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The Pivotal Role of the State in Russian Defense Conversion: A Management Perspective

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Project Overview

In the Winter of 1995, our research team went to Russia and Belarus to investigate the types of strategies defense enterprises were implementing in response to changes in the new political and economic environment. Our research was based on the commonly held assumption that the relevant politico-economic context for the emergence of strategies for "defense conversion" was Russia's transition to a free-market economy (Aslund, 1995; Kornai, 1992).

However, the results of this first field study indicated that what prevailed in most organizations was not the development of a newly defined market-oriented vision and long-term strategic mission, but instead the emergence of short-term opportunistic strategies for survival (Coakley & Randall, 1996). Our basic conclusion came in the form of recommendations—the patterns of leadership and strategic thinking we observed could not be successful over the long term. Managers of defense enterprises in the former Soviet Union (FSU), we believed, needed to adopt an entirely different set of values, skills, and goals in order to be successful under free-market conditions.

Upon our return from a second field study conducted in Russia in the Fall and Winter of 1995–96, it became apparent to us that when trying to understand the types of leadership behavior we found to be characteristic of managers in Russian defense enterprises, we needed to broaden our focus from simply identifying skills, values, and goals to understanding the context within which these managers were operating.

When we shifted our perspective, we found that the central and regional governments were still playing a pivotal role in "defense conversion." We discovered, in fact, that the relevant context for understanding the role of enterprise management in defense conversion in the FSU was the newly emerging structure and character of direct government involvement, rather than the development or evolution of any reliable free-market mechanisms for politico-economic reform in the military-industrial complex.

This focus on the continuing importance of direct government involvement in the operation of the domestic economy directly conflicts with much current thinking about economic change in Russia. Since late 1991, most scholars in the West have been convinced that the swift and dramatic ideological, political, and economic changes of Boris Yeltsin's "New Russia" demonstrate a clear and inevitable, although difficult, transition to a market economy (Kotz, 1992; Kornai, 1992; Aslund, 1995).

Many prominent public figures in Moscow have consistently reinforced this idea and prominent Western economists personally involved in macroeconomic reform in Russia have not doubted the reality of this transition in the least (Yeltsin, 1994; Kazantsev, 1995; Aslund, 1995). On the other hand, although much of our formal and informal discussions with Russian citizens about changes were, indeed, framed by the commonly offered notion of the "difficulties of transition," not once did we read or hear any clear answer to a specific question we asked many people on many different occasions—"transition to what? And to where?"

During the course of our own fieldwork in the FSU over the past year we have seen and heard much that has led us, first, to question seriously and then, most recently, to reject any assumption of a clear transition to a market economy in Russia. By looking at change through the weighty and critically important lens of the military-industrial complex, in fact, we argue that we are witnessing a very different type of transition—a transition

from a centralized, command socialist economy to a more diffuse and decentralized but still decidedly socialist economy in which the key agent of control and change remains agencies of the State, rather than any "invisible hand" of a newly emerging market economy.

Given the pivotal role the military-industrial complex has played in the creation of the technocratic, socialist socioeconomic fabric of Russia throughout the second half of the 20th century, we believe that a more compelling answer to the question "transition to what?" still awaits a thorough and rigorous analysis of the ongoing transformation of the military-industrial complex in Russia today.

Although we are not prepared to offer such a far-reaching analysis in this report, we will briefly sketch the main outlines of the ongoing transformation of the military-industrial complex since 1991 as we have understood this transformation from Russian primary sources, as well as from in-depth interviews conducted with *oboronchiki* ("defense employees") in Belarus and Russia during the past two years.

First, we offer a brief analysis of the evolution of defense conversion plans from 1991 to 1994. In that analysis, we will argue that the initial conversion plan of 1991 based on "privatization" (*privatizatsii*) was a complete failure and led to the gradual emergence of a new national plan by 1994. This plan represented a critical turning away from the earlier avowed interest in privatization and free enterprise.

Second, we outline the specifics of this de facto post-1994 defense conversion plan, calling attention, specifically, to the differential treatment of defense enterprises in Russia today. We want to highlight the ways in which implementation of a defense conversion plan is constrained by the absence of the type of politico-economic conditions that would foster the emergence of a truly "free-market" system.

Finally, in our conclusions we argue that a more potent analysis of the nature of "defense conversion" would be grounded in the perceptions of what we believe most Russian citizens believe today—the much talked about *perekhod* ("transition") represents a painful return to order, stability and predictability, rather than a radical politico-economic transformation resulting in the establishment of a free-market based society.

Defense Conversion and the National Security Concept—Historical Background

In 1988, according to the government's own Goskomstat figures, 20 percent of all industrial employment and 75 percent of all research and development spending in the Soviet Union was for defense. Over 50 percent of Russia's own industrial output was categorized as defense production (cf. Lipsits, 1995).

In the wake of the failed coup of 1991 and Yeltsin's aggressive political response, all of the individual republics declared political and economic independence from the Soviet Union. As a result, the integrated Union-wide network of supply, production, and distribution was severely disrupted, creating within Russia itself major supply and distribution blockages for manufacturers (Tolkachev, 1993; Barry, 1994; Buck, Filatotchev, & Wright, 1995).

From 1991 to 1994, under the impetus of the "laissez-faire" privatization policies instituted by Yeltsin and Gaidar, official Russian statistics show that government orders for all defense-related production fell by 20% per year, so that by the end of 1994 total defense-related production was estimated to be a mere 20 percent of the 1988 Soviet Union levels (Amosenok & Bazhanov, 1995; Artyukhov, 1995).

