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The Soviet Crackdown on Quality: An Old Tradition With a New Twist

An Intelligence Assessment

Secret

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April 1987

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The Soviet Crackdown on Quality: An Old Tradition With a New Twist

Key Judgments

Information available as of 2 April 1987 was used in this report.

In keeping with General Secretary Gorbachev's plans for a dramatic improvement in product quality during the 12th Five-Year Plan (1986-90), the Soviets formally instituted an ambitious quality control system in selected sectors of industry on 1 January 1987. The program encompasses 1,500 industrial enterprises that produce a wide range of important investment and consumer goods. We estimate that roughly 15 percent of all industrial output and nearly one-third of the production of the critical machine-building sector are subject to it.

The new system—known as State Acceptance *(Gospriyemka)*—ostensibly acts on behalf of the buyer by ensuring that products meet quality standards. Soviet legislation establishes permanent and independent staffs of state inspectors at individual plants. The inspectors have the right to inspect products at any stage of the production process and are the final arbiters on matters of quality. This system is similar to—and may have been modeled after—the program used by the military for many years to ensure the quality of defense goods

Although the new system has been in effect for only a few months, [redacted] State Acceptance has already jolted Soviet industry. According to the Soviet press, strict control by State Acceptance workers was a significant reason for the poor industrial output figures—particularly in machinery production—during January and February. Many plants were unable to fulfill plan targets because State Acceptance workers rejected an average of 10 to 20 percent of the products inspected. As a result, industrial output was almost the same as in January and February of last year, while production in the machine-building sector fell nearly 8 percent below the 1986 level for those two months. In key product categories—such as machine tools, computers, and agricultural machinery—production was even further below last year's levels.

The effects of the drop in output were at least twofold. First, many plant directors and workers did not receive their usual bonus payments for meeting the plan. Total monthly incomes were reduced by as much as one-third. Workers also had to work overtime without remuneration in order to correct deficiencies in many products. Second, supply balances within the economy were threatened. In a tautly planned system in which supply links

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are centrally determined, a disruption anywhere in the chain—particularly in the delivery of raw and intermediate goods—threatens production in all quarters.

These effects may not have been entirely unexpected. The leadership may have intended *Gospriyemka* to be another measure to discipline the industrial work force. In a major speech on quality control during mid-November of last year, Gorbachev admonished industrial workers that those who produce "garbage" should not be rewarded. Nevertheless, the severity of the quality problems may have come as a surprise to the Soviets. Gorbachev recently stated that the problems afflicting Soviet society "are more deeply rooted than . . . first thought."

How Gorbachev responds to these developments will depend on the impact of the quality control measures. A rebound by midyear in the output of the sectors covered by State Acceptance without a relaxation of standards would be an important step forward in reducing shoddy workmanship and raising the competitiveness of Soviet products—a clear success for Moscow that would argue for the program's rapid expansion throughout industry. The rough start in January and the slow and uncertain improvement in February, however, suggest that industry—especially the machinery sector—will be hard pressed to simultaneously meet tough quality standards and ambitious production targets

In the more likely event that inspection continues to disrupt production to an unacceptable degree, Moscow will be faced with difficult choices:

- *Retreat.* Industry's poor showing early this year threatens 1987 plan targets, which in turn could challenge the overall goals of Gorbachev's economic program. Moscow may choose to cut losses by relaxing standards and allowing more shoddy goods to pass inspection.

- *Expansion.* Gorbachev may be unwilling to accept any delays in his ambitious modernization timetable. As an assertive reformer willing to incur risks, he could capitalize on the current leadership support for more rigorous quality control and rapidly expand the system to a broader swath of the economy.

- *Consolidation.* Considering the sweeping impact of the new program, the leadership may pause to evaluate its impact on industry and the economy as a whole. Although Moscow could leave the coverage of the program basically unchanged, it may move to shore up weak spots in the program and consolidate gains in quality.

We believe consolidation is the most likely course for the remainder of 1987. Given the crucial position of improved quality and technological advance in his game plan, Gorbachev would be unlikely to admit failure and rescind or substantially relax the new program. On the other hand, the rapid expansion of a highly disruptive system could quickly generate labor unrest, further strain the supply balance of the economy, and erode the strong leadership support Gorbachev seems to enjoy, especially if it contributes to resistance to his programs across the board

Holding steady would incur little risk of severely undercutting the thrust of Gorbachev's reform package and probably would not lead to major economic disruptions. Moscow could use the remainder of the year to selectively extend State Acceptance to cover more of the suppliers of plants already under the system. Such additional coverage would help ease the "quality" burden on plants currently receiving shoddy materials. Nevertheless, even such a limited consolidation of gains risks disrupting the supply system, particularly if industry—with its cushion of large inventories diminished—begins to suffer shortfalls directly attributable to State Acceptance.

Over the long haul, *Gospriyemka*—despite its role as a surrogate market force—can only approximate the needs and preferences of the consumers and is only the first step in what promises to be an uphill battle against poor quality. Even if successfully expanded throughout industry, the new system can only ensure that products meet some acceptable level of quality. Moreover, as currently designed, it cannot tackle the issue of advancing technology to Western levels—a major factor in generating long-term economic growth

There are signs that the leadership recognizes the need for a long-term solution that addresses the deeply rooted causes for low-quality output. Such a solution would require a different set of economic incentives, which

in turn would require the introduction of market elements into the system, steps that would be much more politically difficult for Gorbachev to undertake. If the regime is to be successful in achieving "fundamental change" in the quality of output, it will have to build a political consensus in support of measures that overturn the usual working arrangements of the economy.

