD to measure the success of the Fund, and the Fund's long-range plan for attracting private capital has yet to be finalized. DOD officials told us that the Defense Special Weapons Agency was attempting to resolve these issues. The Defense Enterprise Fund's operating expenses have totaled $6.8 million since its inception, which is roughly consistent with the spending of other U.S. government-sponsored enterprise funds in Central and Eastern Europe and the former Soviet Union.

Impact of Defense Conversion Aid on WMD Industries

As previously stated, when the Soviet Union dissolved, it left behind an enormous defense industrial complex consisting of 2,000 to 4,000 production enterprises—some of which were massive conglomerates—that employed 9 million to 14 million workers. To assess whether any individual defense conversion project had an impact on reducing this residual production capacity would have required a complete analysis of the former Soviet Union's defense industry. The defense conversion projects often involved the use of a single building that was part of a massive industrial complex, and we would have had to account for such things as possible plant modernization or consolidation of

[5]DEF received $20 million of this amount in September 1996.

production lines. This assessment would also have required knowledge of the initial baseline production capacity. Such an analysis was beyond the scope of this review. We were unable to confirm that the defense conversion projects we reviewed had any direct impact on eliminating or reducing WMD or other military production in the former Soviet Union.

Nonetheless, our review showed that 20 of the 24 conversion projects included enterprises that DOD considers related to WMD, and according to DOD and joint venture officials 1 of these projects involved converting resources that were still engaged in WMD-related production. Defense conversion assistance establishes projects that typically occupy abandoned buildings and create a small number of jobs at large former Soviet Union firms where workers are often underutilized and unpaid. According to DOD officials, defense conversion efforts are aimed at redirecting resources at former Soviet Union enterprises to peaceful endeavors. The officials recognize that only a portion of nearly all former Soviet Union firms that are receiving assistance will participate in a defense conversion project. However, DOD officials hope that the projects will become commercially viable and additional resources will be invested that might otherwise have been used for producing WMD or other military hardware.

We found that many of the projects used abandoned buildings of large WMD-related conglomerates. At least 11 of the 24 defense conversion projects used former WMD-related buildings, and in 1 case active WMD production was occurring in a building up to the time that the defense conversion project began. Further, at least eight projects used former WMD-related employees. Three housing construction projects in Belarus and Ukraine did not include WMD-related firms. Table 1 shows information on DSWA's and DEF's conversion efforts.

Table 1: Type of WMD Conversion at 20 DSWA and 4 DEF Projects in the Former Soviet Union

Project sponsor and country	Total number of projects	Number of projects: WMD buildings converted	Number of projects: WMD buildings not converted	Number of projects: Unable to determine	Number of projects: WMD workers employed	Number of projects: WMD workers not employed	Number of projects: Unable to determine
DSWA							
Belarus	4	2	1	1	0	1	3
Kazakstan	4	2	2	0	4	0	0
Russia	5[a]	2	1	2	0	1	4
Ukraine	7	5	2	0	3	2	2
DEF[b]							
Russia	4	0	2	2	1	1	2
Total	**24**	**11**	**8**	**5**	**8**	**5**	**11**

Note: This information was obtained through discussions with officials from DSWA, DEF, U.S. joint venture partners, and former Soviet Union industry. In some cases, these officials were not able to tell us whether the workers or buildings converted from military production had been engaged in WMD-related work.

[a]At two projects in Russia, no physical defense conversion occurred because one project was never fully established and one housing project was just beginning.

[b]Four additional DEF projects were not included in our review because they were approved by DEF's board of directors after we began our work (two in Kazakstan and two in Russia). Two of the four were initiated by DSWA, and DEF has made investments to the projects to provide necessary capital.

Information on the defense conversion projects we reviewed follows. Appendix I provides additional information on DSWA-managed projects in Belarus, Kazakstan, Russia, and Ukraine. Appendix II provides details on DEF's conversion projects.

Belarus

Of the four DSWA-managed projects in Belarus, three initially established commercial ventures at (1) a nuclear-hardened computer circuit firm, (2) a satellite optics and reconnaissance firm, and (3) a mainframe computer factory. The other project funded construction of housing for Strategic Rocket Force personnel and therefore did not establish a defense conversion enterprise.

Kazakstan

The four DSWA-managed projects in Kazakstan are involved in establishing commercial ventures at (1) a firm responsible for converting an abandoned Soviet military command and control facility, (2) the

Kazakstan National Nuclear Center, (3) a production factory for submarine-launched missiles, and (4) a biological weapons production enterprise. The missile factory project was able to convert the entire firm from an active WMD missile producer to a commercial manufacturer of cryogenic vessels.

Russia

Of the five DSWA-managed projects in Russia, three established commercial partnerships at (1) a radar and avionics firm, (2) an electronics firm that made gear for space and military applications, and (3) a military avionics firm. One project to establish a soda bottling plant at a cruise missile enterprise was canceled. The housing project is just commencing, and plans are to include an aerospace enterprise that was involved with cruise missiles and intercontinental ballistic missile systems, an aerospace materials organization, and a firm that specialized in solid rocket motors.

The four DEF projects that we reviewed were all in Russia. These projects are to establish commercial ventures at (1) a nuclear weapons research and development firm, (2) a manufacturer of environmental control systems for MIG aircraft, (3) a manufacturer of components of nuclear submarines, and (4) a firm that designed and manufactured missile guidance systems.

Ukraine

Of the seven DSWA-managed projects in Ukraine, five established commercial ventures at (1) a manufacturer of radio components, including guidance systems; (2) a manufacturer of guidance and control systems; (3) a firm that designed and tested radio equipment and instrument systems for missiles and satellites; (4) a firm that produced control systems for missiles and space systems; and (5) a manufacturer of aerospace and military electronics equipment. One housing project used firms that built and designed missile silos and military bases. The second housing project used a firm that made parts for the Black Sea fleet but had no relationship to WMD.

Progress of Defense Conversion Projects

Defense conversion projects are at varying stages of development. As of February 1997, four projects had reached production and appeared to be moving forward, and in one case the U.S. partner bought the Russian partner's share of the joint venture. Other projects are experiencing business difficulties. DOD notified Congress of its plans to spend almost

$179.7 million, of which $143 million had been disbursed as of March 1997 for all defense conversion projects.

DSWA and DEF Projects

Two DSWA projects in Kazakstan, one DSWA project in Ukraine, and one DEF project in Russia have reached production and appear to be moving forward. However, five projects in Belarus, Russia, and Ukraine are no longer operating, and the remaining projects face obstacles. Some projects are still in the early stages of formation and will require time to mature, others face legal and bureaucratic challenges that are common in starting a commercial venture in the former Soviet Union, and others will likely need further capital investment to be successful. Table 2 categorizes the status of the 24 projects that we reviewed.

Table 2: Status of Defense Conversion Projects

Number of projects

Status	DSWA Belarus	DSWA Kazakstan	DSWA Russia	DSWA Ukraine	DEF Russia	Total
No longer operating	3	0	1	1	0	**5**
Not reached production but no apparent obstacles	0	0	0	1	3	**4**
Not reached production and has major obstacles	0	2	1	1	0	**4**
Reached production and has major obstacles	0	0	2	1	0	**3**
Reached production and moving forward	0	2	0	1	1	**4**
Housing projects	1	0	1	2	0	**4**
Total	**4**	**4**	**5**	**7**	**4**	**24**

Belarus

The three defense conversion projects DSWA initiated in Belarus in mid-1994 are now dormant or no longer operating. Two of those projects had reached production, but the businesses eventually failed. According to the U.S. partners in these projects, a poor political and economic environment and a lack of understanding between the U.S. and Belarus governments led to these failures. U.S. partners explained that Belarus government officials believed they would receive monetary assistance from the U.S. government. The Belarus enterprises and government did not understand that assistance would come through U.S. private firms in the form of equipment and business assistance. The housing project begun

in 1995 was completed in April 1997. This project did not have the objective of converting a defense enterprise.

Kazakstan

Four DSWA projects began in Kazakstan, in 1995, and they are progressing at varying rates. One is facing bureaucratic obstacles, and the U.S. and Kazakstan partners are having difficulties reaching agreements. Two of the projects have obtained additional funding from DEF to help move their commercial ventures forward. One of these projects has recently begun production, whereas the other faces a major obstacle and needs licenses to pursue a telecommunications business. One project that converted a submarine missile factory into a cryogenic vessel factory is now producing and selling its products in Europe, and company officials expect a profit after the first year.

Until recently, DEF projects were solely in Russia. However, DEF has signed agreements for two defense conversion projects in Kazakstan.

Russia

In 1994 and 1995, five DSWA-managed projects began in Russia. One project has been canceled, three face major obstacles before they can become commercially successful, and one is a housing project that is just getting started. The canceled project was intended to establish a soda bottling factory, but the Russian and American partners could not reach agreement. As a result, DSWA spent only $195,000 of the $5.1 million contract. The Russian participants in this project reported that the experience of working with an American company was beneficial to increasing their understanding of American business, and they subsequently negotiated business partnerships with other American companies.

