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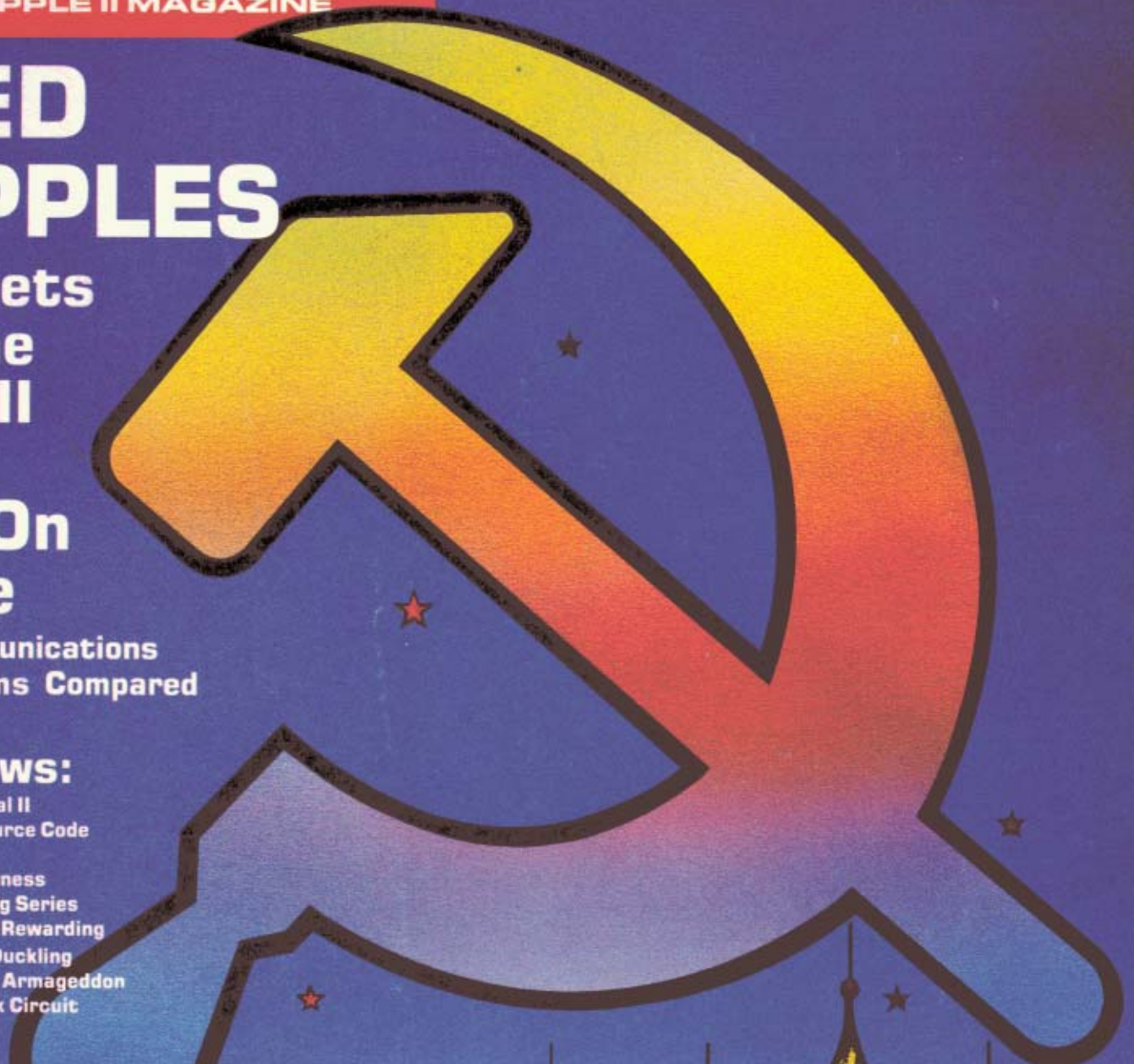