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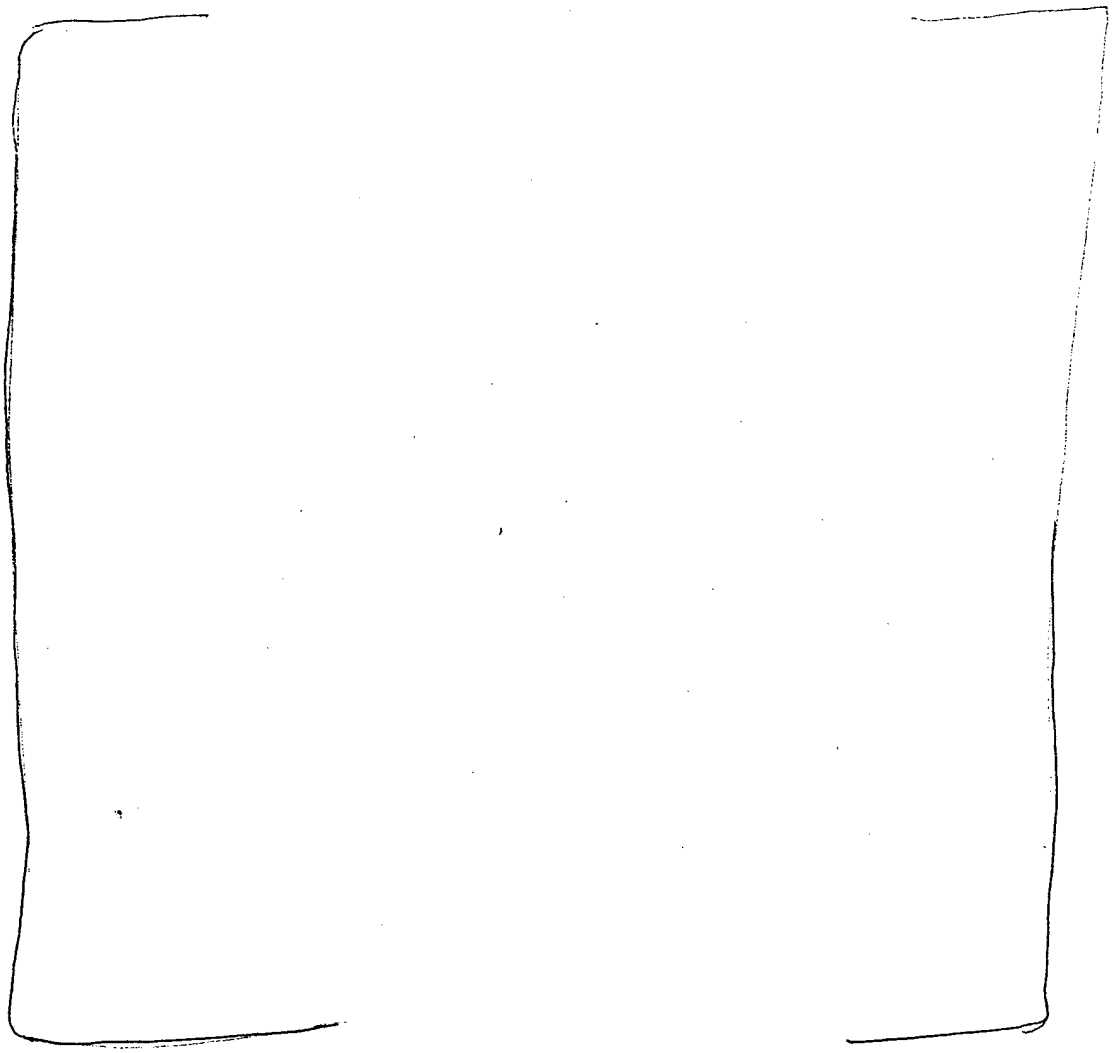


Figure 1. The historical Soviet approach to quality control

The Soviet Crackdown on Quality: An Old Tradition With a New Twist

Background

The state of affairs in the entire national economy will depend on how things will proceed with raising the quality of output.

Mikhail Gorbachev
15 November 1986

Since his rise to power in March 1985, General Secretary Gorbachev has devoted unprecedented attention to the need to raise the technological level and improve the quality of Soviet industrial output. He envisions the Soviet Union becoming vastly more competitive and is overseeing steps toward this goal:

- During the 12th Five-Year Plan (1986-90), Gorbachev plans to treble the number of Soviet products that meet "world standards" in terms of quality, reliability, and competitiveness. By the end of the century, he expects Soviet technologies and goods to equal the best in the world.
- On 1 January 1987, the Soviets instituted a stringent quality control system for industry.

Since the 1920s the Soviets have tried various measures to improve quality control of their manufactured goods (see figure 2). By the mid-1960s, the USSR's quality control system had basically assumed its current form, which relies on:

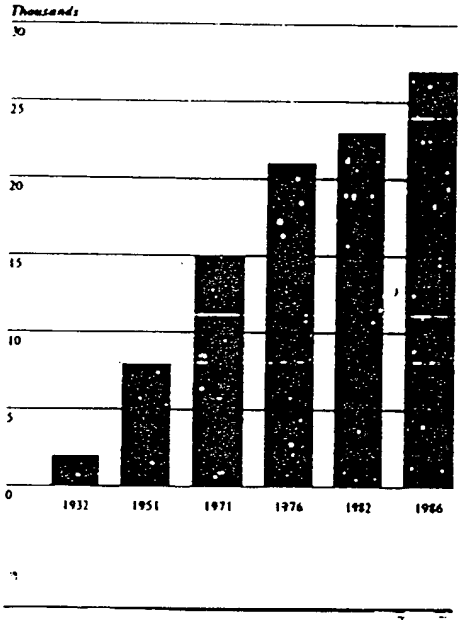
- *A sea of standards.* Quality is measured in terms of compliance with four types of standards: national, branch (ministerial), republic, and enterprise. Since 1926, the Soviets have compiled thousands of national standards (GOSTs), which—although not the most numerous or specific—are the most important for an enterprise to observe (see figure 3). These GOSTs give specific instructions on when and how to accomplish each stage of production.
- *Centralized oversight.* The State Committee of the USSR on Standards (*Gosstandart*) is charged with oversight of the development by the industrial ministries of national standards and with monitoring compliance with them.
- *Plant inspections.* Each Soviet enterprise has its own Department of Technical Control (OTK). According to Soviet law, the chief of the OTK has the same rank as the enterprise director, and the actions of the former's staff are intended to be outside the latter's control or influence. Ostensibly, the OTK has the right to inspect and test goods at each step of the production process and to test the final product to ensure compliance with all the relevant standards for performance and reliability.
- *Economic incentives and national campaigns.* "Carrot-and-stick" measures are designed to spur industrial managers to increase quality. First, industrial organizations are allowed to increase prices on goods awarded the State Seal of Quality (*Znak Kachestva*) for exceeding the standards, thereby increasing the value of output produced by the plant and the profit received. At the same time, prices are reduced and profits lost on goods that are below standard. Second, the Soviets have launched numerous national campaigns to tighten up the application and efficiency of quality control at enterprises.

Since the mid-1960s, the Soviets have tinkered with the quality control system. In the 10th Five-Year Plan (1976-80), *Gosstandart* introduced a "comprehensive standardization program," which included customers in the development of standards for the producing branches of industry. The Soviets also introduced the "comprehensive product quality control system."

Figure 2
Evolution of Soviet Quality Control, 1925-86

Standardization Committee of the Council of Labor and Defense	1925	
	1926	Introduction of First All-Union Standard (OST-1)
All-Union Standardization Committee of the Council of Labor and Defense	1930	
All-Union Committee abolished People's Commissariat assumed duties	1936	
All-Union Committee reestablished	1940	Introduction of the term State Standard (GOST)
Renamed Gosstandart	1948	
Renamed Committee on Standards	1963	
Renamed Committee for Standards, Measures, and Measuring Instruments of the Council of Ministers	1964	
	1962	Creation of Permanent Commission for Standardization of the Council of Mutual Economic Assistance Initiated Unified Design and Technical Document Systems (ESKD and ESTD)
	1965	Decree "On Improving Planning and Strengthening the Economic Incentive for Industrial Production"
	1967	Introduction of the State Seal of Quality *(Znak Kachestva)*
	1968	Introduction of State System of Standardization (GSS) Creation of GOST 1 – the first standard on standards
Creation of the State Committee of Standards of the USSR Council of Ministers	1970	Work begun on Unified System of Technological Preparation (ESTPP)
	1971	ESKD introduced
	1975	Introduction of Comprehensive System for the Manufacture of Quality Products (KS UKP) ESTD introduced
Renamed State Committee of USSR on Standards	1978	Decree "On Strengthening Attestation" Decree "On Technical Control"
	1979	Decree "On Accelerating Scientific-Technical Progress" Decree "On the Type of Administration of the Technical Control of Industrial Enterprises" Decree "On Improving Planning and Strengthening the Effect of the Economic Mechanism on Raising Product Efficiency and Work Quality"
	1983	Decree "On Measures to Accelerate Scientific and Technical Progress in the National Economy"
	1984	Quality categories reduced from three to two
	1985	*Gosstandart* loses its leading role in setting machinery standards to machine-building institutes
	1986	Decree "On Measures for Radically Increasing the Quality of Products" Statute "Governing the State Acceptance of Output at Associations and Enterprises"

Figure 3
Estimated Number of Soviet National Standards, 1932-86



which applies "critical path" planning to all elements of the production process. The results of this system were widely heralded, and it was broadened to include regional or association standards and gradually expanded throughout industry to encompass over 30,000 industrial enterprises.