Although three projects face major obstacles before they can become commercially successful, DOD officials noted that these challenges are no different from those facing other investments in Russia. One project was a contract awarded to a U.S. partner to help a Russian firm develop hardware and software for an air traffic control system. The future of this project mostly depends on the award of a Russian government contract for an air traffic control system. The second project produced hearing aids but has had difficulty finding a market for its products. The third project initiated a dental chair production line and was seeking to establish a bottling line for disinfectant, but the project needs additional investment capital to move forward. The housing project is in its initial stages and will

involve the conversion of Russian defense enterprises and the establishment of indigenous housing assembly and component manufacturing capabilities. Once these manufacturing lines are established, DOD plans to construct an unspecified number of homes for demobilized Strategic Rocket Force personnel with any remaining funds.

Three of the four DEF projects that we reviewed in Russia were in their early stages of development; therefore, it was premature to draw conclusions about their future progress. One of the projects has not drawn on DEF's investment because the market for the product has not matured and investment at this point could result in a loss. It is not yet clear if this project will move forward, but no money has been spent. The fourth DEF project has reached production and is moving forward; however, the Russian partner is no longer involved because the U.S. partner purchased its share of the venture. According to DEF officials, this project had a successful outcome. In addition, DEF has signed agreements for two other defense conversion projects in Russia, bringing the total number of DEF investments to eight, as of February 1997.

Ukraine

In Ukraine, DSWA initiated seven projects, five defense conversion projects and two housing projects in 1994 and 1995. As of March 1997, one project has not reached production but has no apparent obstacles, two projects have major obstacles to overcome, and one has reached production and is moving forward. According to the U.S. companies involved in these joint ventures, some delays can be attributed to Ukrainian government bureaucracy—obtaining proper funding and permits and following designated customs procedures. Also, Ukrainian companies involved in the joint ventures believed that DSWA contract funding would be paid directly to them rather than to the joint venture or the U.S. partner. The fifth defense conversion project, which had planned to establish a cellular phone production line at an aerospace and military electronic enterprise, is no longer operating. To restore this project's viability, DOD is currently attempting to identify a new American partner. The two housing projects for Strategic Rocket Force personnel are completed, and the defense conversion enterprises that were created from these projects are no longer operating.

DSWA and DEF Spending

DOD notified Congress of plans to spend nearly $179.7 million on defense conversion projects. It has disbursed $143 million, including $51.7 million

that was granted to DEF. Table 3 shows defense conversion spending as of March 1997.

Table 3: DSWA Defense Conversion Spending as of March 1997

Dollars in millions

	Notified	Obligated	Disbursed
Belarus	$20.0	$19.8	$18.7
Kazakstan	15.0	14.2	11.4
Russia	38.0	33.0	13.5
Ukraine	55.0	54.4	47.7
DEF grant[a]	51.7	51.7	51.7
Total	**$179.7**	**$173.1**	**$143.0**

Note: Included in these figures is $66 million that had been obligated to housing projects in Belarus, Russia, and Ukraine. Of the $66 million, $45 million has been disbursed.

[a]DSWA has disbursed all obligated funds to DEF, but the table does not show the amounts DEF had committed or spent.

As of December 1996, DEF had committed $22.6 million of its $51.7 million DSWA grant to eight defense conversion projects and had invested $16.6 million in conversion projects. DEF anticipates an additional U.S. government grant of $15 million in fiscal year 1997 from the State Department's Freedom Support Act funds.[6]

DEF Management Issues and Expenditures

DEF has complied with many elements of its grant agreement with DSWA, but DEF has not finalized all requirements, and DSWA has not followed through on compliance. DEF's operating expenditures have totaled $6.8 million since its inception in June 1994. Our analysis indicates that this is roughly equivalent to the rate of spending for operating expenses of other U.S. government-sponsored enterprise funds in Central and Eastern Europe and the former Soviet Union.

DEF Grant Agreement Issues

The June 1994 grant agreement between DSWA and DEF requires DSWA to conduct semiannual progress reviews of DEF unless both entities agree otherwise. The agreement also stipulates that DSWA will make

[6]A State Department official told us that the Department may provide another $5 million later in fiscal year 1997 or in fiscal year 1998. The Department will allocate the funds to the U.S. Agency for International Development, which will transfer them to DSWA for execution under an amendment to the existing grant agreement.

approximately three visits annually to DEF's home and field offices.[7] As of December 1996, DSWA had conducted two semiannual progress reviews that were held in DEF's Boston office. A program manager also told us that he made one visit to the site of the Kirovsky-Zavod joint venture in St. Petersburg, Russia. The results of the semiannual reviews were not documented in any systematic way and, according to a DSWA official, were informal. The minutes of DEF's board meetings do not contain any discussion of the results of these reviews, and the board members we talked to did not recall any briefings or discussions of such reviews. DEF officials and board members stated, however, that DEF and DSWA were in frequent communication and thus did not need more frequent or formalized reviews.

In January 1997, DSWA officials told us that they would begin conducting oversight in a more rigorous and formalized way and would perform the semiannual reviews and the required office visits. Accordingly, in February 1997, the DSWA program manager conducted a semiannual review and office visit in Richmond with DEF officials and has planned two trips to DEF's new field offices in Moscow and St. Petersburg.

In addition, DEF has not developed the performance benchmarks that the grant agreement requires be established in consultation with DSWA.[8] The agreement requires DEF to establish a statement of objectives that includes benchmarks to facilitate the assessment of DEF's expected accomplishments. As of February 1997, DEF had developed an objectives statement but had not established benchmarks to assess whether and to what extent DEF's expected accomplishments were being achieved. The grant agreement states that DEF's success will be evaluated by the extent to which it meets or contributes to its objectives, such as the successful demilitarization of a defense industry and the development of a number of key joint business initiatives between U.S. and former Soviet Union private firms. The absence of these benchmarks makes it difficult to assess DEF's success or failure.[9] In March 1997, DOD officials drafted benchmarks for

[7]Until April 1996, DEF had home offices in Richmond, Virginia, and Boston, Massachusetts. In April, DEF closed the Boston office. DEF has recently opened field offices in St. Petersburg and Moscow, Russia.

[8]DEF has established portfolio indicators to evaluate its investments, such as rates of return achieved, milestones for equipment and licenses procured, and exit mechanisms. DEF calls these indicators benchmarks, but they differ from the benchmarks required by the grant agreement, which require measuring progress toward the objectives of demilitarization and defense conversion.

[9]In the future, DOD will have to consider the Government Performance and Results Act of 1993, which requires all federal agencies to establish systems for measuring whether agency programs are meeting their intended objectives.

DEF and told us that these benchmarks, once coordinated with DEF, would be included in the requirements for the semiannual progress reviews.

In May 1995, DSWA amended the grant agreement to require DEF to submit a long-range plan by September 1995 that, at a minimum, would address how DEF intends to become self-sufficient by 1998. DEF has not yet presented a specific plan to DSWA for approval; however, DOD officials stated that DEF will do so on March 31, 1997. DEF plans for self-sufficiency include attracting private capital, and, according to a DEF official, DEF expects to be investing private funds by 1998. DEF management presented a plan to its board of directors in December 1996 and provided preliminary briefings to DOD officials on the plan's essential elements in December 1996 and January 1997. The proposed plan involves establishing a private equity fund with $15 million of DEF capital and shared management, an arrangement similar to that used by the Polish-American Enterprise Fund in establishing its private equity fund. The private equity fund will focus on enterprises undergoing industrial and technological conversion, but will not be strictly limited to defense conversion projects.[10] However, consistent with the legislation establishing DEF, investments by DEF in this fund must support programs for demilitarization of industries and defense conversion.

It has been difficult for U.S. government-sponsored enterprise funds to attract private capital; only the first 2 funds—the Polish-American Fund and the Hungarian-American Fund—of the 11 that the government has sponsored in Central and Eastern Europe and the former Soviet Union have been able to do so. To attract private capital, enterprise funds must have a successful record of investments. The Hungarian-American Fund began to look for private capital in 1991 and was finally successful in 1996. The investment of private capital can provide fund management with an opportunity to earn incentive compensation based on earnings over and above the grant ceiling of $150,000 for fund managers.[11]

DEF Operating Expenses

The aggregate level of DEF's operating expenses is consistent with that of other U.S. government-sponsored enterprise funds in Central and Eastern Europe and the former Soviet Union. DEF expended $6.8 million between

[10]A DEF official stated that the private fund will not make any nondefense-related investments until DEF funds are fully invested in defense conversion projects.

[11]DEF's grant agreement states that employees may earn no more than $150,000 per year from grant funds, and any compensation in excess of the ceiling may be paid from sources other than grant funds.

June 1994 and December 1996 for operating expenses.[12] Table 4 shows that DEF's expenditure rate falls within the range experienced for all enterprise funds and for those of similar size.[13] Table 5 shows DEF's expenses by category for the last 2 fiscal years. Consistent with most U.S. government-sponsored international enterprise funds, project expenses (legal, accounting, and consulting) and personnel compensation constitute the largest share of DEF's operating expenses.