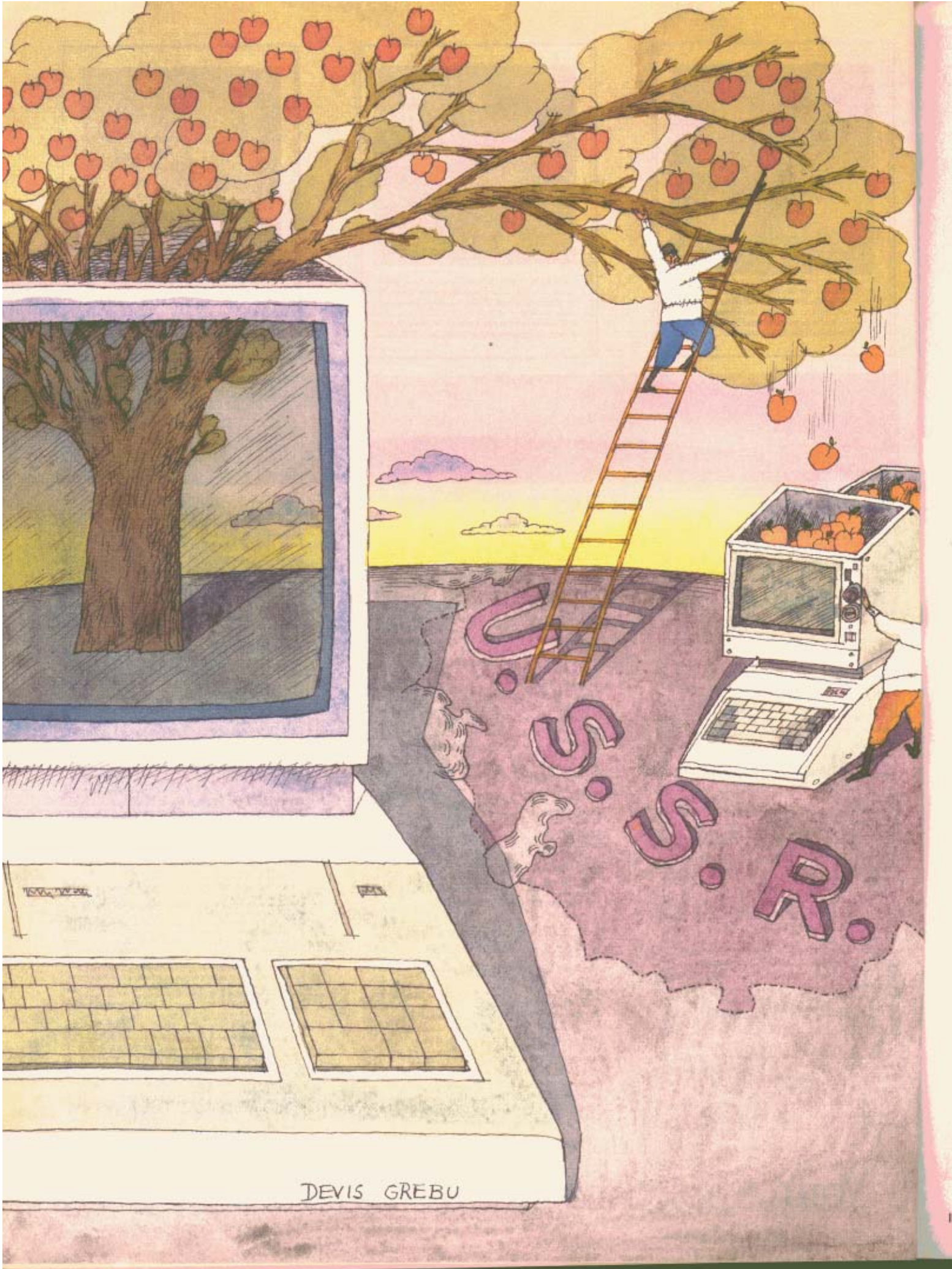# RED APPLES