In 1984 the number of quality categories was reduced from three to two, with those in the top category—world and best Soviet levels—receiving the *Znak Kachestva* and a premium to their price, with prices of the remaining goods being reduced. In 1985 *Gosstandart* created state testing centers to test more than 6,000 of the "most progressive" types of equipment. In 1986 Moscow enterprises were experimenting with the "Quality" program, a variant of the quality circle used in Japanese and US plants in which each worker certifies the quality of his work with his own stamp

Despite these concerted efforts, Soviet manufactured goods have continued to be characterized by poor quality and reliability. Although many factors—such as poor worker training, the low quality of raw materials and machinery, and lax labor discipline—contribute to this problem, the four main problems have been:

- *Emphasis on quantitative plan fulfillment.* Ministerial and enterprise performance in meeting the plan targets for total value of output has been the primary influence on managerial careers and the size of the organizational incentive funds. Indeed, one plant director recently commented that "directors were removed from their posts because of the lack of quantity; for the lack of quality, they were merely scolded." Bonuses awarded to members of a plant's OTK also have depended on overall enterprise plan fulfillment, cast in *quantitative*, not *qualitative* terms.

- *Lack of competition.* Enterprise achievement of better quality than other firms has not been a driving factor in the Soviet Union. Wholesale trade organs—which purchase and then distribute goods to the customer—generally accept all output of a plant regardless of quality. In the words of a Soviet economist, "If a customer was dissatisfied with the quality he could go to hell."

- *Reliance on standardization as a surrogate for quality.* Standards alone do not translate into quality. They may be lenient, obsolete, or concerned with insignificant technical specifications. Further, the virtual absence of competitive pressures gives the industrial ministry—responsible for both suggesting and enforcing standards—little or no incentive to meet, much less to improve, standards.

- *Ineffective quality oversight.* Although *Gosstandart*'s 400 state and regional "laboratories of state inspection" have conducted thousands of spot inspections annually, the ad hoc nature of such control severely limited its effectiveness. For example, a foreman at a furniture plant commented in the Soviet press recently that plants "find out in good time about checks . . . [and] always manage to prepare a suitable consignment of furniture for them with no rejects."

Gorbachev's Proposal: A Surrogate Consumer

I am, of course, nowhere near believing naively that tomorrow or the day after tomorrow the whole 100 percent of engineering output being made will be in accordance with world levels. After all, to achieve that a lot of things have to be changed . . . improvements have started, changes for the better are taking place in this matter, but not on the scale we need.

Mikhail Gorbachev
15 November 1986

Gorbachev's initiatives are, in a sense, in keeping with Soviet traditions—exhortations to achieve higher quality and "tinkering" with the system. But his are more ambitious, and his pursuit of them more vigorous, than those of his predecessors. Moreover, although his latest tinkering is still a centrally directed administrative measure, it attempts to compensate for a lack of market forces by introducing a surrogate for the consumer

There are two elements to his quality improvement program:

- To ensure that goods already in production meet the quality standards established for them.
- To accelerate the introduction of new, higher quality products and remove obsolete products from the market.

Although both elements are important to raising the overall level of product quality, Gorbachev has chosen to focus first on plant-level quality control, which offers the potential of making large gains more quickly and at relatively lower cost.

The Introduction of "State Acceptance": Gearing Up for Quality

In October 1985, the Soviet leadership authorized an experiment in quality control—which the Soviets termed *Gospriyemka* (State Acceptance)—at 19 of the country's enterprises. Circumstantial evidence suggests the experimental system was modeled after the one used by the only consumer in the Soviet Union with an effective quality control mechanism—the military (see inset). The experiment's novel and central feature was the introduction of *on-site* quality control at plants by representatives of *Gosstandart*. Representatives inspected each product, or a sample of the output, to see if it met state standards and general aesthetic measures of quality. The inspectors were authorized to remand substandard goods to the enterprise and to deny their inclusion in the firm's monthly output totals.

The results of the experiment were revealing and—according to reviews in the Soviet press—encouraging. In a recent interview, *Gosstandart* officials declared that not a single unit of output passed the first inspection at these enterprises in early 1986 but that, by December, 60 to 90 percent of the products passed without a defect. Gorbachev hailed the new system for shaking up the plants and "forcing them to shape an atmosphere in which it was clear to everyone that defective goods would not get through."

The success of these early trials led the Central Committee, in May 1986, to pass a resolution and a decree that formally instituted the practice of state acceptance and encouraged the "radical improvement of product quality." The resolution asserted that the task of improving quality is the most important task during the 12th Five-Year Plan.

Creating a National Oversight Body

Shortly after the May decree was released in the press on 2 July, *Gosstandart* announced that it had created a "Main Directorate for State Acceptance." The designation *main* may set the directorate and its

Gospriyemka: *Emulating Military Quality Control?*

The military representative system guarantees a standard of quality and enforces contract fulfillment. Unlike the quality control inspectors in the civilian sector before Gospriyemka, *military representatives are stationed full-time at a plant and monitor the entire acquisition process, from oversight of basic research at institutes of the Academy of Sciences to acceptance of finished items at the production plant. All production for the military is first approved by the inspectors of the plant's OTK. In most cases, military representatives then check for adherence to technical standards and conduct performance testing.*

In many ways, Gospriyemka *emulates the military system. Georgiy Kolmogorov—director of* Gosstandart *since 1984—and Vladimir Boitsov—his predecessor—were transferred from the defense-industrial sector to head that organization. Both systems employ 25,000 to 30,000 inspectors and technicians. Yet, significant differences exist:*

- *Unlike* Gospriyemka *inspectors, military representatives inspect and can reject incoming goods made at other plants—even if they have been approved by military representatives stationed at the sending plant.*
- *Military representatives bridge the gap between producer and consumer. Under* Gospriyemka, *however,* Gosstandart, *not consumers, establishes the standards by which inspectors judge quality. An inspector's measure of quality may differ from that of the buyers.*

The military quality control system also has some deficiencies, which could manifest themselves in the new Gospriyemka *system. These include:*

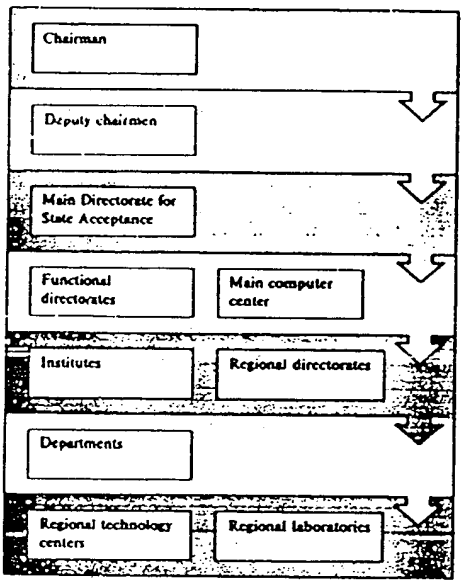
- *Duplication of effort (OTK inspectors and military representatives both inspect a product).* [redacted] *the KamAZ Truck Plant has 5,000 OTK inspectors.*
- *Bribes to the inspectors to overlook unmet schedules and to sign off on production prior to delivery.*

director, Boris Migachev, a cut above the rest of the organs of the State Committee, making a clear statement about its importance (see figure 4).

