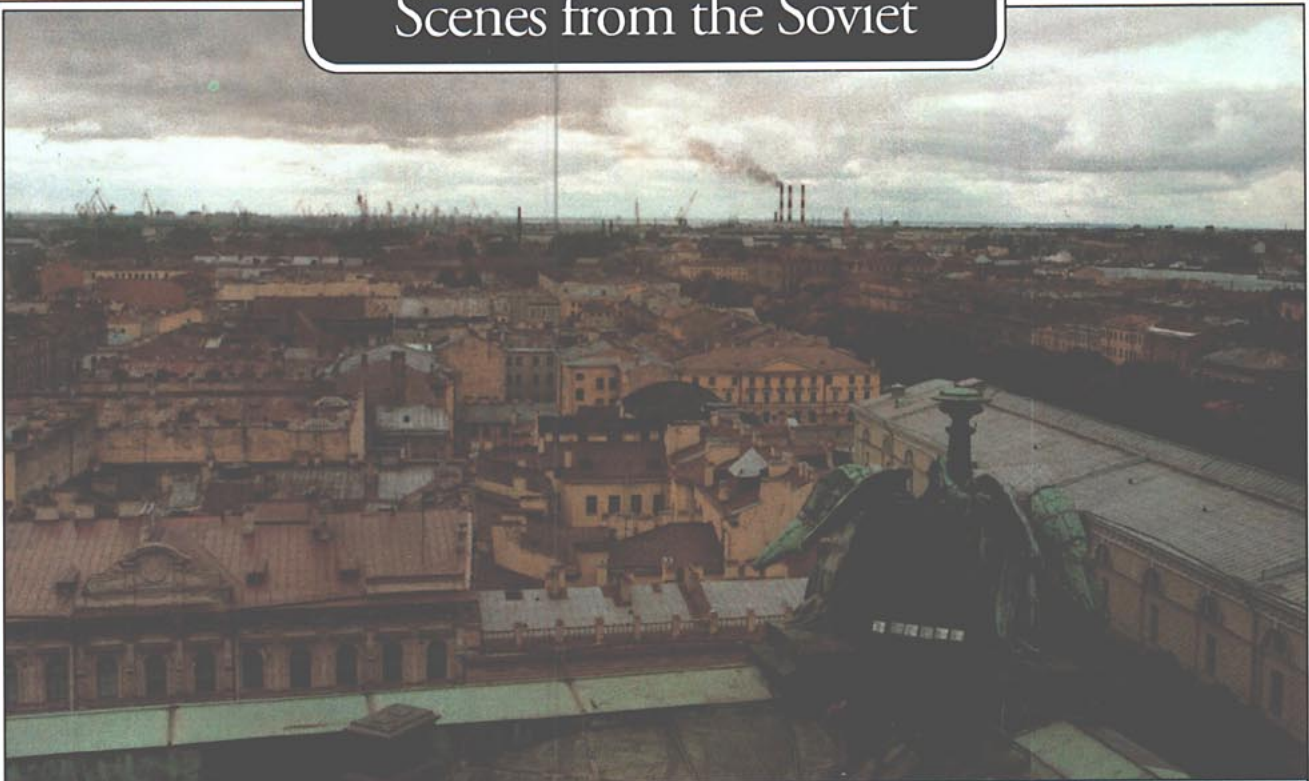


Scenes from the Soviet



A glimpse through the veil at Eastern Europe

Donald G. Meadows, F. Keith Hall and Patricia E. Hall

A TAPPI study group visited paper mills, schools and related institutions in Russia, Hungary, and Czechoslovakia last fall to assess the effects of changes in those countries and the needs and concerns of the paper industries there. This article gives an overview of conditions in Russia and focuses on St. Petersburg.

In the fall of 1991, a small group of TAPPI representatives embarked on a two-week study tour of Eastern Europe. The trip began just a few weeks after the attempted coup to replace Mikhail S. Gorbachov as leader of the Soviet Union. It was a time when the Soviet people were beginning to rediscover their own identity. But there was also uncertainty about how to transform a planned economy into a market system.