By the end of 1993, however, Russian economists, industrialists and policy analysts were arguing in such widely read journals as *Eko* that the worst was over—that the long-term

decline in state orders was stimulating "forced conversion" within the defense industry and, thus, generating supposed real growth in "private enterprise." Furthermore, it was generally thought that Moscow's approved program for the sale of excess defense inventory on the world arms market would generate huge revenues for reinvestment into commercialization and privatization (Khripunov, 1994).

By the beginning of 1995, however, it was much harder to find optimistic public sources. By and large, economists and analysts were now officially acknowledging the fact that "defense conversion was spinning its wheels," (compare, for example, the skeptical caution of Artyukhov in 1994 with the convinced pessimism of Artyukhov in 1995). Overall, the official figures did not look promising—military production had fallen, predictably, by 36.7 percent over 1993 levels, but non-defense-related production had fallen even more during the same period—a drop of 41.6 percent compared to 1993 levels (Artyukhov, 1995).

By the beginning of 1995, virtually everyone understood that the Sachs/Yeltsin/Gaidar privatization assumptions that the mechanisms of free world markets would naturally result in "forced conversion" of industrial enterprises, new sources of foreign investment, and a new wave of entrepreneurial commercialization and new product development, simply did not bear fruit . The military-industrial complex as a whole was in worse shape by the end of 1994 than it was in the early optimistic period of 1991; furthermore, industrial production of every form and function was falling off (Amosenok & Bazhanov, 1995).

As the economic crisis deepened, from late 1993 through the period of our fieldwork, both the central government and regional governments experienced sharp political challenges from, first, the ultra-nationalist right and, second, the neo-communist left, both of which argued forcefully that the Yeltsin privatization policies were undermining the national stability and security of Russia (cf. McFaul, 1995).

Following the disastrous 1993 national elections and the emergence of a swarm of new political contenders, Prime Minister Chernomyrdin went so far as to declare that "the [1993] election marked 'the end to market romanticism'" (McFaul, 1995: 87). In very quick order, G. P. Voronin, deputy chairman of the Russian Federation Committee on Defense Industries, penned the official position that "the Russian State is developing a new approach to the tasks of...maintaining security and developing ways for its complex resolution" (Voronin, 1994: 77).

Key to this "new approach" was a defense conversion policy that would be based on the development of a "National Security Concept." According to Voronin, the new "National Security Concept" being developed linked "into a single whole, the political, economic, military, social, demographic, and ecological aspects of security" (Voronin, 1994: 77). In other words, Voronin was arguing for far more than a "national security" basis for the formulation of an appropriate defense conversion plan. Voronin was implying, in essence, that every imaginable facet of domestic security and stability in Russia was linked inevitably to the fate of the military-industrial complex.

The Centrality of the Military-Industrial Complex

Marx and Lenin both regarded scientific-technological progress as crucially important to the success of socialism (Randall, Robinson & Tolstaya, 1994). In practice this had always meant that the development of technology was harnessed to Russia's quest for a superior military program to secure the country's abilities to defend itself and to demonstrate the State's ideological superiority to the rest of the world.

Even though Marx and Lenin had both emphasized economic development as the determinant of all progressive change, from the time of Stalin's radical crash programs for industrialization in the 1930s to the present day, the development and implementation of new technologies has been viewed as the determinant of all economic development and, thus, all social, political, and cultural transformation.

As a consequence of the identification of technology with military strength and security, from the time of Stalin's early industrialization policies a number of remote and isolated areas became the locations for the development of "closed defense cities." These were cities built up around "vertically integrated" key military-industrial facilities. Virtually everyone in these cities worked for the military-industrial complex and, for security reasons, movement in and out of such cities was very closely controlled by the central authorities (cf. Gaddy, 1996).

As a consequence of the identification of technology as a prime determinant of progress and change, not only did the Soviet Union have the greatest number of engineers in the world, but the way to attain top management positions was to be an engineer (and, of course, a member in the Communist Party). In 1980, in fact, 80 percent of the Politburo members were engineers (Balzer, 1990).

As the most progressive social class in Soviet society, "defense workers" (*oboronchiki*) lived a charmed life compared to workers in other sectors of the economy of the former Soviet Union. *Oboronchiki* working at mammoth industrial plants such as "Krasnoe Sormovo" in Nizhny Novgorod not only commanded salaries higher than the national average, but also had much better benefits in the form of housing, training and education, medical care, schools for children, vacation/relaxation, and many other forms of social support. At the pinnacle of the Soviet Union's power and influence, the *oboronchiki* not only lived better than most people, they also occupied positions of prestige and political influence both within the Communist Party itself and within society at large.

At the top and upper executive, managerial and supervisory levels within individual defense enterprises, *oboronchiki* were highly skilled, well-educated technocrats who exercised a considerable amount of power and influence because of their roles as interpreters and administrators of State-defined production plans.

The Relevance of the National Security Concept in Nizhny Novgorod

Until 1991, Nizhny Novgorod was a very important closed defense city and all of its major employers, major research facilities and major institutions of higher education were key components of the military-industrial complex of the Soviet Union.

Since then, however, the situation has changed dramatically for *oboronchiki* in Nizhny Novgorod because of massive cut-backs in military orders, structural changes in the traditional command-economy networks of supply, production and distribution, and because of a significant amount of downsizing and reengineering that has followed from the need for most large and medium-sized enterprises to create new forms of commercialized production.

At the general-societal level of analysis, this industrial restructuring has had the dramatic and very visible effects of wage losses, benefit losses, job de-skilling, and underemployment impacting a sector of society, *oboronchiki*, arguably the least prepared psychologically, socially, or politically to cope with such losses. At the same time, the political prestige and social respect formerly granted to *oboronchiki* has been undermined by the emergence of new "Green" political parties and other new democratic activists who are all too quick to scapegoat the *oboronchiki* for a

wide variety of environmental, social, and economic ills.