Exhorting Faithful Adherence

To underscore the leadership's commitment to *Gospriyemka,* the Central Committee called a meeting of party, government, and economic officials on 14 November 1986 to discuss the new program's implementation. In a hard-hitting speech, Gorbachev stressed that quality improvements are at the very center of economic restructuring. He acknowledged that workers' wages and bonuses would be reduced when an enterprise did not meet its production plan because output was rejected by the new inspectors. He even said that *any* payment to workers producing low-quality output was generous because, if they tried to sell this "garbage" on the world market, they would be reduced to "begging." He made it clear that he would not back down from the program and, if failures were discovered, ministers, heads of enterprises, and party organization leaders would have to answer for them

Figure 4
Estimated Organization of State Committee on Standards



Under leadership pressure, *Gosstandart* officials and enterprises began to prepare in the last two to three months of 1986 for the introduction of the new system:

- *Gosstandart* began to hire and train State Acceptance workers at each enterprise and to set up a national communication network to all enterprises involved.
- Each enterprise was instructed to check its own readiness; to test production capabilities; and to provide work stations and test, calibration, and measurement instrumentation and equipment

Choosing Key Industrial Targets

During the same period, it was announced that *Gospriyemka* would be introduced at 1,500 Soviet enterprises belonging to 28 ministries on 1 January 1987. At least some enterprises in all of the 11 civil machine-building and five of the nine defense-industrial ministries are included (see inset).[1] Open-source reporting has indicated that State Acceptance will cover:

- *In the affected ministries of the machine-building complex*, 43 percent of the enterprises and 60 percent of their output.
- *In all of the ministries affected*, almost one-third of the enterprises and about half of their products.

Using these figures, we estimate that *Gospriyemka* now covers about 15 percent of all industrial output and nearly one-third of total (civil and military) machine-building output.[2]

Enterprises selected for the program reportedly "produce goods of utmost importance for the economy and also consumer goods" (see inset on page 8). Embassy reporting also suggests that some plants may have been chosen because the quality of their output was considered a problem. For example, an employee of the Ordzhonikidze Machine-Tool Plant claimed that *Gospriyemka* was not introduced there because "purchasers negotiate the quality standards they require and they don't have complaints." In addition, the program extends to enterprises that provide raw materials and semifinished goods for machine-building and light industry, but reports indicate that the coverage is far from complete. The Zil automotive factory in Moscow, for example, has 200 major suppliers, but only 10 of them are covered by *Gospriyemka*.

[1] Our bifurcation of the machine-building ministries into civil and defense sectors is not meant to imply that production is neatly segregated. The civil ministries produce items such as military trucks and armored vehicles, while the defense-industrial ministries produce—among other civil goods—televisions, refrigerators, and computers. We have no reason to believe that defense hardware—historically under the rigid quality control of the military—is subject to *Gospriyemka*. Consumer and investment goods are probably the only items produced by the defense-industrial ministries that are inspected under the new system.

[2] Only 3 percent of all industrial enterprises and associations are covered by State Acceptance; however, all-source reporting suggests that many are large producers and hence could manufacture a relatively large share of industrial output

Industrial Ministries Working Under Gosplyemka

Machine-Building Ministries

Civil
Automotive Industry
Chemical and Petroleum Machine Building [b]
Construction, Road, and Municipal Machine Building
Electrical Equipment Industry
Heavy and Transport Machine Building
Instrument Making, Automation Equipment, and Control Systems
Machine Building for Animal Husbandry and Fodder Production
Machine Building for Light and Food Industry and Household Appliances
Machine Tool and Tool Building Industry
Power Machine Building
Tractor and Agricultural Machine Building [f]

Defense-Industrial
Aviation Industry
Communications Equipment Industry
Electronics Industry
Radio Industry
Shipbuilding Industry
Defense Industry [a]
General Machine Building [c]
Machine Building [c]
Medium Machine Building [c]

Other Industrial Ministries

Light Industry [a]
Timber, Pulp and Paper, and Wood Processing Industry
Ferrous Metallurgy [c]
Nonferrous Metallurgy [d]
Chemical Industry
Construction Materials Industry
Health [c]
Mineral Fertilizer Production [c]

[a] *Introduced at 64 enterprises and associations of this ministry.*
[b] *Introduced at 70 enterprises and associations of this ministry.*
[c] *Introduced at 40 enterprises and associations of this ministry.*
[d] *Introduced at 31 enterprises and associations of this ministry.*
[e] *Using all-source reporting, we have identified 22 of the 28 ministries Gosstandart claims are included in the program. Circumstantial evidence suggests this ministry may be one of the other six.*
[f] *Introduced at 64 enterprises and associations of this ministry.*

Identified Products Inspected Under Gospriyemka Since 1 January 1987 •

Machine Building
Autos (70 to 100 percent)
Trucks (70 to 100 percent)
Motorcycles
Machine tools
Agricultural machinery (100 percent)
Tractors (100 percent)
Bulldozers
Cranes
Excavators
Transport machinery
Railroad cars
Forge presses
Drilling rigs
Instruments
Metallurgical equipment
Duplicating machines
Calculating machines
Papermaking machinery
Chemical machinery
Energy machinery
Mining equipment
Radios
Watches
Photo equipment
Tape recorders
Televisions (100 percent)
Refrigerators (100 percent)
Air conditioners

Soft Goods/Other
Shoes
Textiles
Sewn articles
Electric bulbs
Furniture
Porcelain

Materials/Parts
Plywood
Pulp and paper
Linoleum
Copper
Platinum
Steel
Iron
Coke
Pipes
Rubber
Ball bearings
Cables
Sulfur
Petrochemicals
Mineral fertilizer
Ship repair parts
Raw materials and semifinished goods for autos, machine tools, and bulldozers

• *When known, the share of the total output of each type of product covered under* Gospriyemka *is reported.*

Selecting a Large Cadre of Inspectors
According to the Deputy Director of the Main Directorate for State Acceptance, *Gosstandart* was authorized to hire 25,000 inspectors, staff workers, and managers for the new system. Other statements by *Gosstandart* officials indicate that the size of the State Acceptance unit at an enterprise is determined by plant size and the inspection practices required for the products. Soviet press reports claim that 10 to 15 State Acceptance workers were stationed at the "average" machine-building enterpris[redacted] inspectors at the Noril'sk Metallurgical Combine number about 80, and, from open-source statements, we estimate there are approximately 500 at the Kama River Truck Plant (KamAZ).

[redacted] the Soviets were highly selective in staffing the 1,500 *Gospriyemka* units. Although the director of each enterprise reportedly prepared a list of nominees for the various positions, [redacted] many of these recommendations were not accepted. According to Igor Isayev, deputy chairman of *Gosstandart*, many plant directors nominated "simply unprincipled people. . . ." *Gosstandart* therefore made its final selections on the basis of recommendations of the local or republic party committee.

Once nominated and accepted, the new State Acceptance workers became employees of *Gosstandart* and began drawing their salaries from that organization—a base pay of 250 rubles per month augmented with benefits tied to quality control. Housing and benefits, however, were to be the responsibility of the enterprise.