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DEVIS GREBU

RED HOT APPLES

. . . or How We Learned to Stop Worrying

and Love the Pravetz

JUST OUTSIDE THE ANCIENT CARAVAN city of Tashkent stands a late-20th-century symbol of the changing face of East-West relations. Where trade routes once crisscrossed the desert, technological equipment and know-how are now bartered: Half a world away from Silicon Valley, a Soviet computer plant is assembling a machine called the *Pravetz*—an Apple IIe clone.

The company, known as Variant, is a joint venture between Bulgaria and the U.S.S.R. At the factory in Tashkent, some four hours by Aeroflot jet south of Moscow in the Soviet republic of Uzbekistan, computer parts shipped in from Bulgaria are assembled, tested, packed, and sent out in groups of ten to schools across the Soviet Union. The computers are purchased by the Ministries of Education in the various Soviet republics.

Variant offers schools an entire array of services—instruction (there's a classroom where students and teachers can learn to use their machines), support, software development and distribution, repairs, and a seven-year warranty.

Variant rents the top floor of a three-story building that was planned as offices, and workers must make do with the limited space available. The interior is shabby and drab; the only bright spots are the omnipresent posters of Lenin exhorting his people to greater efforts and Soviet glory. There's no assembly line; workers move computers from room to room by hand, resulting in much congestion and frustration. The desks of Variant's software developers are littered with glasses of tea and mineral water; almost everyone smokes cigarettes, and they smoke everywhere.

ACROSS THE BLACK SEA

For Bulgaria and the Soviet Union, former enemies now joined in the uneasy alliance of the Eastern bloc, the bureaucratic problems involved in sharing technology were indeed formidable. Today's Pravetz computer has been eight years in the making. ▶

By ALAN R. MARTIN

Left to right: Vladimir Fedorov of Lidar; author Al Martin; Jacob Tastkin, software-products director; and Inna Grebneva, Martin's interpreter in Uzbekistan.

Variant's screen logo—Cyrillic version, of course. The Pravetz also supports the Roman alphabet.

In 1982 the only decent personal computer available anywhere behind the Iron Curtain was an Apple II Plus clone. The Bulgarian Academy of Science Institute for Robotics and Cybernetics then developed a IIe clone that supported the Cyrillic alphabet and named it the *Pravetz*, after a small village where one of Bulgaria's presidents was born. Some 10,000 units of the Pravetz 82 were built (without benefit of a license from Apple).

In 1984 the leaders of the Bulgarian military decided to computerize the management of the armed forces. Using the utility programs Copy II and BugByter—and no documentation—a 17-year-old soldier from the nuclear-physics department of Sofia University figured out in just six months how to adapt AppleWorks 1.0 for the Bulgarian language and the Cyrillic alphabet. United States copyright law was ignored—the usual practice in the Eastern bloc.

With the help of five friends in Moscow, Vladimir Fedorov, a physicist at the U.S.S.R. Academy of Sciences, learned how to use the Pravetz to run his laser-based pollution-tracking system. The success of his project led to the formation of Lidar, a for-profit research and equipment vendor set up by the Academy of Sciences.

Camping Out in the U.S.S.R.

Holly Jobe, coordinator of technology services for Montgomery County, Pennsylvania, and five American students returned recently from six weeks at a Soviet computer camp located 2½ hours by jet north of Moscow. She reported at the Florida Educational Technology Conference in February that "there are very few computers in the U.S.S.R.," but that we Americans "are not necessarily 'ahead.' We do have better hardware and software— but we also have a lot to learn from the way [the Soviets] do things."

Perhaps because of a lack of equipment, students at the International Computer Camp's "Robotland" spent "a tremendous amount of time *off* the computer," despite the name of the camp, Jobe says. "The focus was not on the technology, but on problem solving" using computers, she adds. The young American and Soviet campers worked on algorithms for the Knight's Move, the Towers of Hanoi, the Ferryman's Dilemma, and Black Boxes—all classic problems in logic and mathematics.

The "game" of Black Boxes, for instance—creating a mathematical function that converts one number (the input) to another (the output)— revealed to Jobe an interesting difference in the styles of the Soviet and American students. Shown a sample black box that changes 2 to 4, 3 to 6, and 12 to 24, "the Soviet children mimicked what they had seen," creating black boxes that also multiplied the input by a constant. The Americans,

Jobe says, "were more creative."

But Jobe's Soviet experience made her think that "sometimes we [Americans] have too much—we become enamored of our gadgets. We could take a page from [the Soviets'] book and focus back on the curriculum, and identify where technology fits well."

Jobe encourages everyone to visit the Soviet Union. "This is an especially vital time there," she notes, "and the Soviets also have a great deal to teach us about using computers in schools." For information about the Robotland project, Jobe suggests writing Director A. Alimazon, Academy of Sciences Institute of Software Development, International Computer Camp, Peresalvli-Valesky, U.S.S.R. ☐

—*Paul Statt*

A look inside the Pravetz, the only II clone that features built-in slots like the Apple II.