At the level of the individual enterprise, many top-level executives and upper-level managers and supervisors have found their roles to be dramatically transformed from previous administrators of State plans to responsible "stewards" of enterprises in which they themselves now hold part ownership—a dual-edged sword, indeed.

At the close of 1993, an unpublished sociological survey of defense workers in the Nizhny Novgorod region conducted by the Applied Sociology Department at Nizhny Novgorod University concluded that the "free-fall" of the defense industry was creating a new class of unemployed and under-employed who were in virtual despair (Iurdin, 1993). According to Professor Iurdin and the other authors of the survey, this growing class of disenfranchised defense workers presented a real threat to "social stability", and not just because of a general attitude of "despair." What is more important, such workers had long held privileged positions, were more highly educated and skilled than the general working population and, therefore, were viewed by the authors of the survey as predisposed to taking either legitimate or illegitimate political action against the management of defense enterprises and, perhaps, the government itself.

Since the issuance of that 1993 report there have, indeed, been several officially acknowledged work stoppages and slow-downs within the military-industrial complex; however, in spite of the reemergence of political activism among Russian Communists, Socialists and Neo-Nationalists, all very supportive of the defense-industrial complex, the thoroughly ominous political consequences hinted at in the Nizhny Novgorod study have so far not come to pass. Nevertheless, there is no question that the social and cultural consequences of "defense conversion" should be taken very seriously by all who seek to promote social order and stability.

Defense Conversion Plan

Since the end of 1993 there has been a renewed interest within Russia, at both national and regional levels, in promoting a "defense conversion" policy that balances the needs of national security, defense, and social stability against the equally important needs of integrating industrial research and production into international "free" markets.

All of this is at the very heart of the new "National Security Concept" outlined by the Ministry of Finance in 1994, which laid the foundation for a new policy for defense conversion. In this new policy three tiers of military-industrial enterprise were defined (Voronin, 1994). Each tier would be differentiated by the degree of institutional support and character of direct involvement by central and/or regional governments. The general criteria which distinguish each tier are the degree of perceived importance of an enterprise's core technologies, and the extent and nature of their promotion of political, economic, and social stability. In essence, each tier represents a differently configured institutional environment (cf. Barry, 1994; Kazantsev, 1995; Voronin, 1994). As such, the managers' strategic response concerning defense conversion was based on the tier designated for each enterprise. Since each tier represents a differently configured institutional environment, their defense conversion strategies and efforts also differed.

Tier One Enterprises in Defense Conversion

Tier one enterprises would comprise about 300 individual enterprises, or an estimated 10 percent of the military-industrial base (Voronin, 1994). Tier one enterprises would be core enterprises identified by the Ministry of Defense as possessing key technologies for the

production of armaments and military production. Specifically, "key" means that the core technologies and knowledge base associated with them would enable Russia to protect itself militarily, as well as possibly be competitive in the global marketplace.

A tier one enterprise would remain a basically State-owned firm, the workforce would be classified as government employees and, structurally, tier one enterprises would be administered and funded in ways very similar to the administrative structures of the old command economy. In other words, these companies could go through "privatization" but in the end still have 70 percent government ownership (they are legally closed joint-stock companies). Integrated with the productive activities of this tier one group would be a group of State-owned and administered National Science Centers and National Dual-Use Technology Centers that would provide critical R&D for the tier one group.

Although during the period of our fieldwork in Nizhny Novgorod no *oboronchiki* within any tier one enterprise would grant us interviews, we were able to interview managers of such enterprises in Minsk and Samara. In this report, we will discuss two companies in our sample, "Samara B" (name undisclosed) and "Planar," which adhere to the basic definition of a tier one enterprise—100 percent ownership is still held by the central government.

As with the vast majority of defense companies, tier one companies face declines in military orders, but according to management the decline is not as drastic as for companies that this study designates as tier two or three. Given this situation, the managers of tier one companies are more discriminating in regard to the foreigners with whom they will discuss potential business deals (typically for potential co-production or joint-venture activity). If a foreigner approaches them, the managers that we interviewed said that they request definite, concrete proposals. But many American business people tend to want to gather information first and then develop the proposed deal much later in the process. FSU managers consistently complained that they were disappointed with their meetings with Americans because of the lack of proposals. Also, tier one managers were reluctant to incorporate their companies' technology as part of any co-production or joint-venture deal. Their stated goal was to receive Western technology or up-to-date equipment, and, in exchange, they would offer their excess production capacity or skilled workforce as part of the agreement.

Tier One Companies

Samara B

Samara B, a 100 percent government-owned manufacturer of missiles and rockets, is not facing the crisis-like situation experienced by many other defense companies. Management admitted that the government considers their company to be crucial to the advancement of scientific knowledge in Russia, and that no effort, at the present time, exists to privatize its operations. Samara B is receiving less government funding than in the past, but the reduction is not to the dramatic levels that have prompted other Russian defense companies to seek any alternative to stay financially viable. Nonetheless, Samara B's managers have put some effort into its conversion and focused on finding direct commercial applications for its technology. For example, the company provides low-cost commercial space launching and puts other nations' satellites into space. Management has identified NASA as Samara B's primary competitor. During the interview, they acknowledged that they are not able to earn enough funds from this activity to make up for the loss in revenue, so they are seeking other commercial applications—both related and unrelated to their core technological competency.