The new cadres of *Gospriyemka* workers wer [redacted] already experienced in industrial production and familiar with the products they were to inspect. Four out of five had been specialists at the plant to which they were assigned. Nearly one-third of these were former chief engineers. Approximately 7 percent were previously directors and deputy directors of enterprises, 26 percent were medium-level managers, and approximately 28 percent were OTK chiefs. Despite this experience, each inspector was trained on standardization and the methods and forms of the state acceptance system for two weeks at regional centers. Furthermore, they were required to join the Communist Party if they were not already members.[1]

[1] The base pay of 250 rubles is the average industrial wage. The fact that the enterprise will provide housing and other benefits could, in the long run, weaken the discipline of the quality control system (the manager could gain leverage on the inspection staff by denying access, for example, to better quality housing).

The New System in Operation: Effective Quality Control

To the dismay of the leadership, preparations were incomplete in many areas on 1 January. According to all-source reporting, the "superstructure" may have been in place at the national level but not at the plant level. Open-source reporting indicates that, by mid-December, leaders of the state acceptance organs at all associations and enterprises were in place, but only 15,000 of the 25,000 staff workers had been selected. In addition, some new inspectors complained that the training was too short and the documentation overwhelming. More important, many of the instruments needed for testing products to ensure that they adhered to standards were not in place

According to the statutes governing *Gospriyemka*, the inspectors may carry out quality control and acceptance at any stage of production (see foldout figure 8 at back of paper). The available evidence suggests, however, that during the first two months under the system they probably only checked to see that the final product met technical standards. Even so, as already noted, many of the necessary measuring instruments were not in place to test for workability and reliability. Thus, the physical appearance of an item may have served as a main indicator of quality.

Inspectors Tough: Rejections High, Output Low
Reporting on Soviet industrial performance during January and February suggests the new system made a decided difference—*Gospriyemka* representatives rejected on average 10 to 20 percent of all the

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Gospriyemka *Comes to the Donetsk Refrigerator Plant*

The following example of the effect of State Acceptance was adapted from a December Pravda *article.*

Gospriyemka *representatives arrived at the end of October 1986—too late to affect business as usual in that month. But, in November, the new inspection system turned things upside down. The change is personified in the experience of Anatoliy Iosifovich Yaremchuk, a longtime worker at the Donetsk Refrigerator Plant and a newly appointed* Gospriyemka *inspector. On Friday, 28 November, Yaremchuk was summoned to the* Gospriyemka *office and informed: "Tomorrow is a working day. Request of the plant administration. You will work the second shift with Lopatina." Yaremchuk quickly responded that "storming" to meet the monthly production plan, especially on a Saturday, in no way fits in with the campaign for high quality—but his statement fell on deaf ears. Returning to his station, he reflected on the plant's past experience with storming. The constant race for quantity to the detriment of quality had recently resulted in the "Donbass" refrigerator losing its Mark of Quality.*

On Saturday, Yaremchuk and Yelena Andreyevna Lopatina, also a Gospriyemka *representative, appeared in the assembly shop at 3:30 p.m. Ivan Timofeyevich Yurchenko, the inspector working the first shift, told Yaremchuk that during his duty 210 refrigerators had been presented for delivery and 30 had been rejected. They knew that 300 additional refrigerators were needed for the plant to meet the November plan. The evening shift would be sufficient to close the breach. Mysteriously busy around the units coming off the line were not only assembly workers, but also people drawn from the office. Among them were senior foreman Anatoliy Kubich and OTK shift foreman Larisa Kravchenko. Even N. Belinskiy, general director of the association, dropped in. The entire atmosphere was permeated with a single aim.*

"Let's get to work," said Yaremchuk. "No allowances. We will do everything conscientiously." Several weeks before, Yaremchuk had been a member of the plant collective; he grew up in it. But today he was on the other side of the brigade. Selecting the first of three packaged units for verification and testing, he felt the gaze of many people on him, including longtime acquaintances. Their prestige was in his hands.

"Here is a dent, here is a deformation. What shall we do?" asked Lopatina.

"We will take another three units," said Yaremchuk.

The new troika did not cause any enthusiasm. The switch on one was bad, the external appearance of another did not conform to the standard. They selected some more refrigerators. Two of them failed when plugged in. One consumed 10 watts of electricity per hour more than prescribed; the other, 7 watts more. What were they fit for?

By the end of the shift, refrigerators cluttered the passageways; another 375 awaited their turn—more than required to fulfill the monthly plan. Many plant workers remained at the shop, waiting for what Gospriyemka *would say. Finally Yaremchuk and Lopatina announced that they were rejecting the whole batch. The production plan was to be unfulfilled that month.*

Machine-Building Ministries Criticized in January for Not Meeting Plan Targets

Ministry	Product
Civil	
Heavy and Transport Machine Building	Metal-rolling equipment and diesel locomotives
Electrical Equipment Industry	Electric motors and electric locomotives
Machine Building for Animal Husbandry and Fodder Production	Feed-harvesting combines
Machine Building for Light and Food Industry and Household Appliances	Refrigerators; freezers; and spinning, zigzag-stitch sewing, and washing machines
Construction, Road, and Municipal Machine Building	Excavators
Defense related	
Electronics Industry	"Elektronika" 401M semiconductor color TVs
Radio Industry	Radio receivers, TVs, and tape recorders
Communications Equipment Industry	Radio receivers, TVs, and tape recorders

products they inspected, and in some instances far more (see inset). At an agricultural machine-building plant, for example, nine out of every 10 machines did not meet the technical conditions. The situation was even worse at the Machine Building Plant *imeni* V. I. Lenin in Voronezh. Products worth 74,000 rubles were presented to *Gospriyemka* inspectors during the first month, but only 250 rubles' worth were accepted.

Adverse Impact on Industry

Industrial performance in January and February fell far short of Soviet plans. We estimate that industry as a whole performed barely at the same level as in the same two months of 1986, and the machine-building sector produced nearly 8 percent less. Five of the 11 civil machine-building ministries and three defense-industrial ministries were criticized for not fulfilling plan targets (see table). In January, 60 percent of the machine-building enterprises subject to *Gospriyemka* control reportedly did not meet the plan because the new system set up a "reliable barrier to inferior products."

Although our calculations suggest that a rejection rate of 10 to 20 percent could have accounted for the entire shortage in planned machinery output, the precise effect of State Acceptance on overall industrial output during January and February is not clear. Extremely cold weather in January crippled transportation, forcing high-level intervention. In addition, other changes have been made in industrial operating procedures:

- An emphasis on fulfillment of contract deliveries as a primary indicator of plan fulfillment. Purchasers may now reject items that do not comply with the delivery contract. The value of the goods is deducted from the output totals of the producer, and bonuses are affected accordingly.
- The transfer of selected plants and plant operations from one to two or three shifts without expanding the work force.
- The unrelenting pressure on machinery plants to retool and reequip, while still increasing production quantities.

As figure 5 demonstrates, however, the new quality control system had a dramatic impact on those products covered and was almost certainly the cause of the drop in machinery output—a primary factor in overall industrial performance.

While the leadership realized that State Acceptance and the other economic reforms would disrupt production somewhat, they were probably surprised by the extent of the impact. Gorbachev recently stated that the problems afflicting Soviet society "are more deeply rooted than . . . first thought." An analysis of Soviet economic plans suggests that, although the Soviets held down January's machinery targets—probably in anticipation of difficulties in making the transition to the new programs—they expected February's performance to be business as usual.