In the "Variant Classroom of Tomorrow" in Tashkent, the ratio of students to computers is 2 to 1—a far cry from the ratio in the rest of the Soviet Union (or the U.S., for that matter).

Abram Magarshak, Lidar's director general, estimated that the company could make a profit by selling just ten computers a year at a total price of 800,000 rubles (approximately $128,000 U.S., although there's no official exchange rate). The Pravetz, however, was available only in Bulgaria; that country's currency, the *lev*, isn't convertible. The Bulgarians refused to fill such a small order. Because the Pravetz was necessary to fulfill the contracts, Magarshak offered to purchase the ten computers at greatly inflated prices, with the payment to be made from the profits of the contracts. The Bulgarians turned down that offer, too.

To pay for the computers, Lidar's director then proposed to form Variant, an organization that would assemble the Bulgarian parts in Tashkent in Central Asia, for sale to schools throughout the U.S.S.R. The Bulgarians would invest the parts, and Lidar would pay the salaries of the workers, locate the space, and take care of all assembly, distribution, and education through Variant. Fedorov jokingly calls it "a screwdriver plant—we screw the product together. We sew the label on the product."

Proposing such an organization was easy. Making it work wasn't. A whole array of logistical, political, and bureaucratic hurdles blocked Variant's path. For example, various Soviet ministries, including trade and education, blocked the incoming supply of computers; they didn't want to jeopardize their relationships with computer suppliers in Czechoslovakia and Poland, even though those computers were of inferior quality.

Another problem was that Variant needed permission to do business from the same ministers who had blocked the importation of the computers in the first place and had even tried to prevent the establishment of the company. Variant was closely associated with Lidar, however, and Lidar's roots are deep in the U.S.S.R. Academy of Sciences, an institution with a great deal of power and authority. As in the United States, knowing the right people can open many doors. Despite its problems getting off the ground,

Variant showed a profit after one year and established a model-education project in Tashkent—a "Variant Classroom of Tomorrow," so to speak.

The Pravetz is now facing some stiff competition, however. Fedorov says 15,000 Pravetz computers are used in Soviet schools, although "that's a small drop" among the 2 to 3 million machines needed. Although Tashkent, a city of two million people, is the capital of the republic of Uzbekistan and the industrial center of Soviet Central Asia, Variant was able to get permission to put its computers into Uzbek schools because the area is considered provincial, according to Fedorov. In Moscow, Leningrad, and Kiev, he says, IBM clones are in demand for schools and businesses. In addition, says Dmitrii A. Koryagin, head of the Department of Physical and Mathematical Sciences at the U.S.S.R. Academy of Sciences and a member of the International Computer Club (ICC), developers in the U.S.S.R. have also produced Soviet computers that use their own operating systems and hardware.

OPEN WINDOW ON THE WEST

Trade with the Soviet Union can be extremely profitable if U.S. companies keep in mind the problems of nonconvertible currency, the restrictions imposed by that nation's immense bureaucracy, and language and cultural differences. One difficulty the Soviets are addressing currently is the issue of copyright. Variant and other new joint ventures in the Soviet Union now adhere strictly to U.S. copyright laws; for that reason, the Russian version of AppleWorks isn't distributed. Throughout the Soviet Union, however, a thriving black market deals in many products, including pirated software from the West, although such programs are often plagued with viruses.

As Mihail V. Mishustin, an official with the International Computer Club, explains, "We want to show our people, especially professional people, the power of modern Western technology. The problem is it's difficult for us to deal ▶

Better Red Than Dead?

What's the first North American Apple II software developer to sell products in the Soviet Union?

Claris? Wrong—although pirated copies of AppleWorks abound. Beagle Bros? Good guess, but wrong again. It's not Broderbund, Scholastic, Davidson & Associates, or Timeworks, either. In fact, this company isn't even based in the United States.

Give up?

It's Micol Systems, the Toronto-based publisher of programming languages for the Apple II line. Micol may not be a household word to the average Apple II user, but the small company—even by Apple II market standards—is no newcomer to the II world. Formed more than seven years ago by Steven Brunier, president, and Ron Lewin, marketing director, Micol Systems has emerged as the BASIC-language leader for both 8-bit and 16-bit Apples.