Table 4: Operating Expenses Among Enterprise Funds as of September 1996

Dollars in millions

Fund	Grant commitment	Annualized operating expenses as a percentage of grant commitment
Polish-American Fund	$264	1.09
Albanian-American Fund	30	1.78
U.S.-Russia Fund	440	1.90
Western Newly Independent States Fund	150	3.13
Baltic-American Fund	50	3.14
Bulgarian-American Fund	55	3.33
Central Asian Fund	150	3.38
Defense Enterprise Fund	**71**	**3.77**
Czech and Slovak American Fund	65	4.20
Hungarian-American Fund	70	4.38
Romanian-American Fund	50	4.53

Note: We calculated the percentage of operating expenses by annualizing each fund's expenses since inception and compared that amount to the grant commitment for each fund.

[12]This amount includes $113,000 in operating expenses incurred for the period June through September 1994.

[13]There are several ways to evaluate administrative expenses, including comparisons to average performing assets, investment income, and grant amount. Because of DEF's relatively early stage of development and the availability of consistent data, we used operating expenses to grant amount to make this comparison.

Table 5: DEF Operating Expenses by Category for Fiscal Years 1995 and 1996

Dollars in thousands

	FY 1995		FY 1996	
Operating expenses	**Amount**	**Percent**	**Amount**	**Percent**
Project expenses	$406	20	$1,556	34
Employee compensation and benefits	700	34	1,033	22
Bad debt provision	0	0	600	13
Travel and related expenses	222	11	293	6
Legal and accounting	214	11	240	5
Occupancy	71	4	193	4
Consulting	96	5	141	3
Raising private capital	10	0	118	3
Insurance	49	2	42	1
Communications	38	2	56	1
Taxes and licenses	37	2	44	1
Office supplies	32	2	53	1
Depreciation and amortization	27	1	108	2
Miscellaneous	121	6	170	4
Total	**$2,023**	**100**	**$4,647**	**100**

Recommendation

In addition to the recent efforts DOD has initiated to strengthen its oversight of DEF, we recommend that the Secretary of Defense direct that performance benchmarks be established, as required by DOD's grant agreement with DEF; a long-range plan for attracting private capital be prepared by DEF and approved by DOD; and semiannual progress reviews and the required office and field visits be performed.

Agency Comments and Our Evaluation

DOD and DEF provided written comments on a draft of this report. DOD concurred with our report and recommendation and noted its plans to implement our recommendation. DEF did not expressly disagree with our report or recommendation but stated that Congress did not intend for its oversight to be carried out in the same manner as oversight of a typical U.S. Agency for International Development or DOD grantee. We generally agree with DEF on this matter; therefore, our recommendation is limited to compliance with the oversight requirements of the grant agreement itself. DEF also stated that it has controlled its expenses better than our report suggests. To evaluate DEF operating expenses, we used the most consistent and readily available data for all 11 U.S. government-sponsored enterprise

funds. DOD's and DEF's comments are presented in appendixes III and IV, respectively.

Scope and Methodology

To determine the status of ongoing defense conversion projects and better understand their potential WMD impact, we reviewed 20 DSWA and 4 DEF defense conversion projects that had been approved at the time we began our review in early July 1996. We did not review the four DEF projects that were approved after we began our review. In reviewing these conversion projects, we examined records and interviewed officials at DSWA, DOD, DEF, and U.S. private firms involved in the defense conversion projects. We also visited several locations in Russia and Kazakstan and we interviewed U.S., Russian, and Kazakstan government and private officials and toured sites of 12 projects to observe first-hand the (1) buildings, (2) condition of the projects and equipment being used, and (3) current stage of development. During these visits, we attempted to confirm the prior uses of buildings being employed for these projects and the previous roles of employees. In Belarus and Ukraine, we relied on statements and documents provided by DSWA and U.S. contractors. For all projects, we relied on the views of officials associated with the projects regarding how each project plans to overcome obstacles, achieve production, and sell products.

In assessing the WMD attributes and the ability of each project to convert WMD capability, we did not review the DSWA and DEF processes for selecting defense conversion projects. For the purposes of this review, we accepted DOD's judgment that the list of 150 firms included WMD-related enterprises. We were not able to independently verify the WMD relationships of conversion projects and we relied on DSWA, DEF, U.S. contractor, and joint venture officials to provide accurate information. In Kazakstan and Russia, we spoke with joint venture officials who are former employees of WMD enterprises because the facilities that we saw no longer produced WMD components. In Belarus and Ukraine, we relied on information from DSWA project managers and industry officials to understand former capabilities of former Soviet Union enterprises. In all cases, we used multiple independent sources to draw our conclusions.

In reviewing DEF management practices and operating expenses, we interviewed and obtained documents from DEF and DOD officials on DEF's policies, procedures, and practices. We reviewed DEF's grant agreement, bylaws, corporate policies, and procedures. These documents established criteria for assessing DEF's management practices. We analyzed various DEF project and expense files. We also spoke with selected DEF investment

partners. We obtained documents from the U.S. Agency for International Development on policies and expenditures of other enterprise funds. We used data from these funds to establish a basis for determining the consistency of DEF expenses with other funds.

We conducted our review between July 1996 and March 1997 in accordance with generally accepted government auditing standards.

We are sending copies of this report to the Secretaries of Defense and State, the President of the Defense Enterprise Fund, and other appropriate congressional committees. We will also make copies available to others on request.

Please contact me on (202) 512-4128 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix V.

Sincerely yours,

Harold J. Johnson, Associate Director
International Relations and Trade Issues

Contents

Figures

Abbreviations

DEF	Defense Enterprise Fund
DOD	Department of Defense
DSWA	Defense Special Weapons Agency
WMD	weapons of mass destruction

DSWA-Managed Conversion Projects

The Defense Special Weapons Agency (DSWA) managed 20 defense conversion projects in Belarus, Kazakstan, Ukraine, and Russia. Typically, DSWA contracted with private U.S. firms to initiate projects at former weapons of mass destruction (WMD) industries in the former Soviet Union. These private firms often used their own capital as investments in these projects.

Belarus Defense Conversion Projects

DSWA planned to spend $20 million on four defense conversion projects in Belarus. Three of the projects involved U.S. firms and Belarus defense-related entities—Belomo Optics and Mechanical Manufacturing Association, Integral Research and Production Amalgamation, and Minsk Computer. One project is to provide housing to demobilized Strategic Rocket Force personnel.

Belomo

- **Contract amount and date:** $960,000 awarded in April 1994.
- **Former defense capability:** Producer of satellite and aerial reconnaissance optics, night vision optics, lasers, simulators, and tank and armored vehicle optics.
- **Former employment level:** 40,000 at height of production; 20,000 in 1993.
- **Purpose of joint venture:** To manufacture and sell laser pointer devices.
- **Defense building conversion:** Refurbished a 12,900-square foot production area. The site may have manufactured parts for a missile homing device.
- **Joint venture production:** Produced 19,023 laser pointers, which are used by speakers in presentations.
- **Joint venture employment:** 88 former defense workers. We could not confirm if these employees worked on WMD-related projects.
- **Obstacles:** Not applicable.
- **Status of project:** Ceased operations in 1996. Falling retail prices for the laser pointers and increased competition from suppliers in Asia created a situation in which the venture could no longer compete.

Integral

- **Contract amount and date**: $5.8 million awarded in April 1994.
- **Former defense capability**: Producer of nuclear-hardened chips for the Soviet military. According to the U.S. partner of the project, Integral produced 40 percent of the chips on the Soviet Union's missile guidance systems. Integral also produced integrated circuits, transistors, electronic watches, and microwave and pulse diodes.

- **Former employment level**: 33,000 in September 1993.
- **Purpose of joint venture:** To produce low end integrated circuits.
- **Defense building conversion**: Converted a 26,400-square foot facility, located in the center of Integral's complex, that had been used for military production. The facility made microprocessors that could be used in guidance systems.
- **Joint venture production**: Began production and delivery of integrated circuits in May 1995.
- **Joint venture employment**: 250 former defense workers.
- **Obstacles**: Not applicable.
- **Status of project**: No longer operational. Because of a poor business environment, the American partner withdrew from the joint venture.

Minsk Computer

- **Contract amount and date**: $2.5 million awarded in September 1994.
- **Former defense capability**: Manufacturer of mainframe computers for the Soviet military. Before the breakup of the former Soviet Union, over 85 percent of Minsk Computer's work was for the military. DSWA reported in 1993 that Minsk Computer had no defense work and had laid off 40 percent of its employees.
- **Former employment level**: 10,000 at the height of production.
- **Purpose of joint venture**: To produce solid-state battery chargers, power supplies, transformers, and wireless communications modems for computer network systems.
- **Defense building conversion**: Converted a 17,200-square foot facility that was used for military production. We were not able to determine if this facility had been used for WMD-related activities.
- **Joint venture production**: Produced solid-state battery chargers, power supplies, and transformers. Developed 25 prototype wireless communications modems.
- **Joint venture employment**: 168 former defense workers employed.
- **Obstacles**: Not applicable.
- **Status of project**: No longer operational.

Housing

- **Contract amount and date**: $9.9 million awarded in May 1995.
- **Former defense capability**: No commercial venture is being established as part of this project.
- **Former employment level**: Not applicable.
- **Purpose of joint venture**: To build 171 apartments for demobilized Strategic Rocket Force personnel and their families.
- **Defense building conversion**: Not applicable.