Samara B's managers believe that their technology of rocketry is marketable, yet they are reluctant to commercially exploit one of their most competitive areas of technological competence: their research and development of heat-sensitive materials. Due to their designation as a tier one enterprise, they are caught between the State's concern for national security and their commercial survival in an unpredictable market. These concerns have prompted Samara B's management to seek conversion applications outside of their core competencies. Therefore, they are seeking products for the commercial marketplace that use their "proprietary" knowledge but do not require much in the way of additional resources. For instance, Samara B is interested in entering the medical industry, and would like to manufacture blood-testing systems or distribute for a Western medical equipment supplier.

Planar

Planar, a 100 percent State-owned (split between Russia and Belarus), large integrated circuits manufacturer, has concentrated its efforts on developing core technological competencies. The managers at Planar have focused specifically on technologies that would surpass those available in the United States and Germany. They realized the importance of recognizing the company's strengths and weaknesses in relation to its competitors and recognized the needs of their potential customers. Unfortunately, they were technologically oriented, and focused on maintaining their government's national security concerns, resulting in a limited strategy for conversion. One of their strategies was to use their limited resources to develop several small businesses within the domain of the larger enterprise. Specifically, managers would take their strategic plans and, instead of forming joint ventures with foreign companies, would form joint ventures with one another, thus limiting the dissemination of proprietary information. In this way they believed that they could protect their core technology from being disseminated in the West. Additionally, they were concerned about how to enter the Western marketplace and realized the need to create joint ventures with Western partners. In these situations the managers were careful not to license their technology, or give away technology that they deemed to be superior to that available in the West. Nevertheless, they were anxious to gain technology from the West. In their desire to benefit from Western technology, they were selective of their potential Western partners. Managers repeatedly mentioned that they wanted partners who were major global players in the computer industry. Planar, through this strategy, was able to convert part of its operations without losing critical technology to foreigners.

In summary, in tier one enterprises strategic planning is based on the assumption that the primary objective of all development is to preserve existing critical technological competencies at all costs. Because they are subsidized by the State, tier one enterprises do not face the prospect of having their confidence in their core technologies undermined by the vagaries of market conditions.

Tier Two Enterprises in Defense Conversion

Tier two enterprises would comprise approximately 25 percent of the former industrial base (Voronin, 1994). In contrast to tier one enterprises, tier two enterprises would implement modified forms of privatization, in which ownership would be shared between the workforce and the State. Partly funded and supported by the State, a tier two enterprise would have as its essential function the development of highly diversified production portfolios of military, civilian, and dual-use products. The State would retain an initial controlling interest in these enterprises for a period of three to

five years, but outside investment, including foreign investment, would be aggressively sought for tier two enterprises.

In this report we will first discuss an example of a tier two company in Samara, "Ekran." This will be followed by a discussion of one of the key regional implementations of a tier two administrative framework—the newly established "Territorial Production Zones" in Nizhny Novgorod (Service, 1995), and two enterprises within this new regionally administered zone—"Salyut," and "Petrovskogo."

Ekran

Located in Samara, Russia, Ekran's core technological competence is radio electronics, but it is currently manufacturing black and white televisions. It has expanded its production as much as possible, given available equipment to manufacture and limited materials. Its biggest constraints are a lack of supplies and an obsolete product line with low quality products. In terms of supplies, inflation hit Ekran hard, as the cost of supplies increased faster than it was able to raise prices on its televisions. Also, the price of imported color televisions prevented it from raising the prices to match its cost structure and therefore it was caught in a vicious cycle in which it needed to sell the televisions but would lose money with each sale. It has no other conversion products to sell.

Ekran's managers would prefer to get out of selling televisions. They strategically decided that they wanted to provide home health-care products (e.g., diabetes detection kits) for the medical industry. They have been informed by the regional government that it is willing to purchase new equipment for regional hospitals and medical clinics. Based on these discussions with the government, the company wants to shift focus to the medical industry and away from the increasingly foreign-dominated, domestic consumer market.

Ekran is currently developing several prototypes of medical equipment and is seeking funding and hopes to find a Western joint-venture partner to contribute hard currency or up-to-date equipment. While developing its prototype and seeking funding, management is willing to produce anything, not exclusively televisions or medical equipment. The company has, since this study, declared bankruptcy, and its future is unknown.

Territorial Production Zones in Nizhny Novgorod

In 1995, under the direction of the regional governor, Boris Nemtsov, the first "Territorial Production Zone" (TPZ) within Russia was created. In direct contrast to the earlier, largely unsuccessful "Territorial Enterprise Zones," Boris Nemtsov outlined the "TPZ" as an explicit attempt to learn from the recent experiences of Mexico, China, and Vietnam in creating a protected zone for the purpose of attracting foreign investment and then promoting a regionally-based policy of "export-led" economic growth. On numerous public occasions, Governor Nemtsov took the opportunity to argue in favor of a regionally-defined and administered export-led growth strategy that did not depend on Moscow.

In the early stages of implementation during the period of our study, the first TPZs in the region were centered on three medium-to-large former defense enterprises from the critically important radio and electronics sector—Lazur, Petrovskogo, and Salyut—each of which would serve as the "base enterprise" for its own TPZ.

Although they were legally designated "open joint-stock companies" with stock issued to employees and other outside interested parties, when the TPZs were created, the ownership and administrative oversight of all three "base" enterprises was legally transferred into the hands of the regional government. Although each "base" enterprise would continue to be under the day-to-day management of an

internal "general director," a newly created Regional Governor's Administrative Council and Coordinating Committee appointed one "external director" for each of the TPZ base enterprises. The internal "general director" reported directly to the "external director," who, in turn, was a member of the Governor's appointed Coordinating Committee.