Figure 5
USSR: Monthly Production of Selected Products, August 1986–February 1987

Percentage change compared with the same month the year before. Before State Acceptance After State Acceptance

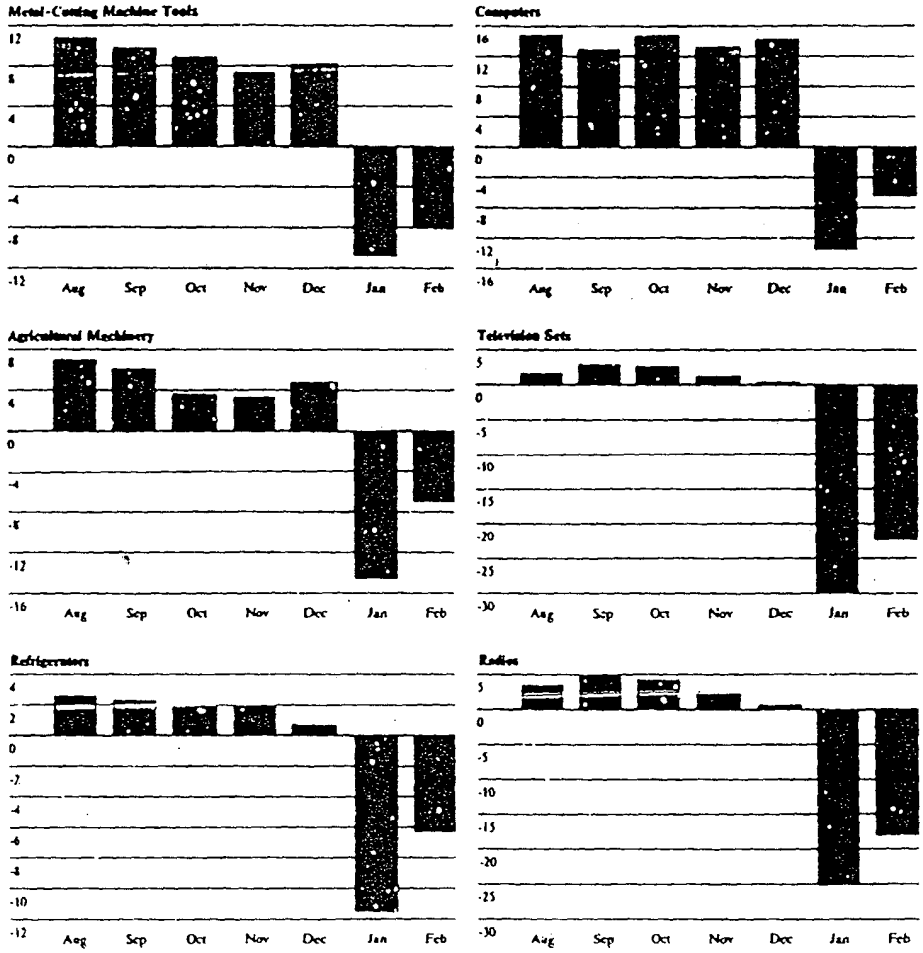
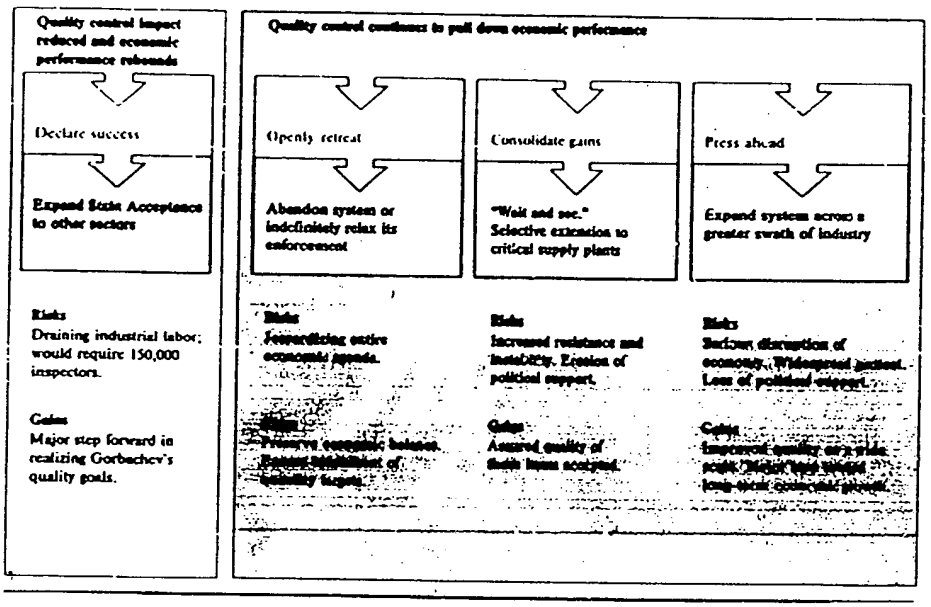


Figure 6
Confronting the Quality Issue: Gorbachev's Short-Run Options



The new quality control system also penalized plant managers and workers. With the drop in output, many plants did not receive their usual bonuses for meeting the plan. As a result, workers received less than usual in their monthly paychecks. At a farm machinery factory in western Siberia, for example, average pay dropped by one-third in January because *Gospriyemka* inspectors rejected many of the mineral-fertilizer spreaders produced there. Moreover, workers had to put in overtime without remuneration to correct deficiencies in many products. The strain imposed by *Gospriyemka* was evident in work stoppages and protests at the KamAZ truck plant directed against the new system.[1]

[1] KamAZ produces for both civilian and military customers. We have no evidence that any of the protests affected military production or that they were directed against the military quality control system.

Implications and Outlook

The Short Run: A Cautious Period of Wait and See

The prospects for State Acceptance for the remainder of 1987 depend heavily on economic performance (see figure 6). If most of the problems encountered during January and February prove to be transitional, Moscow may declare State Acceptance a success and seek to expand it throughout industry. If a high rejection rate persists, Moscow probably will be forced to rethink the viability of this particular approach to its ambitious quality control program

Rebound Argues for Expansion. The remainder of 1987 may be brighter than the first two months portend. The modest improvement in performance from January to February indicated for selected products in figure 5 may suggest that industry is adjusting to the new system and/or its effects were not as grave as first indicated. Plant managers may have underestimated the thresholds imposed for their products under the new system, and, in "testing the waters" with the traditional quality assortment, they may have been initially caught offguard by the vigilance of the inspectors. In addition, the successful resubmission of previously rejected items—allowed under Soviet law—may substantially augment production in subsequent months. Moreover, much of the shortfall in total production could have been the result of extremely cold winter weather in January and the implementation of other economic programs.[1]

A rebound in the sectors covered by State Acceptance could allow Moscow to proclaim the new system a success and would represent an important step forward in accomplishing the first phase of the two-phase quality campaign—increasing the quality of products currently in production. In keeping with the Soviet practice of implementing economic change through a series of experiments, Moscow may seize the opportunity to expand State Acceptance throughout industry as a means of moving closer to its overall goal—improved quality across the board.[1]

Such a scenario seems unlikely. Moscow will probably be reluctant to declare *Gospriyemka* a success until output reaches plan targets, and the exceptionally rough start early this year suggests that industry—especially the machinery sector—will be hard pressed to meet both quality and output targets. In addition, according to the Soviet press, many plants under State Acceptance receive materials and components from enterprises not monitored by the new system, can do little with the defective items they receive, and can only suffer rejected output as a result. Moreover, many plant managers have openly complained that existing plant equipment is often obsolete or otherwise incapable of producing goods that can meet the quality specifications required by *Gospriyemka*.