The tour began in Helsinki, Finland, where the group assembled the night before leaving for Leningrad, now called St. Petersburg, in Russia. Those who would make the journey included F. Keith Hall, TAPPI president and chief scientist at International Paper Company; Ronald B. Estridge, TAPPI vice president and senior vice president at James River Corporation; Dale R. Dill, director of polymer R&D at Protein Technologies International, Inc.; Robert A. Olson, former director of P.H. Glatfelter; Bo Fahlin, senior manager of Mo Och Domsjö Ab's Senior Advisory Group; Brian Attwood, director of St. Anne Paper & Paperboard; and Thomas W. Joyce, professor at North Carolina State University. Accompanying their husbands were Patricia Hall, Cynthia Estridge, Linda Dill, Janet Attwood, Gladys Olson, and Monica Fahlin. TAPPI staff included Wayne H. Gross, director of international operations, Matthew J. Coleman, communications manager, and Donald G. Meadows, senior editor of *Tappi Journal*.

The group was briefed on the economic situation in Finland at dinner. Many companies that had been trading or doing business with the Soviets have run into problems through lack of payment. Even so, the Finns are involved in various joint ventures that may prove successful. One that was quite noticeable during the stay in Russia was hotels and tours for foreign visitors.

The next morning, the group boarded its flight to the east. In its culture and its resources, Russia is superbly rich. But it faces a difficult recovery from 70 years of communism, cen-

tralized planning, and a vast bureaucracy—not to mention the effects of wars and revolutions.

The arrival at St. Petersburg's international airport illustrated many of the problems the Soviets will need to resolve in order to achieve an economic transformation and compete at western levels. Among those problems are inefficiency, poor maintenance, and, perhaps, an over-reliance on things as they are—or are planned to be.

The arrival terminal itself was little more than a one-story, cement block building to which passengers were bused from their planes. Passport control went smoothly. Then you entered the baggage claim "gulag." Our flight arrived just after one from New York. Everyone crowded around a single carousel to grab their bags as they were unloaded. The Soviets haul huge suitcases, presumably stuffed with scarce items purchased during their travels. The exit seemed to be beyond crowds of people apparently funneling to one of three or four guards who are unhurried in their search through various bags.

Until our guides arrived and arranged a speedy exit for us, our progress in the lines was minimal. As we boarded our bus to the hotel, a band dressed in workmen's clothes set up nearby and played a selection of British tunes. They were after hard currency—American dollars, British pounds, German marks. At the time, US\$ 1 would buy about 32 standard rubles, at the official rate. For trade, a "golden" ruble was used, roughly equivalent to US\$ 0.58.

The currency situation encourages people to find ways to supplement their guaranteed income. A cheap fur hat sold to a tourist for US\$ 10 can equal a month's wages. In an odd sense, it fosters an entrepreneurial spirit and interaction with foreign visitors, but at a very elementary level. It also fosters bribery and a black-market mentality.

The ride into the city further exposed the pitfalls, and pot holes, with which the Soviets must contend. Stopped at a traffic light shortly after a light rain had begun to fall, a woman jumped out of her car to attach the windshield wipers. Because of problems of distribution and fear of theft, many Russians remove their windshield wipers and store them in the car when not needed. Increasingly, it's not just the windshield wipers that thieves take, but the whole car.

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Outside the Leningrad Technological Institute of Pulp and Paper Industry. Front row, L-R, **Sergey Shevchenko**, **Bo Fahlin**, **F. Keith Hall**, **Edward L. Akim**, **Brian W. Attwood**. Back row, L-R, **Matthew J. Coleman**, **Robert A. Olson**, **Thomas W. Joyce**, **Dale R. Dill**, **Ronald B. Estridge**, **Wayne H. Gross**.



Trams and electric buses are abundant in St. Petersburg. (Trucks and cars are predominant in Moscow. Both cities have superb subway systems.) Although efficient and well-used, the buses and trams of St. Petersburg were marred by rust. Although beautifully planned and built, the central area of St. Petersburg is dirty and in need of both repairs and fresh paint. Maintenance, in general, seemed an afterthought in many cases until something needed to be fixed.

For foreign visitors paying with hard currency, food seemed readily available at the hotels. Fresh produce was being sold at kiosks along the street and other food items filled at least some of the shelves in shops. But there was already concern about having enough food to get through the winter, because of limited supplies and high prices. Those who could were stockpiling what they could.

