

Computer And Schoolchildren

—Eduard Alesin

Q. Who attend your school and what trade do they learn?

A. We have over 1,000 pupils from 12 general education schools of the district. They are senior pupils 9th and 10th formers. For two school years they come to us once a week the former for 4 hours of classes and the latter for six. On this day, naturally they have no classes at school.

We offer them six trades: a computer operator programmer adjuster of electronic equipment operator for economic work; electrical mechanic for repairs and maintenance of computer peripherals and operator of data preparing devices. A team of our graduates can fully service any computer—of course, under the guidance of engineers.

Q. How is training organized?

A. We do not prepare 'labourers' for computer but do our best to give these school students a broad theoretical knowledge and to rouse their interest in computing equipment. For example, a machine operator can be trained in a month—taught to push definite buttons in a definite situation. But such a kind of work may become tedious to the operator a month later. It is necessary that schoolchildren should know the device, the 'stuff' of computer, and how to intelligently handle it. Then the job inspires them. This is why we give future operators a course of programming and handling measuring equipment. A competent

The major school reform undertaken in the USSR envisages, inter alia, the introduction of computer and microprocessors in the sphere of direct training and the preparation of workers to handle this equipment.

Over 300 training and production centres engaged in this effort already function in the country now. Tatyana Kravchuk, director of one of them, which has for ten years been successfully functioning in Moscow, talks to an APN correspondent.

operator thus; may 'correct' the programmer; notice an error in the latter's programmes. Besides that; knowing the design of the main computer units, he can monitor them with the aid of measuring instruments.

Future programmers, in their first year of training, also look at computer design, have calculus classes and then begin to study the most widespread machine languages—Fortran, Algol, Assembler. We don't have purely theoretical or purely practical classes. A lesson is always combined in this sense. For this purpose we have special classrooms and laboratories where each pupil is assigned a working place. Thus, 12 video display units linked to computer are installed in one of the classrooms. The fast-acting machine can 'talk' simultaneously with all the display screens. Therefore no one waits for his turn all are working

throughout the lesson.

We attach much significance to microprocessors in our training for all the trades. Microprocessors nowadays penetrate into every field of activity. We are planning to introduce instead of 'computer operator' a broader speciality—'operator of microprocessor equipment'.

All the school students take an obligatory two-week course of practical training in computer centres. They act there as stand-bys for operators compile individual sections of programmes and help to monitor equipment.

In all this we are helped by our patrons—the headquarters Institutes of Electronic Control Machines and the Problems of Information Science of the USSR Academy of Sciences.

Q. What is their role?

A. First of all; they provided and helped to adjust the equipment of our classrooms and la-

boratories, which, by the way, cost over 1.5 million roubles. Now this equipment is being updated with the progress of such technology and the methods of training.

Most of our instructors are also from the institutes. They are engineers who have shown an ability for pedagogical activity. They remain on the staff of their research establishments and thus are in the know as regards their work on new equipment. By the way every 5 years the instructors take retraining courses in advanced training institutes for teachers.

Both our patrons are the country's leading institutes in their field. Prominent scientists work at them, and they often visit us. The director of the Institute of the Problems of Information Science, Boris Naumov, a corresponding member of the USSR Academy of Sciences, has more than once addressed the schoolchildren. Doctor of Physics and Mathematics, Alexandr Brudno is in charge of the methodological association of programmers. The scientists and instructors are anxious to introduce the pupils to the science of the future.

Q. You have spoken about the required training courses. Are there, so to say, 'above-plan' programmes?

A. Every fifth pupil deepens his knowledge in various optional disciplines. One, for example is machine languages. When (See page 8)

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young people with particular gifts appear, this becomes evident very soon—some master the two-year programme in two months. Such schoolchildren are invited to the institutes; on the day of classes they perform concrete tasks there, and often just simply come there after school.

At least a half of our charges are engaged in technological innovation. They enjoy maximum independence here. The only requirement is to show the instructor the scheme of a device. At present, our students' enthusiasm focuses on amplifiers and colour music devices for the home; many participate in fitting out school radio centres and rooms for physics.

Q. And what after the completion of the training and production centre?

A. At the end of the tenth, last class of school (later it will be the eleventh class—after the school reform), pupils take a qualification examination. After receiving an appropriate certificate they can begin work in one of the numerous computing centres of Moscow which send us manpower requests.

By the way; the number of requests always exceeds that of graduates.