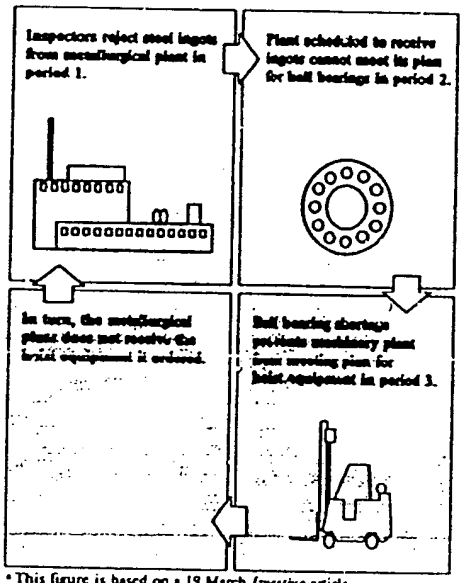
Continued Problems Pose Dilemma. The more likely course of events is that economic performance will continue to be plagued by the quality issue for the remainder of the year. In this case, Moscow will be faced with a serious dilemma—whether to abandon or relax the system so as to increase the growth of output, to move forward aggressively, or to hold firm with this approach to quality control.

Open Retreat Unlikely. Pressures for relaxing State Acceptance already exist. The poor performance in January and February poses a threat to 1987 plan targets, which in turn could challenge the overall goals of Gorbachev's ambitious revitalization drive. Moreover, rejection rates encountered early on could initiate a snowball effect by creating bottlenecks in the supply system, which, as illustrated by the example in figure 7, could threaten the balance of the centrally planned and administered Soviet economy.

Moscow may also be subject to pressures to relax State Acceptance to make the system more "fair" to the enterprises and workers who are saddled with shoddy supplies and antiquated production machinery. Without such concessions, Moscow risks inducing more intense resistance to the quality control program, such as more extensive work stoppages—actions which could contribute to dissatisfaction with Gorbachev's revitalization programs across the board.

[1] Widescale expansion, however, would not come without cost. We estimate that the expansion of *Gospriyemka* to all industry would require over 150,000 inspectors, which would drain the already limited supply of skilled industrial workers with long experience. The addition of employees would also mean increased expenses for wages, training, and measuring instrumentation. More important, expansion would probably disrupt the economy—at least initially—in a manner similar to that witnessed during the first two months of 1987.

Figure 7
The Effect of Quality Control on the Soviet Supply System[a]



[a] This figure is based on a 19 March *Izvestiya* article.

Monitoring the Soviet Reaction: Problems in Detecting Subtle Retreat

Measuring the success of Gorbachev's drive to increase quality will be difficult. Although increased output could signal that industry is successfully coping with the more stringent demands of the quality inspectors, it could also be the result of:

- *A relaxation of standards, with less pressure on industrial managers and workers.*
- *"End runs" around State Acceptance. Recent Soviet press reports claim that on at least two occasions enterprises delivered significant volumes of output to purchasers without first submitting those products to the new inspectors.*
- *The allowance of exceptions when obsolete equipment or substandard materials prevent quality standards from being met.*

These "cosmetic" improvements would represent a setback for the quality campaign and could set an unwelcome precedent as the Kremlin addresses problems with and resistance to other economic programs.

Given the crucial position of improved quality and technological advance in Gorbachev's game plan, the Kremlin would be hard pressed (and unlikely) to admit failure and publicly rescind or substantially relax the new program—although it could ease up quietly (see inset). Such actions would be inconsistent with Gorbachev's aggressive style and could give foot-dragging economic leaders ammunition in their criticism of other economic reforms.

Expansion an Outside Chance. Alternatively, Gorbachev could continue to push *Gospriyemka* forcefully despite continued poor performance. He has clearly proved to be an unyielding leader,[a] and he could choose to exploit the broad leadership support he appears to enjoy:

- In January, the Council of Ministers "demanded" that the heads of ministries and departments, other officials, and the State Committee for Standards carry out measures to promote the effective operation of the state acceptance service without delay.

[redacted]

- In February, Leningrad party leaders were severely reprimanded for poor leadership and called on to ensure program success in the coming months.

- Also in February, Politburo member Lev Zaykov—while acknowledging that *Gospriyemka* has "many overt and covert opponents"—warned against industry expecting that "everything will return to the old footing in two to three months."

- On 9 March, Premier Nikolai Ryzhkov issued the strongest statement of support to date, claiming that "harsh measures" were the "only way" to increase the "technical level and quality of production."

Nevertheless, leadership backing for State Acceptance could begin to evaporate if labor unrest increases and production plans remain unfulfilled for successive months. In that event, Gorbachev's political standing could begin to erode, especially if opposition to *Gospriyemka* begins to spur resistance to his programs across the board. This might be all the more likely given the broad front of controversial changes and programs he is pushing or has implemented—wholesale personnel changes, the antialcohol campaign, *glasnost*, the "democratization" campaign (which includes election of enterprise managers), and draft legislation that would allow unprofitable enterprises to close (raising the specter of officially tolerated unemployment).

Consolidating Gains Best Bet. Finally, continued poor performance might lead the Soviets to solidify gains already made, thereby showing progress on the quality front while not risking the disruptions that could accompany a major expansion of *Gospriyemka*.

In such a scenario, State Acceptance probably would be gradually extended to supplier plants not currently under the new system but would not be expanded into new sectors producing end-use goods—such as the food industry. Incomplete coverage has been a major stumblingblock and the cause of considerable frustration during the implementation of Soviet economic reforms (see inset). Additional coverage, starting with the major suppliers of plants already covered by *Gospriyemka*, would allow them to run more smoothly, but would in turn disrupt production in the newly covered plants, necessitating further expansion of the program.

The Consequences of Piecemeal Change

Incomplete coverage has afflicted many Soviet attempts to broaden economic experiments. Such problems in the mid-1970s gave rise to the following joke:

Moscow traffic authorities noticed a very sharp increase in traffic accidents. After various unsuccessful attempts to bring the accident rate down, the chief of the traffic bureau had an inspiration. Someone told him that London's traffic accident rate was one of the lowest in the world. "Let us send someone to see how the British do it," he said. After a short visit, his deputy returned with the solution. The main difference between the way traffic operated in Moscow and London was that, unlike Moscow, London traffic moved on the left side of the street.

The solution was obvious: As of July 1, the traffic should be switched from one side to the other. However, an older specialist argued that this might be too much of a change to make at once, especially for those who did not drive for a living and therefore had less experience. Consequently, it was agreed to introduce the switchover in stages; on July 1 all trucks and taxis would be shifted to the left side of the road, while all private vehicles would stick to the right until December 1, when they too would make the switch!

The Long Haul: Curing the Symptom or the Disease? As an integrated element of the Soviet industrial system, *Gospriyemka* will serve at least three useful purposes. First, it will flag those areas of the Soviet

economy that need greater attention to quality control. Resources can be directed to these areas, which probably will help improve the productivity and reliability of industrial equipment and the quality of consumer goods. Second, it ensures that accepted products will meet some standard—be it at "world" levels or any other measure—and that consumers of these goods can count on this quality. Third, improvement in the quality of consumer goods may motivate Soviet labor to work harder, which could help move the Soviets onto the upward-spiraling cycle of productivity—and hence economic—growth that Gorbachev clearly hopes to achieve.