Just buying food was an arduous process requiring hours in line. Old women on pensions earned extra income by standing in line for those who had to work during the day. Spouses, friends, and neighbors might also take responsibility for standing in long queues.

In state-regulated stores, food was rationed. All staples required coupons. Each person was allowed 2 lb of meat per month. Selection was minimal and many shelves were empty. There was a greater selection, and no queues, in the free markets, but prices were 10 times higher.

While in St. Petersburg, the group visited the Leningrad Technological Institute of Pulp and Paper Industry, the S.M. Kirov Forest Technical Academy, VNPObumprom, the Krasnogorodsky Experimental Cellulose Mill, and the Vyborg pulp and paper complex.

Certainly, brilliant work is being conducted at many of the facilities in St. Petersburg. But members of the study group

Prof. Mikhail Y. Zarubin, vice rector, explains how some of the older equipment has been used at the S.M. Kirov Forest Technical Academy.





had concerns about the validity of research results because of the condition of equipment in most of the labs. In many cases, if it wasn't old, it was dirty or in need of repair.

Leningrad Technological Institute

The Technological Institute is the primary institution in Russia for training engineers for the pulp and paper industry, specializing in complex chemical processing of wood. Smaller institutes serve some of the more remote areas.

The Institute had about 5000 students, about half of them attending full-time. Most of the others were correspondence students who might come to the school for a month or two during the year to take exams. Faculty numbered about 300.

Courses lead to specialties in chemical technology, engineering specific to pulp and paper equipment, economics, energy problems, or automation.

The school has a special faculty to train engineers in environmental protection and ecology. The course takes about half a year to complete. Environmental issues have become a major concern that the Russians are trying to address.

The Institute has also offered international courses in environmental protection, in cooperation with United Nations and Finnish organizations. Participants in one such program, taught in English, spent two weeks in St. Petersburg and two weeks at the University of Tampere in Finland.

Research at the Institute has concentrated on such topics as high yield pulp, the rheology of pulp and fiber suspensions, low mass paper, organosolv pulping, the development of new materials based on cellulose. About 20% was being financed by the state, 80% by industry.

One project of special interest was the development of dry-

forming paper technology. Researchers had hopes of building a pilot machine in 1993 to test their theories.

The Institute is also developing cooperative agreements internationally in such areas as environmental protection and the rheology of fiber.

S.M. Kirov Forest Technical Academy

The S.M. Kirov Forest Technical Academy was founded in 1811 as the Royal Forestry Institute. Last year it employed 650 professors in 48 departments. Of 8500 students, 4000 attended full-time, 3500 were correspondence students, and 1000 attended evening classes. Students must pass exams in math and chemistry before they are admitted to the Academy. For every three applicants, only one is admitted. It then takes about five years to complete the course work, during which time students face as many as 57 exams.

Graduates used to be guaranteed jobs, but with the transition to a market economy, it's become more difficult to place students. The Academy is trying to make special agreements with mills and other institutions to help resolve that situation.

About half the research conducted at the Academy was being funded by the State Committee of Science and Higher Education. The rest was funded through direct contracts with other ministries and mills.

VNPObumprom

VNPObumprom, or the Scientific Research Institute of the Pulp and Paper Industry, has about 1000 employees. It has five main areas of interest: technology, new processes, ecology, new equipment, and process automation.

Buildings of the Krasnogorodsky mill complex



The Institute does projects for pulp and paper mills to help them solve various problems. The Soviet government had paid 40% of the cost, with the rest coming from the mills. A reduction in government financing has the Institute looking for ways to increase the number of contracts with mills. It's also trying to get the money to build a semi-industrial pulp plant.

Because consumers in the Soviet Union and Soviet Bloc countries had little choice in the goods they purchased, availability was more of a concern than quality. Consequently, research into improving the quality of paper processes and products has not been a priority at the Institute. The potential closure for ecological reasons of mills such as the one off Lake Baikal has been a concern, however.

To address ecological concerns, VNPObumprom has been experimenting with a totally closed water cycle in the production of unbleached kraft and board. They have also developed an oxygen pulsating system for pulping.