According to Lewin, a Russian edition of Micol Advanced BASIC (the Apple IIe/IIc version) should be available in the Soviet Union by early September.

Lewin and Brunier are working with Vladimir Fedorov of Lidar, the company that will produce the Russian version of Micol Advanced BASIC. Acting as a "middleman" of sorts is the International Computer Club (ICC), which Fedorov describes as "a big consulting firm" for both Soviet and foreign companies. Fedorov is a founding member of the ICC and president of Lidar, a company that makes environmental monitoring systems that use the Pravetz computer, an Apple II clone

manufactured in Bulgaria and Uzbekistan by Variant. (See the accompanying story.)

Lewin says he expects the price of Micol Advanced BASIC to be 125 rubles (approximately $20 U.S.); the final decision is Lidar's, however. One difference in the way software is sold in the Soviet Union is that the 125-ruble price tag is final for everyone—no discounting. "What's called 'business' in the United States is called 'speculation' in Russia and is illegal," Lewin notes.

Selling software in the Soviet Union is no simple proposition, so what problems do Lewin and Micol Systems expect? "I don't know," says Lewin. "I honestly don't know. The conversion to the Cyrillic alphabet isn't hard. Translating the manual isn't hard. I imagine the biggest problem is the bureaucracy. It's tough to get paper and disks, and it can take months to get anything printed."

Even if Micol Advanced BASIC leaves them dancing in Red Square, there's still a problem: What does a Canadian company do with all those rubles? Unlike other currencies, such as the dollar, the franc, the yen, and so on, the ruble is worthless outside the Soviet Union.

"You can convert rubles to dollars," Lewin says. "However, the Soviet government sets the exchange rate, which isn't realistic or favorable." The government inflates the ruble to make the Soviet economy seem more stable to the rest of the world, he explains.

Micol doesn't necessarily want to take the rubles out of Russia, however.

"We're thinking of hiring Russian programmers to produce software for future projects," says Lewin. The pool of programming talent in the Soviet Union is reportedly deep. As Fedorov explains, the problem with information technology in the Soviet Union isn't "how to"—it's "what to do with it."

That's why one of the priorities for Fedorov and the ICC's Mihail V. Mishustin, who recently visited Toronto along with Dmitrii A. Koryagin, a professor of physical and mathematical sciences at the U.S.S.R. Academy of Sciences, is to help companies such as Micol reach Soviet consumers, as well as educate Soviet citizens on the possibilities of information technology. For example, Mishustin and the ICC run a twice-monthly television show designed to teach children about computers.

Fedorov and Mishustin are laying the groundwork for U.S. and other foreign companies to reach the Soviet market through activities such as the International Computer Forum scheduled for June 14–17. (See "Moscow Nights," What's New, April 1990, p. 19.) So far, Atari, Commodore, Digital Equipment Corporation, and the Software Publishers Assocation are among the companies signed up for the conference. You can even expect to see an *inCider* editor or two wandering around Moscow.

A Bulgarian Apple II clone—a Russian version of Micol Advanced BASIC—a thirst for Apple II software. Maybe it's time for Apple II enthusiasts to head East.☐　　　　—*Dan Muse*

with software, because we don't have the laws about copyright. To prepare the Soviet people for computer technology, the ICC has to teach them about copyright." Fedorov says the ICC has asked the Soviet government to adopt piracy laws. (For more on the ICC, see the accompanying sidebar "Better Red Than Dead?" plus "Red Apples," What's New, November 1989, p. 16, and "Moscow Nights," What's New, April 1990, p. 19.)

What happens next? Will the Soviet Union's talented programmers and technical experts become a valuable source of new Apple II software and hardware design? The

answer to that question may become increasingly important to the 5 million II owners in the U.S. who are fed up with Apple's indifference and the shrinking number of Apple II software developers in this country. The U.S.S.R. has opened a window, and East and West are taking a fresh look at the technological opportunities that lie ahead.☐

AL MARTIN IS PUBLISHER AND EDITOR OF *THE ROAD APPLE*. WRITE TO HIM AT 1121 NORTHEAST 177TH, SUITE B, PORTLAND, OR 97230. ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A PERSONAL REPLY.