Gospriyemka in its current form is unlikely, however, to satisfy both industrial buyers and consumers. Despite its role as a surrogate market force, State Acceptance can at best only approximate the needs and preferences of consumers. *Gospriyemka* inspectors can test for adherence to the administratively set standards and even pass subjective judgments on product quality, but this does little good if the products do not meet the consumers' demands.

Gospriyemka will probably also fail to address adequately the nagging problem of poor Soviet process control, which must be resolved if the Soviets are to achieve technological and qualitative advance similar to that of the West. Although *Gospriyemka* can identify those goods that fail to meet the standard, it is unlikely—in its current manifestation—to pinpoint the breakdown in the production process and, even if it does, can only suggest likely corrective measures. The plant still retains the ultimate authority in this area.

Finally, State Acceptance forces industrialists to achieve quality, for quality's sake. The new program makes little allowance for the cost of improved quality and overemphasizes meeting potentially irrelevant standards:

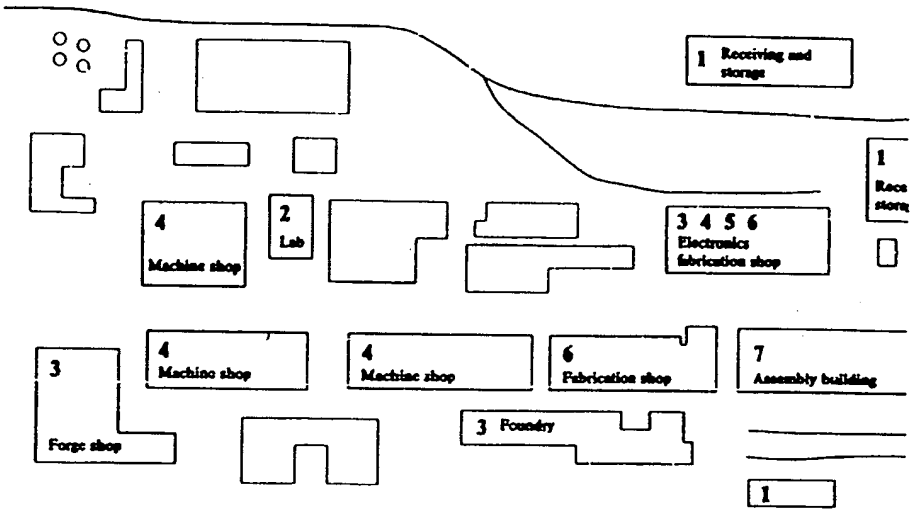
- A Soviet economist recently commented that "high quality production cannot be achieved without spending a ruble" and that the costs of reworking rejected products, of those permanently rejected, and of the "unproductive" quality control staff itself, would far exceed the benefits. He cautioned against shifting from a "worthless" course of "the plan at any cost" to one of "quality at any cost."
- Meeting set standards may improve the international competitiveness of Soviet products, but it will not enable the Soviets to reach their goal of producing almost all output at world standards. They will have to introduce technologically advanced products and manufacturing processes that use less material, labor, and energy.

Gorbachev appears to view State Acceptance as a kind of shock therapy, which—like the initial "discipline campaign" aimed at boosting productivity—is designed to achieve a forced and quick improvement through traditional (and politically easy) administrative measures. However, there are also signs that the leadership recognizes the need for a long-term solution that addresses deeply rooted systemic causes for low-quality output. Such a solution would require a different set of economic incentives, which would require the introduction of market elements into the system, steps that would be much more politically difficult for Gorbachev to take.

Gorbachev appears to be preparing the ground for a more comprehensive attack on the quality problem. In the legislative plan for 1986-90, a number of laws dealing with additional economic reforms are scheduled for preparation, including a "Law on Product Quality" projected for the first quarter of 1987. In his Sverdlovsk speech, Premier Ryzhkov indicated that the party and government had drafted "a set of organizational and economic measures" aimed at "fundamental change in issues concerning quality." If the regime is to be successful in achieving "fundamental" change, it will have to build a political consensus in support of measures that overturn the usual working arrangement of the command economy.

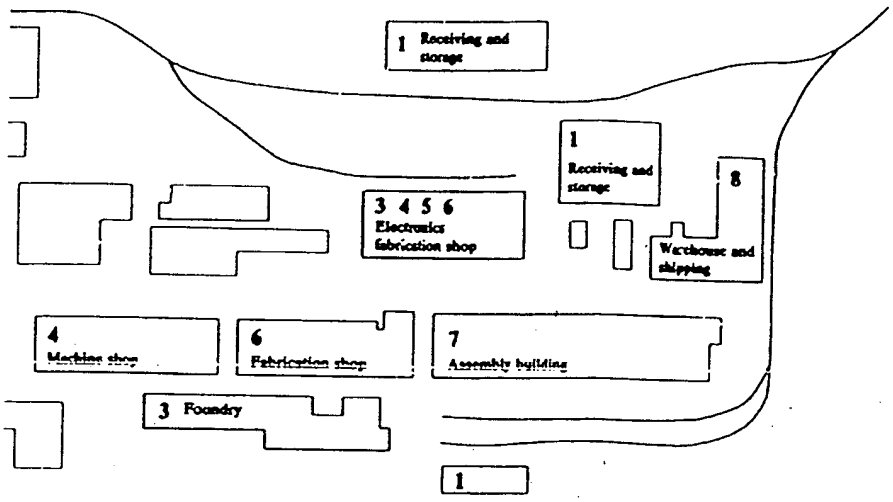
Figure 8
Quality Control at the Enterprise

Representative Soviet machine-building plant.



Players	Approximate Sequence of Activity						
	1	2	3	4	5	6	
Shop	Receipt and storage of materials and components.	Samples of materials sent to lab for testing.	Stock cast, rolled, forged, or pressed. Beginning of fabrication of electronics.	Components are machined, welded, or bonded. Electronic boards are wired, etc.	Outfitting of components or structures. Passive and active devices put on electronics.	Parts, components, and electronic items are assembled into subassemblies	Subc are f form prod
OTK	Tag checks and physical tests.	Records and verifies lab work.	Inspects and certifies the quality.				Pack final test
State Acceptance	Occasional verification of OTK work.	Role unclear. Allowed lab use for tests.	Ad hoc process and product checks.	May inspect and accept subcomponents.			
Military Representative	Inspects quality of incoming materials and supplies.	Role unclear. Probably verifies lab tests.	Random checks on production lines.	Oversight and strict control over production process.			

Reverse Blank



3	4	5	6	7	8	9	10
Stock cast, rolled, forged, or pressed. Beginning of fabrication of electronics.	Components are machined, welded, or bonded. Electronic boards are wired, etc.	Outfitting of components or structures. Passive and active devices put on electronics.	Parts, components, and electronic items are assembled into subassemblies	Subassemblies are mated to form finished product.		If the product is accepted by either the State Acceptance or the military representative, it is packaged and a seal of quality inspection is affixed.	Product is shipped to consumer.
Inspects and certifies the quality.	➡	➡	➡	Performs the final quality tests.			
Ad hoc process and product checks.	May inspect and accept subcomponents.	➡	➡	➡	Acceptance inspections and tests.		
[illegible]	Operates and [illegible] process.	➡	➡	➡	Final checkout and approval.		