Krasnogorodsky Experimental Cellulose Complex

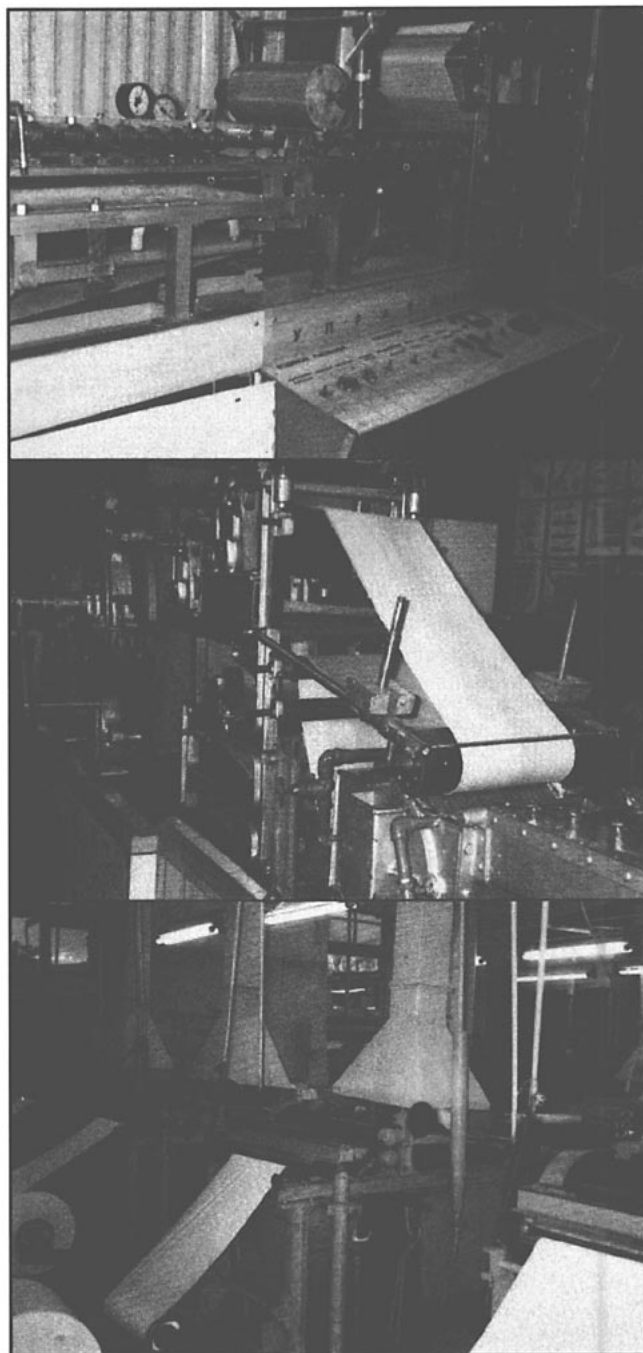
The Krasnogorodsky Experimental Cellulose Complex traces its roots back more than 275 years. Construction was started in 1714 under decree of Peter the Great. It is the oldest paper-producing enterprise in Russia. Consequently, the facilities are a mix of the old and relatively new.

Krasnogorodsky's primary function is to develop technology to produce technical paper—synthetic paper, metalized paper, coated paper—and then pass that along to other mills. The Svetogorsk and Bratsk mills use such technology.

The complex has four small papermaking machines that were largely idle because of shortages of materials. Officials there would like to totally reconstruct the complex and remove out-of-date equipment, but lacks the hard currency to buy high-quality papermaking equipment.

As with many of the enterprises in Russia, Krasnogorodsky is keen on obtaining investment partners from the West. Many of the mills and institutions see that as their salvation. What's needed as badly, it seems, is repair and modernization of equipment, establishment of preventive maintenance programs, training in management and business techniques, development of product markets and the infrastructure to support it, and a change in worker attitudes.

Experimental and small-scale paper machines at facilities in St. Petersburg



Svetogorsk and Vyborg

Plans originally called for the group to visit the Svetogorsk mill, located near the Finnish border, about 140 km northwest of St. Petersburg. That mill has a total pulp capacity of 345,000 metric tons/year. Its two paper machines can produce 220,000 metric tons/year of mainly printing and writing grades. Clearance to travel to that area was unavailable at the time, so the group visited the Vyborg Pulp and Paper Complex instead. (See related story, p. 119.)

(Reports on the group's visits to Moscow, Hungary, and Czechoslovakia will appear next month.)