- **Joint venture production**: Not applicable.
- **Joint venture employment**: Not applicable.
- **Obstacles**: None.
- **Status of project**: Completed in April 1997.

Kazakstan Defense Conversion Projects

DSWA notified Congress of its intent to spend $15 million on four defense conversion projects in Kazakstan. These projects are between U.S. firms and Kazakstan defense-related entities—Biomedpreparat, Gidromash, the National Nuclear Center, and Kazinformtelecom.

Biomedpreparat

- **Contract amount and date**: $2.7 million awarded in March 1995.
- **Former defense capability**: Biological weapons research and production. According to joint venture officials, Biomedpreparat produced organisms such as Ebola and Anthrax.
- **Former employment level**: 700 at its peak in the mid-1980s; 200 in October 1996.
- **Purpose of joint venture**: To manufacture and distribute vitamins, pharmaceuticals, and antibiotics.
- **Defense building conversion**: Renovations have begun on Biomedpreparat's infirmary (see fig. I.1), which was used as the facilities' decontamination unit and will house initial pharmaceutical production. Joint venture officials also hope to use a waste treatment building for future production.
- **Joint venture production**: The joint venture has bottled vitamins that were manufactured in the United States to use for its initial marketing efforts. The initial production line is not yet complete.
- **Joint venture employment**: In October 1996, 14 former Biomedpreparat workers were employed, and 80 to 100 former workers may be employed once full production is ready.
- **Obstacles**: This project faces major challenges because government obstacles remain and the U.S. and Kazakstan partners are having difficulties reaching agreements. Also, facility renovations are not complete, and necessary equipment is not in place.
- **Status of project**: Renovations on the infirmary are being completed, and pharmaceutical manufacturing equipment is being shipped to Kazakstan to set up a production line.

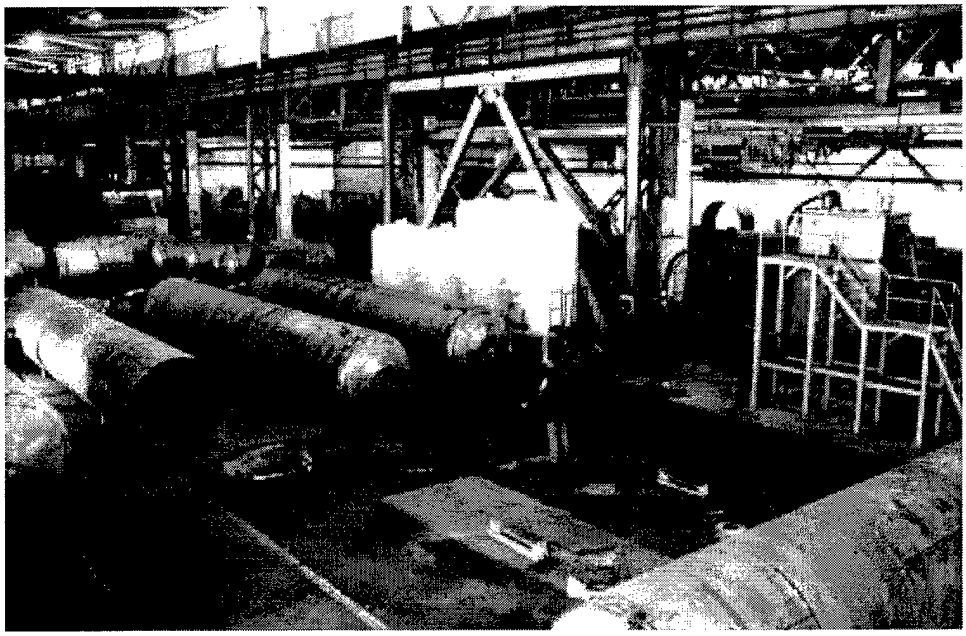
Figure I.1: Abandoned Infirmary at a Biological Weapons Factory Where Construction of a Pharmaceutical Production Line Has Begun

Gidromash

- **Contract amount and date**: $3 million awarded in March 1995.
- **Former defense capability**: Built components of missile delivery systems and manufactured engine casings. Approximately 85 to 90 percent of production had been devoted to defense, and 10 percent was related to WMD. The WMD production was focused on the manufacture of submarine-launched missiles and various prototypes. The plant manufactured the entire missile device, except for the nuclear component. When defense conversion efforts were commencing in Kazakstan in 1994, 40 percent of the plant was being utilized for the production of antisubmarine rockets and missiles.
- **Former employment level**: 2,200 in 1988; 1,400 in 1994.
- **Purpose of joint venture**: To manufacture a wide array of standard and specialty pressure vessels, including cryogenic pressure vessels, valves, and other products for the oil, gas, and petrochemical industry.
- **Defense building conversion**: Converted 699,700-square feet of Gidromash's production space (see fig. I.2). Some equipment from Gidromash's former production lines was utilized, whereas other equipment was junked. Joint venture officials pointed out that one large lathe used for missile production was outside rusting.

- **Joint venture production**: The cryogenic vessel production line opened in July 1996. The project has firm orders for 150 cryogenic vessels and produces them at a rate of 3 to 4 a week.
- **Joint venture employment**: 374 former Gidromash workers.
- **Obstacles**: None.
- **Status of project**: Production has begun, and the joint venture is growing. Anticipated sales are $5 million to $6 million in 1996, $12 million to $15 million in 1997, and $20 million to $40 million by 2000.

Figure I.2: Cryogenic Pressure Vessel Production at a Former Missile Production Facility



National Nuclear Center

- **Contract amount and date**: $4 million awarded in March 1995.
- **Former defense capability**: The National Nuclear Center is a Kazakstan government organization that was established after the fall of the Soviet Union to carry out basic research in the field of nuclear energy. The center is responsible for sites that conducted nuclear weapons testing and research while the Soviet Union was intact. It also manages several research reactors.
- **Former employment level**: 2,000 employees in 1995.
- **Purpose of joint venture**: To establish a printed circuit board production and marketing business.

- **Defense building conversion**: The project's main facility is located in Kurchatov, Kazakstan, which is just outside the Semipalatansk nuclear test site and is located on the grounds of the National Nuclear Center (see fig. I.3). This facility was constructed as a Soviet Union defense conversion project in the late 1980s. The second facility occupies an administrative office building just outside the grounds of the National Nuclear Center near Almaty, Kazakstan. These buildings were not used for any WMD-related activities.
- **Joint venture production**: Production began recently.
- **Joint venture employment**: 28 National Nuclear Center workers were employed as of October 1996. Additional center workers are to be hired as production demands warrant.
- **Obstacles**: None.
- **Status of project**: Project officials plan to sell printed circuit boards on the world market. The U.S. partner, an established firm in the electronics industry, will use its marketing resources to sell initial products. The project has brought in the Defense Enterprise Fund (DEF) as an investor to have enough capital to initiate production. DEF has committed a total of $2.5 million to this project and invested $500,000.

Figure I.3: Building Originally Constructed for a Soviet Defense Conversion Project That Now Houses a U.S.-Kazakstan Printed Circuit Board Production Line

Kazinformtelecom

- **Contract amount and date**: $5 million awarded in January 1995.
- **Former defense capability**: Kazinformtelecom is responsible for maintaining the Saryshagan missile testing site. The site controlled

satellites, monitored intercontinental ballistic missiles, regulated early detection and tracking systems, and tested surface-to-air and antiballistic missiles. Kazinformtelecom officials explained that this site, which was abandoned by the Russian military in 1994, was one of three central Soviet command and control sites and that it controlled satellite communications for the Soviet military.

- **Former employment level**: 3,000 military and 2,000 civilian workers were employed at the Saryshagan site.
- **Purpose of joint venture**: To establish an international and domestic wireless telecommunications service in Kazakstan and have wireless communications in 11 Kazakstan cities.
- **Defense building conversion**: The Saryshagan site is 1 of 11 sites operated by the joint venture but is the only site with a defense conversion application. The building at the abandoned Saryshagan base was unoccupied, and the project was using a former Soviet satellite dish that had been abandoned (see fig. I.4).
- **Joint venture production**: Telecommunications service has not yet begun. The establishment of service depends on the equipment being in place and the granting of necessary government licenses.
- **Joint venture employment**: 52 local national employees. Kazinformtelecom officials explained that about 25 of these people, 20 of whom are engineers, worked at the Saryshagan site before conversion. The joint venture will hire up to 250 additional people once obstacles are overcome.
- **Obstacles**: As of February 1997, three significant obstacles needed to be overcome before the project could become fully functional. First, no resolution had been reached on an interconnect agreement with Kazaktelecom. Second, the Kazakstan government had granted a license to the venture for data communications, but it had not granted a license for voice communications. Until a voice communications license is obtained, it will not be possible to operate a profitable business. Third, one subcontractor had not delivered necessary equipment.
- **Status of project**: Much of the equipment is in place, and the project officials are trying to overcome the obstacles. DEF has become an investor in this project.

Figure I.4: Abandoned Soviet Command and Control Base Where One Project Occupies a Building

Russia Defense Conversion Projects

DSWA notified Congress of its intent to spend $38 million on five defense conversion projects in Russia. Four of these projects are between U.S. firms and Russian defense-related entities—GOSNIIAS, Istok, Leninets, and Mashinostroyenia. One project is to provide housing to demobilized Strategic Rocket Force personnel and establish joint ventures with three defense-related entities—Kompozit, Mashinostroyenia, and Soyuz.