The official purposes of the TPZs were: to promote conversion to non-military production through diversification of product lines; to preserve the existing capital assets and critical technological resources of insolvent defense enterprises; to motivate the restructuring of large, monolithic defense factories; to attract outside investment and create new internal alliances to reorganize a decentralized and badly fragmented defense-industrial sector; and to stimulate the development of new small and medium-sized Russian enterprises. For the participating enterprises, the government offered long-term local and regional tax holidays, as well as five-year Federal tax deferments, tax-free import, warehousing and re-export of all raw materials and finished goods designated for export, and finally, the option to purchase part or all of base enterprise resources after a mandatory five-year lease period.

In return for these government incentives, the participating enterprises had to present the Governor's Coordinating Council with an operations plan that fulfilled the following criteria: agreement to a five-year lease with a to-be-negotiated "entrance fee," calculated as a pro-rata proportion of base enterprise fixed costs for a period of one year; a plan for attracting additional investment into the base enterprise; the technological compatibility with existing base infrastructure; and a commitment to preferential hiring of base enterprise employees.

Examples of Tier Two Enterprises within the Territorial Production Zone

Salyut

Salyut is a defense enterprise which previously produced microwave technologies as inputs to Sokol—a manufacturer of fighter aircraft—and the aircraft industry. After a brief abortive attempt to produce microwave ovens, radio transmitters and receivers for the Russian and Ukrainian markets, the company is now operating at a reported 20 percent capacity. The company's top executives claimed to be unable to compete with foreign imported consumer products, even though they had under-priced their products for the domestic market.

Salyut has presently lost over 90 percent of government orders and is now one of the first Russian companies to be declared legally bankrupt. Ownership and administration of Salyut has since reportedly transferred to the regional government.

At the time of this study, Salyut was apparently idling with no known plan for reorganization. Salyut's conversion efforts can be described as reactive, waiting for government and foreign support. For example, during one of our interviews with management, they asserted "our scientists and engineers are smart. They can produce anything, just give us the specifications, the equipment, and supplies, and we will produce it." Under the new TPZ Coordinating Committee, the company was reported to be negotiating with a number of small local businesses interested in making use of Salyut's resources for their own production.

Petrovskogo

Petrovskogo, a former radio electronics defense firm, has a long history of developing "dual-use" technologies, including producing radio receivers for non-military uses (hotels, offices, homes, etc.), as well as more specialized military uses. The company has traditionally targeted Russian and Ukrainian markets.

Petrovskogo attempted unsuccessfully to increase production for commercial markets, but attributes the failure of this endeavor to the lower perceived value of their products versus foreign competitors in their own markets. In response, the company has shifted development plans to the production of medical monitoring equipment.

Most recently, Petrovskogo is attempting to negotiate a deal with GAZ Autoworks, brokered by the regional government, to develop and manufacture stereo receivers and tape players for GAZ manufactured vehicles. Through the activities of the Governor's Coordinating Committee for the TPZ, Petrovskogo had previously signed agreements with a number of both domestic and foreign enterprises. Most notably, the company signed agreements with Philips to provide work space, warehousing, and employees for the last stages of assembly of stereos and computers, all legally designated as "tax-free" for re-export. We were told that the agreement with Philips was making use of only about 10 percent of existing production space. Furthermore, Philips had brought in its own assembly equipment and hired fewer than fifty employees from Petrovskogo's employee base.

Tier Two: the Problem of Underutilization

Although the regional government had announced that over forty small and medium-sized enterprises, primarily local with a high percentage of start-ups, had signed agreements with the TPZs to rent space and to recruit labor from the base enterprises, by the end of our study we knew of only two small Russian enterprises actually working in the TPZs. One was building a regionally-based bakery and had moved part of its operation from a district agricultural commune into the former employees' kitchen of Petrovskogo. Reportedly, only the kitchen facilities were being used and 10–15 of the base enterprise's employees were hired.

The second was a locally-based plastics injection-mold producer. This producer used local technologies but, with the assistance of European investors, was importing the raw plastics from Italy. At the time of our study, this external enterprise was just beginning test production at Petrovskogo with a skeleton crew of about ten employees.

In short, after more than a year of constant government work to attract both domestic and foreign investors into the TPZs, only Petrovskogo showed any evidence that TPZs might successfully preserve the infrastructure of the base enterprises, attract much needed external investment and serve as the production base for creating export-led growth in the regional economy. Members of the international business community in the region have not aggressively encouraged foreign investment, and there is a general consensus among foreign business interests that the prevailing politico-economic conditions do not favor stable long-term investment strategies.

Tier Three Enterprises in Defense Conversion

Tier three enterprises, comprising the statistical majority of the old military-industrial base (about 65 percent of former defense enterprises), will be released to the vagaries of the "free market." Although tier three enterprises will retain the essential right to bid on State defense orders, they are basically plants whose production capabilities the Ministry of Defense has categorized as unsuitable, surplus, or unaffordable given a greatly reduced State purchasing commitment. For the most part, tier three enterprises are being thrown to the free market, forced to find new buyers, forced to seek new sources of investment and financial support, and forced to convert almost entirely to commercial production. Tier

three enterprises, unlike the other two tiers, will have no protection at all from bankruptcy laws.

In this report we will discuss the structural difficulties facing tier three enterprises by looking at the case of one electronics enterprise, "Nitel," a case which is of great interest in our discussion because Nitel was widely touted as an example of a defense conversion "success story" in Nizhny Novgorod. In fact, we will argue that a proper understanding of the daunting, perhaps insurmountable, structural obstacles confronting tier three enterprises will both clarify the need for a defense conversion plan that subsidizes R&D and industrial production, and shed much light on Voronin's thinking about the need to link defense conversion to a holistic concept of "national security."