GOSNIIAS

- **Contract amount and date**: $4.1 million in July 1994.
- **Former defense capability**: GOSNIIAS is a state-controlled enterprise that designs and tests military avionics and carries out avionics and weapons integration.
- **Former employment level:** 8,000 employees in 1992.
- **Purpose of joint venture**: While no joint venture was established, the project was intended to build prototypes for air traffic control hardware and software based on the Global Positioning System and GLONASS, the Russian counterpart.
- **Defense building conversion**: Occupied a 8,600-square foot military design facility that had previously been used for conducting mathematical analyses concerning weapons.

- **Joint venture production**: Developed a business plan and built prototypes for air traffic control hardware and software.
- **Joint venture employment**: This project began with a staff of 10 defense workers and employed as many as 60 defense workers at one time.
- **Obstacles**: While the partnership has developed a business plan and built prototype hardware and software, a market has yet to develop. GOSNIIAS and the U.S. contractor tell us that they plan to work together in competing for a future Russian government contract for an air traffic control system. However, the contract has yet to be tendered. This contract could result in 200 jobs for GOSNIIAS and be worth $80 million to $100 million.
- **Status of project**: Work on the DSWA contract is nearly complete, and closeout on the contract is pending. Rockwell intends to create a long-term relationship with GOSNIIAS and is planning on awarding subcontracts to GOSNIIAS for a variety of efforts.

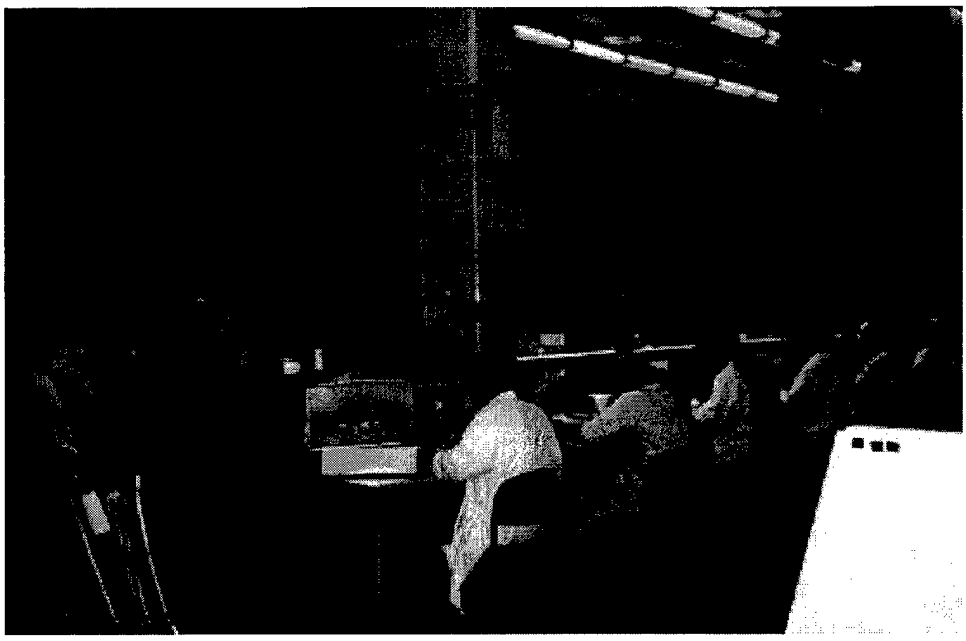
Istok

- **Contract amount and date**: $5.7 million awarded in July 1994.
- **Former defense capability**: Producer of magnetrons, klystrons, high-powered vacuum tubes, carbon dioxide lasers, electro-optical devices, batteries, microwave devices, and solid-state electronic components.
- **Former employment level**: 8,000 in 1994.
- **Purpose of joint venture**: To manufacture and distribute hearing aids.
- **Defense building conversion**: The project converted a 15,100-square foot facility that produced highly integrated circuits. According to joint venture officials, this defense facility was associated with WMD.
- **Joint venture production**: By early summer 1995, production had begun on a hearing aid (see fig I.5) that was useful for the moderately hearing impaired—about 50 to 60 percent of the hearing impaired population in Russia. The joint venture is capable of producing 250,000 hearing aids annually and initially produced about 25,000 hearing aids. The venture purchased parts for 40,000 hearing aids, but some of the components were in poor condition.
- **Joint venture employment**: 160 former defense workers. According to Istok officials, 80 percent of the staff are engineers, but we did not determine if they had worked on WMD-related projects.
- **Obstacles**: The joint venture suffered a major setback in distributing its hearing aids. It had planned to sell the hearing aids via the Russian government's medical technology supply agency, which would have distributed them to more than 200 hearing clinics around Russia. However, the lack of government funds prompted the supply agency to only

purchase hearing aids for the severely hearing impaired—a small population for which Istok's hearing aid was not well suited. At that time, the venture had no other products. The joint venture needs additional financing to establish new production lines.

- **Status of project**: Istok is now planning to produce another hearing aid and focus attention on selling it on the export market (mostly in third world countries) as well as on the Russian market. Istok also hopes to begin production on a hearing aid aimed at severely hearing impaired individuals. The joint venture has asked DSWA to provide additional funding to help move the venture forward.

Figure I.5: Hearing Aid Production at a Former Integrated Circuit Production Building

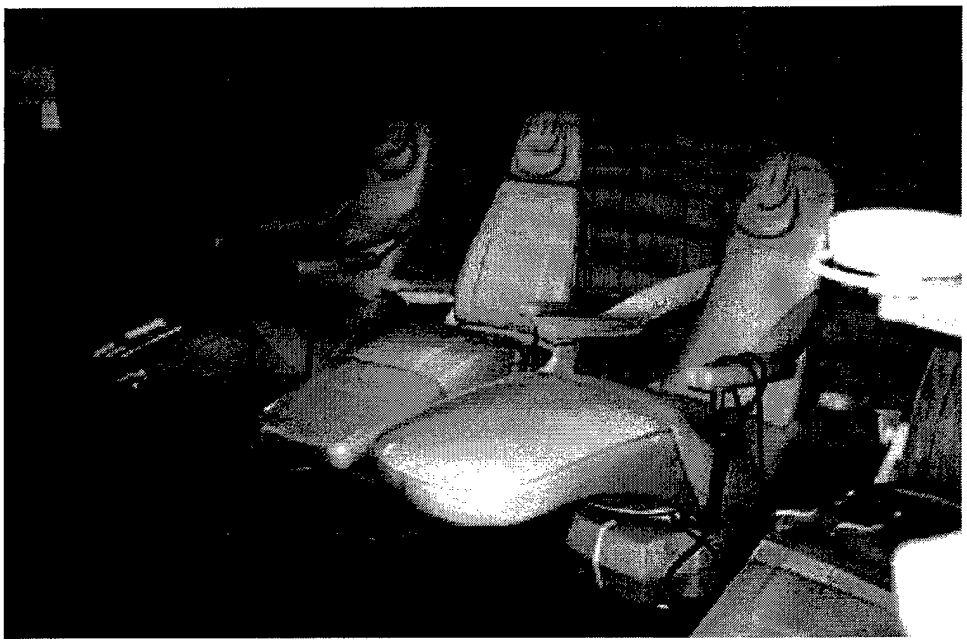


Leninets

- **Contract amount and date**: $2 million in June 1994.
- **Former defense capability**: Manufacturer of airborne radars and other radio electronic equipment. Leninets officials claimed that they also made specialized equipment, such as chips for high-frequency radars used in MIG and Sukoi aircraft. Leninets consists of 16 factories, 10 research organizations, and 50 small enterprises.
- **Former employment level**: Unknown.

- **Purpose of joint venture**: To remanufacture dental chairs, distribute new dental equipment, and bottle solutions for oral infection control.
- **Defense building conversion**: The project is occupying a 4,600-square foot building that formerly operated, in part, as a toy factory, but Leninets officials stated that 55 percent of the building was devoted to manufacturing portable naval radiation decontaminators, which were intended for use on naval vessels after a nuclear attack. Production stopped in 1993.
- **Joint venture production**: As of October 1996, the project had sold 187 remanufactured dental chairs, earning the venture about $35,000 a month (see fig. I.6). The distribution of new dental equipment earns the project about $80,000 a month.
- **Joint venture employment**: About 22 people, some of which have manufacturing skills associated with computers and other equipment and others are being used in accounting and marketing roles.
- **Obstacles**: The project has had considerable difficulty in setting up its bottling operation, which it sees as more lucrative than the other ventures. The bottling operation has been delayed for over 1 year due to setbacks at the U.S. manufacturer of the bottling equipment and problems with Russian customs. Project officials also underestimated the cost of purchasing the equipment and refurbishing the space that they are to occupy. As a result, the project had run out of funds at the end of 1996.
- **Status of project**: The project is seeking at least $250,000 to $500,000 in new capital to start up the bottling line.

Figure I.6: Dental Chair Production Line at a Former Manufacturer of Portable Naval Radiation Decontaminators



Mashinostroyenia

- **Contract amount and date:** $5.1 million awarded in June 1994.
- **Former defense capability**: Producer of cruise missiles, intercontinental ballistic missiles, and maneuverable satellites.
- **Former employment level**: 9,000 in 1992.
- **Purpose of joint venture**: To establish a cola bottling facility.
- **Defense building conversion**: Plans called for the conversion of Mashinostroyenia's nitrogen building, which was needed to produce missiles.
- **Joint venture production**: The joint venture was never established, so it never reached production.
- **Joint venture employment**: None.
- **Obstacles**: According to Mashinostroyenia officials, DOD selected the project without their input, and they were not happy to have a low-skilled project at their high-technology firm.
- **Status of project**: The American partner and Mashinostroyenia were not able to work out differences, and the U.S. partner asked to be released from the contract. DSWA agreed in April 1996 to cancel the contract and disbursed $195,000 of the $5.1 million contract.

Housing

- **Contract amount and date**: $20 million awarded in June 1995.
- **Former defense capability**: The Russian partners for this project include Soyuz, a firm that built turbofans for cruise missiles; Kompozit, a producer of heat shields for missiles and space systems; and Mashinostroyenia.
- **Former employment level**: Kompozit employed 10,000 in 1992, Mashinostroyenia employed 9,000 in 1992, and Soyuz employment was unknown.
- **Purpose of joint venture**: To construct a housing industry in Russia and build homes for Strategic Rocket Force personnel.
- **Defense building conversion**: No buildings have been selected for this project.
- **Joint venture production**: Unknown at this time because the joint venture has not been established.
- **Joint venture employment**: Unknown at this time because the joint venture has not been established.
- **Obstacles**: Until January 1997, DOD and the Russian government were not able to reach agreement on the scope of this project.
- **Status of project**: In January 1997, the Russian government and DOD officials agreed that Russian WMD enterprises would work with an American partner to establish five production lines. These production lines are a modular housing assembly facility, a window and door manufacturing facility, a low-pressure brass casting production line, an asphalt shingle production line, and a lumber mill capable of supplying the lumber suitable for housing construction. Remaining funds will be used to provide housing to demobilized Strategic Rocket Force personnel.

Ukraine Defense Conversion Projects

Between 1994 and 1995, DSWA signed contracts totaling $53.5 million to initiate seven defense conversion projects. These projects were between U.S. firms and Ukraine defense-related entities—Central Design Institute and Montazhnik K, Fregat, Hartron, Kommunar, Meridian, Monolit, and Orizon.

Central Design Institute and Montazhnik K

- **Contract amount and date:** $16 million awarded in September 1994 to construct 135 apartment units. Contract options were exercised to construct an additional 60 units for a total cost $18.7 million.
- **Former defense capability:** Design and construction of defense-related structures for the Ukrainian Ministry of Defense.
- **Former employment level:** Unknown, but current employment is 22,000.

- **Purpose of joint venture:** To design and construct apartment units for demobilized Strategic Rocket Force personnel and transfer modern housing construction and production technologies to Ukraine.
- **Defense building conversion:** There was no defense conversion requirement as the Ukrainian Ministry of Defense was the customer, joint venture partner, and subcontractor for this housing project. Furthermore, in 1991 the Ministry had established its own housing construction complex. It is now pursuing more commercial construction activities.
- **Joint venture production:** Designed and constructed 195 apartment units.
- **Joint venture employment:** 440 workers.
- **Obstacles:** None.
- **Status of project**: As of May 1996, all of the 195 apartment units had been constructed and transferred to the Ministry of Defense. The joint venture was hoping to continue with other construction projects.

Fregat

- **Contract amount and date:** $10 million awarded in June 1994 and later increased to $15 million.
- **Former defense capability:** Producer of ship parts and equipment for the Black Sea Fleet. No ties to producing or supporting WMD.
- **Former employment level:** 3,200 in 1993.
- **Purpose of joint venture:** To produce and construct up to 261 prefabricated housing units for demobilized Strategic Rocket Force personnel at Pervomaysk, Ukraine.
- **Defense building conversion:** The joint venture occupied about 150,700 square feet of one building. Former production in this building was not related to WMD.
- **Joint venture production:** Produced 261 prefabricated housing units.
- **Joint venture employment:** Nearly 300 workers were involved in fabricating, erecting, and finishing the housing modules.
- **Obstacles:** None.
- **Status of project**: The last of the 261 housing units were turned over to the Ukrainian Ministry of Defense in August 1996. The joint venture had hoped to secure domestic and foreign customers for the prefabricated housing units, but there was no market for the product. The equipment used to produce the units remains at the Fregat factory in Pervomaysk.

Hartron

- **Grant amount and date:** $5 million grant awarded in May 1994.
- **Former defense capability:** Hartron, the largest manufacturer of control systems in Ukraine, developed, produced, and installed control systems for missiles and space systems.
- **Former employment level:** Unknown, but current employment is 10,000.
- **Purpose of joint venture:** To produce instrumentation and control systems to improve the safety and reliability of Ukrainian nuclear power plants.
- **Defense building conversion:** The joint venture occupies about 10,800 square feet of space in one building. The Hartron facility, however, was not a production facility. Instead, it was used for designing and testing purposes. Manufacturing of the systems was done at other facilities.
- **Joint venture production:** The joint venture delivered its first instrumentation and control system in May 1996 to the South Ukraine nuclear plant.
- **Joint venture employment:** The joint venture hired 65 employees, but this number could increase with production volume.
- **Obstacles:** The joint venture must contend with untimely customer payments. Its customers, the Ukrainian nuclear power plants, are suffering financial difficulties and often delay payment. The American partner requested an extension of the grant until September 1997 and an increase of the rate of disbursement, not the grant amount, to lower the cost of the equipment sold to the nuclear power plants. No decision has been made on this proposal.
- **Status of project:** As of October 1996, the joint venture had a backlog of orders worth over $10 million.

Kommunar

- **Contract amount and date:** $3.3 million awarded in January 1995.
- **Former defense capability:** Manufacturer of aerospace and military electronics equipment, including missile and space guidance systems and relays for satellites.
- **Former employment level:** Unknown, but current employment is 18,000.
- **Purpose of joint venture:** To design, manufacture, and distribute cellular telephones in Asia and Ukraine.
- **Defense building conversion:** The joint venture was to convert nearly 40,000 square feet of factory space.
- **Joint venture production:** None, as the contract is being closed out. The joint venture has not been registered in Ukraine. However, Kommunar officials still hope to pursue cellular telephone production through other opportunities. They believe that the market for cellular telephones is growing worldwide.

- **Joint venture employment:** Had employed 55 workers.
- **Obstacles:** The project is not operational. The U.S. partner lacks the capital to proceed with the project, and Kommunar would like to form a venture with a different firm. DOD is attempting to attract a new U.S. partner to this project.
- **Status of project:** DSWA is closing out the contract with the American partner.

Meridian

- **Contract amount and date:** $4.1 million awarded in October 1995.
- **Former defense capability:** Involved in designing and testing radio equipment and instrument systems for missiles and satellites.
- **Former employment level:** Unknown, but current employment is 4,800.
- **Purpose of joint venture:** To manufacture high-quality die cast products for the housing, appliance, and automotive markets.
- **Defense building conversion:** The joint venture will eventually occupy over 95,000 square feet of factory space in about four buildings. One building is presently being refurbished to accommodate die casting equipment.
- **Joint venture production:** The joint venture hopes to begin production in July 1997.
- **Joint venture employment:** Once production begins, the venture will employ about 250 workers.
- **Obstacles:** None.
- **Status of project:** As part of its business plan, the American partner wants to fully capitalize the joint venture and is seeking over $11 million from such entities as DEF, the Overseas Private Investment Corporation, and the European Bank for Reconstruction and Development. According to the joint venture partner, DEF has expressed interest in funding the joint venture and is considering making an investment.

Monolit

- **Contract amount and date:** $4.8 million awarded in October 1995.
- **Former defense capability:** Manufacturer of electronics for rocket control and guidance systems.
- **Former employment level:** 20,000 in the 1980s according to the joint venture partner. Employed 13,000 workers as of June 1996.
- **Purpose of joint venture:** To manufacture advanced instrumentation and control systems for nuclear and conventional commercial power stations in Ukraine and other former Soviet states.
- **Defense building conversion:** The production lines that occupied the 18,300-square foot facility were used to manufacture electronics for rocket

control and guidance systems. The facility, however, was not active when the joint venture was formed.

- **Joint venture production:** Production has yet to begin. Once equipment is installed, the venture could reach production in 6 to 8 weeks.
- **Joint venture employment:** The joint venture employs 25 workers. Once production begins, the number could increase.
- **Obstacles:** Even though the conversion of the facility is nearly complete, the Ukrainian State Customs Committee is not permitting joint venture equipment to enter Ukraine despite, according to DOD officials, an agreement between the U.S. and Ukrainian governments. Repeated attempts to resolve this issue have proven unsuccessful. Such delays will further impact the project schedule.
- **Status of project:** The scope of the work had to be modified because Monolit could not afford the labor and design work associated with refurbishing the factory space to accommodate the needed equipment.