An Example of a Tier Three Enterprise

Nitel

Nitel, an open joint-stock company (Nizhny Novgorod TV), is a classic example of a tier three enterprise in which currently 10 percent of the products made are defense oriented. The company's civilian products are televisions and video cassette recorders. Since 1994, Nitel has been in a very bad financial situation: no money has been received to develop conversion projects, the company has spent more than it has received through exporting 40 percent of its goods, and a 70-billion ruble Department of Defense order which was brought to a halt by the Department of Defense nearly crippled the company. It has had to take out a commercial bank loan, available only on a short-term basis and at interest rates of 200–300 percent (i.e., 85 percent of funds needed to operate the commercialized plant are from short-term bank loans). Because the interest rate is too high, the company cannot pay salaries and other overhead expenses. Furthermore, as production has fallen 2.5 times compared to 1994 levels, it must reduce its workforce.

Contributing to Nitel's financial woes are two critical problems: supply terms and foreign competition. Originally, Nitel contracted with a supplier from Germany, but the supplier wanted to be paid up front. The company now has a supply relationship with Ukraine (the cost of supplies is the same as with Germany), but the Ukrainian company requires 50 percent in advance, and then 50 percent after the televisions are sold.

The company also had an agreement with Sharp to make VCRs, but Sharp wanted to provide all the materials and let Nitel assemble the VCRs instead of providing Nitel with specifications for making the VCRs. Furthermore, Sharp charged Nitel for transportation costs once the materials landed in Vladivostok—a tremendous distance west toward Nizhny Novgorod. Thus the attempt at a joint venture failed. To compete with such foreign-made products, Nitel created retail stores because it felt this was better price-wise than going through a dealer, making it more competitive against Sharp and Sony. Unfortunately, it has been difficult to change the quality of the television set because of the high cost of materials, and difficult to increase the price due to Japanese competition.

Finally, in order to successfully convert production Nitel has had to shift from making one product (radar antennae) to making several in an attempt to apply the technology of one military item to several common items. The problem is that machines that once made one specialized part are now required to make several different products. Furthermore, the psychology is different for the workers. They are accustomed to fixing the problem if they receive a poor quality part, but with the serial production line now required to make televisions, there is no time to stop and solve every problem. Thus, younger, newly-employed workers, whose salary is based on how many operations are completed on the line, are making two to three times the pay of the

highly skilled workers, because they are better able to work on a serial production line.

Despite all the problems Nitel has faced, the company tried hard to preserve the social structure it had in place prior to conversion and the folding of the command economy, including a pioneer camp, kindergarten, sports complex, housing for workers, tourist camp, canteen, and health clinic. Unfortunately, costs have been too high for the property to be maintained and since cash is needed to pay for water, gas, and roads within the factory, much of it has been sold off.

In response to these difficulties, many workers have become entrepreneurial, launching side businesses from the shop floor in order to survive. In other words, what we have seen evolve at Nitel may be a critical de facto trend in defense conversion—radical decentralization and the creation of associations and networks of 'spin-off' work groups with new definitions of a strategic mission (see, for example, Anikeev, 1997). In fact, this evolution makes perfect sense when viewed against the background of the traditional relationship between management and labor in Russia.

Russian Management's Perspective on Labor

The Russian managers we interviewed commented that employment of the workers was a very important goal. As one Russian manager remarked, "I have heard that the goal of the American manager is to get rid of as many workers as possible. Isn't it the job of a manager to seek ways to provide employment for the workers? How can people buy all of the goods produced in America if no one has jobs and therefore no one can afford to buy them?" Two examples best illustrate this prevalent attitude among the FSU managers from the case studies.

In the FSU, lay-offs are occurring but not quite in the same manner as in the United States. First, at least as evidenced in five of the six companies, even with 30–40 percent reduction of labor, these companies are still over-employing people. For instance, Ekran's military production was approximately 85 percent of total capacity. The company lost 90 percent of its military orders and only made up 10 percent of the lost revenue through television production. Yet, with a 76 percent loss of production and no prospects for future business in sight, it provisionally "laid off" 40 percent of its workers (i.e., employees did not work, but still received benefits, and expected to be "rehired" when work became available). No additional firings occurred. When asked why, the company pointed out that entire families were dependent on it for a salary and benefits, and the managers hoped to find projects for their workers.

A second example which illustrates the cultural differences in management's goals of employment stems from an interview with management from Minsk A. The managers of Minsk A asked several Western business people for a recommendation regarding the best strategic move for their enterprise. The Westerners recommended licensing the technology to a Western company as the best way for Minsk A to enter the world markets. The managers discussed it amongst themselves and concluded that if they licensed the technology they would not be able to employ as many people and they decided that they would rather have a co-production agreement with a Western company.

The Nizhny Novgorod and Samara government administrators explained the predicament. They said that "dynasties" of families have worked at particular plants for decades, some even before the Revolution of 1917. Managers have a social obligation to these families to provide employment and services that were part of the value system of the planned economic system. This economic system's purpose was to provide full employment and social services to the population. Government officials commented that if these defense companies laid off workers at the

numbers that occur in comparable companies in America, then the regions (oblasts) would be placed under much more pressure. In the USA workers and their families can move from one region to another to seek employment opportunities. In the FSU, workers do not have the same amount of mobility because of the lack of housing. Therefore, despite economic hardship, it is imperative for Russian managers to employ as many workers as possible.