Orizon

- **Contract amount and date:** $2.7 million awarded in October 1995.
- **Former defense capability:** Manufacturer of precision guidance and control systems for military satellites.
- **Former employment level:** Once employed about 18,000 workers. 9,000 current employees.
- **Purpose of joint venture:** To produce and assemble polyvinyl chloride windows and doors for sale in the former Soviet Union, especially Ukraine.
- **Defense building conversion:** The joint venture is converting 53,800 square feet of space and will have an additional 10,800 square feet for storage. In the building that the joint venture occupies, satellite guidance and control systems were installed and tested. High bay areas, required for the assembly and testing of large military satellite systems, were idle before the establishment of the joint venture.
- **Joint venture production:** Production was to have begun in October 1996. Although the project schedule slipped about 5 months, the joint venture began production in March 1997.
- **Joint venture employment:** 15 workers; employment is expected to increase with the commencement of production.
- **Obstacles:** Orizon was to have provided the labor and materials for modifying the building and installing the required utilities, but it did not receive its appropriated funding from the Ukrainian government to finance these efforts. To avoid further delays, DSWA modified the contract so that the American joint venture partner could complete the necessary renovations and begin production.

- **Status of project**: Production began in March 1997.

DEF Conversion Projects

As of July 1996, DEF had approved four investments in Russia for up to $8.8 million. In one case, the investment was in the form of a loan and, in three cases, in the form of an equity position. These projects are between U.S. firms and Russian defense-related entities—Kirovsky-Zavod, Nauka, Khlopin Radium Institute, and Mashinostroyenia.

Kirovsky-Zavod

- **Investment amount and date:** $3 million in loans approved in April 1995.
- **Former defense capability:** Manufacturer of propulsion systems for nuclear submarines.
- **Former employment level:** 50,000 in 1991.
- **Purpose of joint venture:** To produce excavator frames for export to a plant in Belgium.
- **Defense building conversion:** Converted 60,300 square feet of floor space in a building that was previously used to manufacture pumping turbines and was not related to WMD.
- **Joint venture production:** Producer of excavator frames.
- **Joint venture employment:** Initially employed about 80 workers, but the number has risen to 100 and could peak at 200 by the end of 1997. It is likely these workers were in the defense industry, but it is uncertain whether they worked on WMD-related activities.
- **Obstacles:** None.
- **Status of project:** The plant is currently working at capacity, and the project is expected to break even in 1997. The project is expected to pay off its DEF loan. The U.S. partner expressed interest in expanding the operation, but the Russian partner was not willing to do so. As a result, the U.S. partner purchased the Russian partner's share of the joint venture.

Nauka

- **Investment amount and date:** $2.8 million equity investment approved in September 1995. The project has not yet used DEF funding.
- **Former defense capability:** Designer of environmental control systems for MIG aircraft.
- **Former employment level:** 5,000 employees.
- **Purpose of joint venture:** To produce and market environmental control systems for private commercial aircraft manufacturers.
- **Defense building conversion:** Converted 53,800 square feet of factory space. We were not able to confirm if this space had been used for WMD-related activities.
- **Joint venture production:** Has a limited 3-year contract to make heat exchangers (environmental control system components) for a British firm.

- **Joint venture employment:** About 40 employees that were younger hires and did not work on previous WMD projects.
- **Obstacles**: There is no market in Russia for domestic aircraft engines and no aircraft are being sold; thus, no market exists for aircraft environmental control systems.
- **Status of project**: The American partner has not yet drawn on the DEF investment.

Khlopin Radium Institute

- **Investment amount and date:** $1 million equity investment approved in September 1995.
- **Former defense capability:** Research and development associated with nuclear weapons, and plutonium and isotope production, among others.
- **Former employment level:** 1,600 in 1995.
- **Purpose of joint venture:** To convert Russian WMD expertise into a commercial venture that builds and operates log sterilization and debarking centers in Russia, which will export treated logs to the United States.
- **Defense building conversion:** Unknown.
- **Joint venture production:** To irradiate timber of bugs and fungi so they will be suitable for export and processing in U.S. sawmills.
- **Joint venture employment:** Approximately 10 scientists are working on this project, and more Khlopin employees will be used as this project develops.
- **Obstacles:** The project needs cash to get a log yard in Russia operational, and it needs to obtain a Western timber products firm as a partner.
- **Status of project:** DEF has invested $500,000 of the $1 million approved. Although the technology is not at issue, the project has not yet demonstrated it can deliver logs. The DEF Chief Financial Officer has temporarily become Chief Executive Officer of the joint venture.

Mashinostroyenia

- **Investment amount and date**: $2 million equity investment approved in February 1996.
- **Former defense capability**: Manufacturer of intercontinental ballistic missiles, nuclear cruise missiles, and reconnaissance satellites.
- **Former employment level:** 9,000 in 1992.
- **Purpose of joint venture:** To convert skilled Russian military programmers who were working in the areas of guidance and control systems for cruise missiles and rocket launchers to commercial programmers for software development.

- **Defense building conversion:** The project will occupy space outside of Mashinostroyenia's security enclosure.
- **Joint venture production:** Expected to develop commercial software programs for mainframe computers.
- **Joint venture employment:** 300 former WMD-related workers within 3 to 5 years (projected).
- **Obstacles:** The original Western partner withdrew from the investment.
- **Status of project:** DEF is seeking another Western partner.

Comments From the Department of Defense

ASSISTANT TO THE SECRETARY OF DEFENSE
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WASHINGTON, DC 20301-3050

ATOMIC ENERGY

MAR 19 1997

Mr. Harold J. Johnson
Associate Director
Internal Relations and
Trade Issues
National Security and International
Affairs Division
U.S. General Accounting Office
Washington D.C. 20548

Dear Mr. Johnson:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "COOPERATIVE THREAT REDUCTION: Status of Defense Conversion Efforts in the Former Soviet Union," dated March 7, 1997 (GAO Code 711217/OSD Case 1308). The Department concurs with the report and its recommendations.

Technical corrections to the report were separately provided. The detailed comments to the report recommendations are provided in the enclosure.

The Department appreciates the opportunity to comment on the draft report.

Sincerely,

Roland Lajoie
Deputy to the Assistant
Secretary of Defense
Cooperative Threat Reduction

Enclosure
a/s

GAO DRAFT REPORT - DATED MARCH 7, 1997

(GAO CODE 711217) - OSD CASE 1308

"COOPERATIVE THREAT REDUCTION: STATUS OF DEFENSE CONVERSION EFFORTS IN THE FORMER SOVIET UNION"

DOD COMMENTS TO THE GAO RECOMMENDATIONS

Now on p. 15.

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense direct performance benchmarks be established as required by the Defense Special Weapons Agency (DSWA) grant agreement with the Defense Enterprise Fund (DEF). (p. 22, GAO Draft Report)

DOD RESPONSE: DSWA has drafted performance benchmarks and forwarded them to DEF for comment and coordination. Performance benchmarks will be established by 31 March 1997.

Now on p. 15.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense direct a long range plan for attracting private capital be prepared by the DEF and approved by DSWA. (p. 22, GAO Draft report)

DOD RESPONSE: DSWA has discussed the framework of the long range plan. DEF will submit the long range plan to DSWA for approval by 31 March 1997.

Now on p. 15.

RECOMMENDATION 3: The GAO recommended that the Secretary of Defense direct that semiannual progress reviews and the required office and field visits be performed. (p. 22, GAO Draft Report)

DOD RESPONSE: DSWA will continue to perform semiannual progress reviews and the required office and field visits. DSWA will ensure that adequate documentation of such visits is filed in the project files. DSWA will continue the shift to a more formal management style and all progress reviews and visits will reflect this formality.

Comments From the Defense Enterprise Fund

Defense Enterprise Fund

March 17, 1997

Mr. Harold J. Johnson
Associate Director
International Relations and Trade Issues
United States General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Johnson:

We are pleased to provide this response to the report issued by the General Accounting Office ("GAO") entitled, "Cooperative Threat Reduction -- Status of Defense Conversion Efforts in the Former Soviet Union" (the "Report").

Overview

The Defense Enterprise Fund (the "DEF" or the "Fund") was founded in 1994 on the basis of three central principles:

- That U.S. national security interests could be advanced through cooperative efforts to reduce the former Soviet Union's (FSU's) ability and incentive to produce weapons of mass destruction;
- That these efforts, in addition to assisting with defense conversion, could also serve to strengthen the FSU's private sector, reduce state control of industry, and build market economies in the region; and
- That U.S. private capital and management expertise could be harnessed to help achieve these foreign policy objectives.

The Congress determined that a traditional government program was not well suited to identify, evaluate and implement investments in private sector companies, and therefore

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adopted the Enterprise Fund model originally established pursuant to the Support for East European Democracy Act of 1989. Accordingly, the DEF was structured as a private venture capital firm, operating under the direction of a Board of Directors consisting of leaders in U.S. business and industry.

The DEF's Board of Directors currently includes:

Randolph N. Reynolds, Vice Chairman, Reynolds Metals Co.

J.A. Brothers, Executive Vice President, Ashland Oil Corporation

Sarah C. Carey, Partner, Steptoe & Johnson; Chair, The Eurasia Foundation

Carlos Del Salto, Vice President, Baxter World Trade

John D. Nowell, President and Chief Executive Officer, Defense Enterprise Fund

Ben J. Talbott, Esq., Partner, Westfall, Talbott & Woods

The Board of Directors believes that the DEF has demonstrated success in achieving its objectives, and that it will soon exceed initial expectations by harvesting profitable investments, attracting private capital, and facilitating the return of some or all of its initial grant to the U.S. Government.

Accomplishing Defense Conversion

Since its inception in June of 1994, the DEF has established a solid track record of investments which accomplish defense conversion and assist in the transition of FSU countries to market economies. As of March 1997, the DEF has committed approximately $30 million to ten investments, and expects to have its USG funds fully invested by the end of calendar 1997.

Every project undertaken by the DEF has as its principal objective the conversion of former Soviet defense-related technology, personnel or facilities to profitable civilian commercial ventures. For example, as a direct result of DEF investments, a former manufacturer of nuclear submarine components is now building excavator equipment;

scientists and engineers who were involved in nuclear weapons testing now produce printed circuit boards; and satellite tracking technology is now employed in private telecommunications applications. *For a complete review of the DEF's investments, please see the attached Portfolio Summary.*

Strengthening the Private Sector

In most cases, DEF investments directly involve individuals or entities that were owned, employed by, or otherwise financially dependent upon the military-industrial complex of the former Soviet government. The DEF makes investments which encourage and allow these individuals and enterprises to make the transition from Soviet defense suppliers to private commercial activities. The DEF thus facilitates development of market-oriented private companies and thereby reduces state domination of industrial sectors.

The DEF's investments also strengthen the private sector in Russia and the NIS by promoting Western business expertise and management practices. The DEF invests principally in joint ventures involving strategic Western partners, who offer technical and managerial expertise to the DEF's investee companies. For example, the DEF has invested in a telecommunications venture alongside AT&T/Lucent Technologies, and in a manufacturer of earthmoving equipment in partnership with Caterpillar. DEF's investments thus help to provide a new generation of former Soviet managers with training in free market economic principles. *For a complete list of DEF's strategic Western partners, please see the attached Portfolio Summary.*

Achieving Self-Sufficiency

The DEF has developed a long-range plan to achieve self-sufficiency and facilitate the return of all or a portion of its seed capital to the U.S. Government. As noted in the Report, the DEF was initially promised $118 million in USG funding. However, the U.S. Government has now reduced its original commitment, and it appears that the DEF will receive a total of approximately $70 million. Nevertheless, the DEF hopes to raise at least $50 million in private capital to sustain its efforts.

The DEF's plan to raise private capital and achieve self-sufficiency follows the model established by the Polish-American Enterprise Fund ("PAEF"), which the U.S. Government

has encouraged all Enterprise Funds to follow. In general, the model includes the following steps:

- Begin with seed capital from the U.S. Government.
- Build a lean, experienced team of investment professionals located principally in the host country(ies) and a solid track record of investments.
- Attract additional capital from private sources to supplement the government seed capital.
- Liquidate the initial investments made with government funds.
- Let the U.S. Government decide how to use the reflows.

The Report correctly notes that only the PAEF and the Hungarian-American Enterprise Fund ("HAEF") have succeeded in attracting private capital. However, this is entirely logical, given that PAEF and HAEF were the first Enterprise Funds to be established (both in 1989-90). As noted above, an Enterprise Fund must develop a portfolio of sound investments before managers of private capital will entrust money to the Enterprise Fund. This process requires hiring a qualified investment staff, establishing offices in the host country, and identifying, evaluating and consummating any number of highly complicated transactions. Most of the other Enterprise Funds have been established in recent years, and simply have not matured to the point where attracting private capital is a realistic possibility.

Nevertheless, the return of seed capital by an Enterprise Fund is not a theory. The PAEF has already begun the process of liquidating its large equity investments, and has held discussions with the State Department and the U.S. Agency for International Development ("USAID") concerning future uses for these reflows. The DEF hopes to one day replicate the accomplishments of the PAEF by concurrently achieving its foreign policy mandate and providing the U.S. Government with part or all of its money back.

Providing Strong Management and Oversight

As noted above, the U.S. Congress intended that DEF be structured as a private corporation, and its activities carried out under the direction of its Board of Directors. This arrangement was specifically designed to reduce oversight and decisionmaking responsibility

from the U.S. Government, and transfer it to a group of prominent private citizens with experience in business and investment. DEF's Board of Directors meets regularly to review the Fund's financial statements and expenses, discuss and approve investments, and engage in general oversight. In addition, like a private corporation, the DEF publishes an Annual Report containing a detailed summary of its activities as well as financial statements audited by a major accounting firm. Thus, the Congress did not intend for DEF's oversight to be carried out as would oversight of a typical AID or DOD grantee. The Congress deliberately gave much of this responsibility to the Board.

However, in addition to rigorous oversight by the Board, DEF management is also in frequent communication with the Department of Defense ("DOD") and the Defense Special Weapons Agency ("DSWA"). DEF provides DSWA with status reports concerning its investments, and its staff spends a considerable amount of time and effort responding to informational requests from DSWA and DOD. Moreover, the DEF Board and management meet regularly with the Secretary of Defense, as well as with senior staff of DOD, the State Department, and the Congress.

Controlling Expenses

We note that the Report concludes that the DEF's operating expenses are consistent with those of other U.S. Government-sponsored Enterprise Funds operating in Central and Eastern Europe and the former Soviet Union. In this regard, however, we suggest that the measure employed by the GAO actually inflates DEF's expenses by expressing them as a percentage of grant commitment. This measure fails to account for the work that an Enterprise Fund has accomplished while incurring the expenses, and focuses only upon total future disbursements to a Fund without regard to whether any investments have been made.

A more accurate measure would express expenses as a percentage of committed capital. The function of an Enterprise Fund is to make investments, and its expenses represent the costs incurred in consummating these transactions. For this reason, a fund that incurs $5 million in expenses while committing $50 million to investments should be seen as having lower expenses than a fund that incurs the same costs while investing only $25 million. Under the GAO's measure, however, a fully-invested Enterprise Fund with $5 million in expenses would rate the same as a fund (of the same size) which had incurred $5 million while making no investments. We believe that the DEF's operating expenses would compare even more favorably to other Enterprise Funds if the GAO had measured costs as a percentage of committed capital.

Moreover, the DEF's expenses appear even more reasonable when it is considered that the DEF operates in the largest physical area of any Enterprise Fund, and services the largest population. These factors require substantial additional expenditures in order to identify and implement investments. Finally, the DEF expects that these expenses will be reduced substantially once private capital is raised, because costs will then be apportioned between DEF and the private fund, as has been the case with the Polish model.

Thank you for the opportunity to set forth our views concerning the Report. The DEF looks forward to continued success achieving defense conversion in the FSU, while assisting these countries in their transition to democracy and market economies.

Sincerely,

John D. Nowell /JB

John D. Nowell
President

Attachment

PORTFOLIO SUMMARY

Company	Defense Conversion	Western Partner(s)	DEF Commitment (millions)	DEF Equity
NURSAT	Satellite tracking > Telecommunications	AT&T/Lucent Technologies	$3.0	8.5%
ROSNET Labs	Strategic command and control > Telecommunications	NYROS Telecom Services	$5.0	29.0%
KK Interconnect	Nuclear weapons testing > Printed circuit board manufacturing	KRAS	$2.5	31.0%
RAMEC	Military electronics > Personal computer assembly and marketing	Kent International	$3.0	40.0%
OrbitSoft	Weapons programming > Software engineering services	OrbitSoft 2000	$2.0	43.2%
RAIES International	Nuclear R&D > Timber sterilization and export	Russia Partners	$1.0	12.0%
Nevamash	Nuclear submarines > Earthmoving excavator bases	Caterpillar	$3.0 (up to)	N/A (loan)
Hamilton-Standard/Nauka	Military aircraft systems > Civilian aircraft systems	Hamilton-Standard	$2.8	25.0%
MPS-Telecom	Military communications > Public telecommunications	AT&T and Communications Development Corp.	$5.0	20.0%
RTN	Military communications > Public telecommunications	NYROS Telecom Services	$5.0	20.0%

Major Contributors to This Report

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Related GAO Products

Weapons of Mass Destruction: DOD Reporting on Cooperative Threat Reduction Assistance Has Improved (GAO/NSIAD-97-84, Feb. 27, 1997).

Weapons of Mass Destruction: Status of the Cooperative Threat Reduction Program (GAO/NSIAD-96-222, Sept. 27, 1996).

Nuclear Nonproliferation: Status of U.S. Efforts to Improve Nuclear Material Controls in Newly Independent States (GAO/NSIAD/RCED-96-89, Mar. 8, 1996).

Weapons of Mass Destruction: DOD Reporting on Cooperative Threat Reduction Assistance Can Be Improved (GAO/NSIAD-95-191, Sept. 29, 1995).

Weapons of Mass Destruction: Reducing the Threat From the Former Soviet Union: An Update (GAO/NSIAD-95-165, June 9, 1995).

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Soviet Nuclear Weapons: U.S. Efforts to Help Former Soviet Republics Secure and Destroy Weapons (GAO/T-NSIAD-93-5, Mar. 9, 1993).

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