Unfortunately, the enterprises are facing tremendous cash deficits and do not pay well. Also, in many instances these companies cannot pay their workers for several months. For example, at the time of our interviews the managers of Ekran admitted that they had not paid their employees for over two months (a common occurrence which has led to a number of nationwide strikes and slowdowns in Russia over the past two years). Basically the unwritten rule is that people remain officially employed with the large enterprise but these people find other jobs, usually a number of part-time jobs. It is not unusual to have a taxi driver who is a computer engineer still officially employed by a defense enterprise, but who, if he finds Westerners with hard currency who need a driver, will take several days off from the company. His supervisors and his fellow workers do not stop him because everybody works *nalevo* ("on the side") to "make ends meet."

Although there is no formal policy or conversion strategy that would create the institutional conditions for widespread decentralization and the creation of "spin-off" work groups, the very fact that this "open secret" is occurring throughout the defense industry is rooted in the particularities of the historical relationship between management and labor.

Discussion and Conclusion

From 1993 to the present, Russian economists, social scientists and journalists have repeatedly claimed that there has never been a national plan for defense conversion. The prevailing view is that "defense conversion" has been little more than the blind application to the high-tech defense industrial complex of President Yeltsin's policies for laissez-faire privatization of the Russian economy.

Describing the actual process of defense "conversion" as *stikhiiny* ("haphazard"; "uncontrolled") and *bessmyslinny* ("senseless"), both published sources in Russia and our own interviews repeatedly point to the following presumed consequences of the absence of coherent reform policies:

A) high levels of unemployment, underemployment, and pervasive de-skilling, all promoting social conflict and undermining a national fund of scientific and technological knowledge and expertise;

B) a bewildering array of unresolved political, legal, and economic obstacles to the required work of rebuilding key supply networks within the defense-industrial complex as a whole;

C) accelerating financial instability of "converting" enterprises leading to production slow-downs, stoppages, and desperate attempts to resist insolvency by shifting production from high-tech defense products to low-tech consumer durables of undemonstrated market value;

D) steady deterioration of management-workforce relations in critical industrial sectors, characterized by the absence of effective institutions for collective bargaining or arbitration in the workplace;

E) liquidation of defense enterprise capital assets (including key institutions of support for the welfare of the workforce) to forestall bankruptcy;

F) mounting incidents of financial mismanagement, misappropriation of government funds, and outright

fraud by disillusioned managers of foundering enterprises undergoing conversion.

These consequences, in turn, have been constantly highlighted by opposition political parties seeking to erode public confidence in Yeltsin's government. As the 1995 Winter elections clearly demonstrated, all of this called into question for many Russians the wisdom of a liberal reform ideology based on Western-defined notions of "open economy," "privatization," "demilitarization," and "environmental protection." In fact, we have heard the occasional skeptic suggest that "true privatization" and the existence of tier three enterprises are merely "smokescreens" to create the illusion that Russia is moving toward a market economy.

We have concluded in our research, however, that there have been both national and regional plans for defense conversion since at least late 1994. More importantly, the viability of the defense conversion process, specifically with respect to the 30 percent of enterprises delegated as "tier two", relies greatly on the perception of success of tier three organizations.

First of all, the tier three enterprise is a necessary support for one of the critical functions of the tier two enterprise—attracting much-needed foreign investment. If tier three enterprises were liquidated, this would further cast suspicion on Russia's public position that it is promoting free-market reforms. This is an extremely important role when you consider that most of the tier two enterprises continue to experience considerable difficulty in attracting foreign investment and in creating successful joint ventures. As we have suggested in this report, tier two enterprises are still severely underutilized and constitute a major drain on regional resources.

The real issue with tier three organizations, based on our research, lies in the inherent contradictions which are inescapable under the defense conversion policy as reviewed by Voronin: in order to operate as a truly market-driven organization, a tier three company like Nitel needs to sacrifice programs and liquidate assets, including technologies, which are no longer financially viable. Yet, under the dictates of the defense conversion policy, this violates national security in terms of maintaining social stability. In other words, although tier three enterprises have to be given the opportunity to survive under created free-market conditions, they must not be permitted to undermine the type of social stability and national security that is promoted explicitly by tier one and tier two enterprises.

We have concluded that, while the specific problems outlined above are quite real, they are being created and systematically maintained by the absence of the type of politico-economic conditions that would foster the emergence of a truly "free-market" system. On the basis of our research, we do not believe that Russia is politically, economically, or culturally prepared to create the global, open free-market conditions that would ensure the viability of the tier three, "non-protected" enterprises.

To return to an issue we raised in the beginning of this report—why couldn't Russians give us an answer to the question, "transition to what?"— we conclude that the majority of Russian citizens consider that the so-called "transition" is really just a minimal state preceding a return to the former era of stability and predictability. It is our belief that whatever ordinary Russian citizens believe about the return to stability, it is a terrible mistake for Western analysts to assume that the average Russian is planning for the emergence of a free market based society.

APPENDIX

Plan and Setting of the Fieldwork

Minsk, Belarus

In January and February of 1995, Linda Randall was invited to Minsk, Belarus, by the Thomas Watson Jr. Center for International Studies (affiliated with Brown University), a group funded by the United States Information Agency (USIA) with the purpose of teaching Belarusian managers the necessary skills to adapt to a market economy. At the Belarus center Dr. Randall had the opportunity to interview eleven top managers and entrepreneurs about the business issues confronted by them. In this sample of eleven, two were defense companies. One was the super-thin fiber company, "MakS" and the other was the Design Bureau for High-Precision Electronic Machinery, a subsidiary of Planar. During her visit, Dr. Randall also interviewed several key people who are familiar with the economic status of Belarus, including several Belarusian scholars who were studying their country's economic transition. One of the scholars is Sergei Kritchevski, head of the International Business Department of the Belarusian State Economic University. Dr. Randall also talked extensively with Ilkka Sulamaa, who is a banker with the European Bank for Reconstruction and Development. Lastly, she spoke with Victor Ivanov, a UN Representative for Belarus. From these interviews, Dr. Randall concluded that industries in Belarus were reluctant participants in market reforms, and the government was not interested in foreign interference. Furthermore, most spoke of the depth and continued power of the ex-communists in Belarus, and the desire to be reunified with Russia. Since these interviews, Belarus has indeed reunified with Russia.

Nizhny Novgorod and Samara, Russia

In Moscow, Dr. Randall met with Paul Ginouves, a business consultant, who worked with CDC in Russia. He had spent some time in Nizhny Novgorod assisting the regional government with developing a marketing plan for the airport, and had several critical contacts for Dr. Randall to interview. We were very interested in the Nizhny Novogorod region (formerly Gorky) as our primary field-site because this region has long played a key role in the military-industrial complex of the former Soviet Union. It has been a center for ship-building (Krasnoe Sormovo), aircraft design and manufacture (Sokol), tanks and heavy armored vehicles (GAZ), avionics and defense electronics (Salyut, Nitel, and many medium-sized enterprises), nuclear weapons research and production (the Arzamas complex), and chemical research and production (Dzerzhinsk). It was our hope that, through Mr. Ginouves' contacts, we could gain access to some of the military installations undergoing defense conversion.

Dr. Randall and Mr. Ginouves traveled to Nizhny Novgorod and met first with Victor Pershin, the regional government's specialist in international relations. Mr. Pershin introduced Dr. Randall and Mr. Ginouves to members of the regional government's committee on defense conversion, and to a few executives currently working in defense companies.

Dr. Randall also met with several Americans in the area in order to gain their perspective of the business and political situation, as well as to initiate a series of contacts for the research team returning in the Fall. This list included the following:

Daniel Trubow—Investment Officer of the Small Enterprise Equity Fund

Russian American Business and Information Center—Peace Corps

American Business Center of Nizhny Novgorod—Michael Levin, Center Director

American Center—Sandra Norman and Carol Glover

Price Waterhouse—Kendrick White.

Samara, Russia

While Dr. Randall was in Nizhny Novgorod, it was suggested that she also investigate the city of Samara as a second potential site for in-depth research on defense conversion. Samara also had been a closed city until 1991. In Samara Dr. Randall was again able to use a CDC contact, Anastasia Plahotya, who would be able to facilitate the process of developing key contacts and arranging interviews with key officials involved in the region's economic transition. She met with regional government officials, and had the opportunity to interview two top executives from two different defense companies about their operations and conversion efforts. Unfortunately, Dr. Randall was unable to secure sponsorship for Drs. Coakley and Graves in order for them to return to Samara and conduct more in-depth research. Furthermore, after initial interviews with government officials, she was no longer granted further interviews.

Lori Coakley and William Graves' Trip to Nizhny Novgorod

During the Fall academic semester, Lori Coakley and Bill Graves were appointed as visiting faculty in the History-International Relations Department of the University of Nizhny Novgorod, under Dean Oleg Kolobov. Throughout that semester, with the assistance of select faculty and graduate students of the Departments of History/International Relations and Applied Sociology, Coakley and Graves gathered data on defense conversion from both published and unpublished Russian sources, and conducted formal interviews with university faculty, regional government administrators, foreign business advisors and consultants working in the region (including the Americans listed above), select managers and employees of both defense and non-defense enterprises, and select members of the Yarmarka regional trade commission.

In addition to assisting Coakley and Graves with weekly literature searches, under the direction of Coakley and Graves, the Russian graduate students conducted and transcribed several in-depth interviews with a number of former *oboronchiki*, all of whom had voluntarily left their positions in defense enterprises to seek employment in the "privatized" sector.

Over the course of several months of formal and informal interviewing, we found that most members of the academic community and members of the newly emerging class of entrepreneurs were extremely helpful in assisting us to understand the complex character and multifaceted significance of conversion in Nizhny Novgorod. Thanks largely to their collective interest in helping us to understand an extremely complex phenomenon, we feel that we will be able to make a number of important points about Russian defense conversion in this report.

On the other hand, we feel that it is important to point out that the longer we stayed in Nizhny Novgorod the less assistance was provided to us both by regional government administrators and by key members of the defense-industrial community. Indeed, in spite of our academic sponsors' attempts to arrange entree or to set up specific interviews with key personnel in several major defense enterprises of interest to us, a number of important players in the defense sector simply would not meet with us at all.

We have understood these "constraints" in the following ways. First of all, there is a general perception in the industrial sector that there have been too many "foreign experts" with much advice to give and too little concrete assistance to offer. In the context of some of our interviews, the point was made that many Russians felt that the United States, in particular, had not granted the level of financial assistance it had allegedly promised

and, indeed, had a responsibility to provide.

Second, there is still a great deal of concern about the security implications of defense conversion, especially in a region such as Nizhny Novgorod. We believe that in the case of our own research efforts this Russian concern translated into the suspicion that we were "spies" of one kind or another. On more than one occasion, we were referred to only half jokingly as *razvedchiki* ("intelligence officers").

Third, both National Duma political contests and many local regional contests during the Fall and Winter of 1995 led to a proliferation of newly resurrected "communist" parties and publicly declared "communist" candidates. Even as these elections served to publicly discredit the ultra-nationalist right throughout Russia, the same elections for the first time since 1991 also cast the "communists" in a more positive light for many working people in Nizhny Novgorod and throughout all of the heavy industrial heartland of Russia, as well.

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