

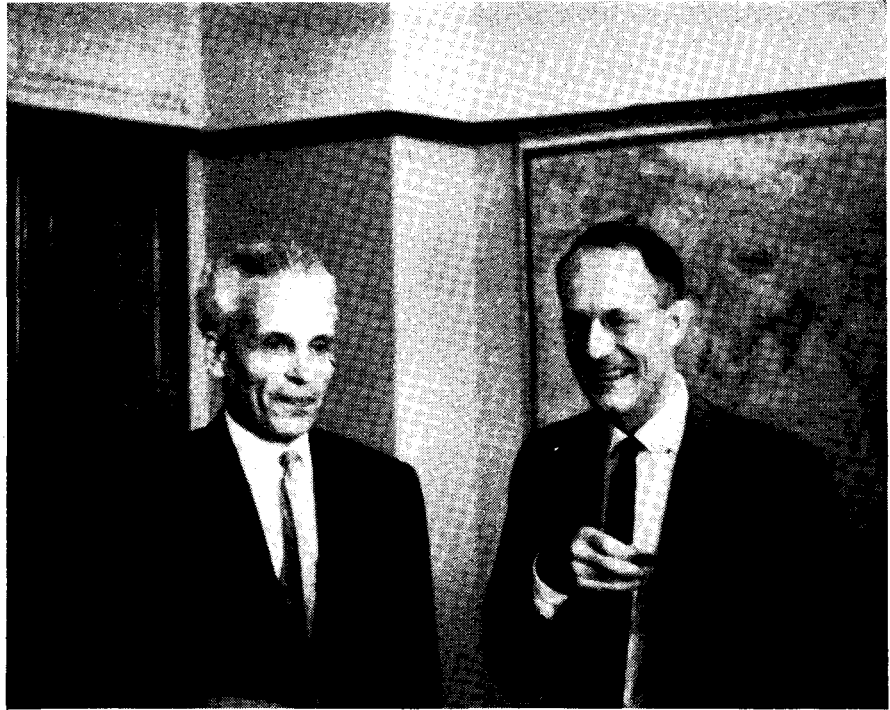
HUMAN CAPITAL: A GROWING ASSET

By T. W. SCHULTZ

THERE IS a growing awareness among economists that useful skills and knowledge that people acquire are a form of capital. It is convenient to think of it as *human capital*. Investments in man that contribute to the formation of this kind of capital have become very large in some countries, exceeding the rate at which conventional capital has been formed. The rise in the stock of human capital may go a long way toward explaining the widely observed large increase in national output compared to the small increase of the continued inputs of land, man-hours, and other capital.

A much-neglected aspect of Soviet economic growth is the amount and rate at which the quality of human effort entering into economic activities has been improved. In the Soviet, members of the labor force in industrial plants—skilled and unskilled, technicians, engineers, and directors—work hard. Many of them also put in long hours studying to improve their capabilities. It is the intensive pace at which they work that is impressive, not the length of the day or of the work week. When it comes to training and study programs, it is the proliferation of such programs and the stress that is put on them that stand out. Moreover, this part of the labor force appears to be motivated both to speed up its work and to study to improve its position.

It is, of course, extremely misleading to think of labor as homogeneous, and this is especially so of labor in the Soviet. I shall concentrate here on industrial labor in plants making producer and consumer goods, for it is the skill of this part of the labor force that represents one of the Soviet's major achievements. These workers are the cream of the crop; moreover, they are moving ahead rapidly. Training programs, hours spent in studying, and better and more education are no doubt a part of the explanation, and the rapidly growing demand for their industrial skills is also an important factor. Then, too, the Soviet system is strongly bent in their favor. Even so, it is hard to believe that the differences in labor productivity among workers in different "sectors" could have become as large as they are. In contrast



The author, right, with Mr. Podugolnikov of Gosplan.

to the relatively high labor productivity in the part of industry under discussion, the productivity of labor in agriculture is unbelievably low, as is the productivity of the women who can be seen sweeping streets and shoveling gravel and asphalt to patch or build roads. I suspect that the "normal" lag of adjusting to rapid industrialization has played a minor role in creating these differences. The primary reason for this "economic isolation" of one labor group from another has been a consequence of Soviet plans.

In the pace of work and the amount of self-improvement in this industrial sector, we may have a key to a major puzzle about the Soviet economy. This puzzle, stated simply, is as follows: How has the Soviet managed to win so large an increase in production despite the poor performance in agriculture (which still accounts for nearly half of the labor force), the substantial mistakes that characterize the allocation of physical capital, and the long neglect of consumer goods?

The Soviet has organized its agriculture so that there are millions of plot-dwellers, each restricted to a small parcel of land with only primitive

equipment and hand labor to farm these plots. The mistakes in the allocation of physical capital in industry are more difficult to detect than are such developments in agriculture. Notwithstanding the strong pragmatic bent of those who plan and administer the formation of this new capital, both the nature of the organization and the doctrine that capital does not require an "interest rate" to match its productivity to guide allocations take their toll.

Energy from hydroelectric installations has been pushed too far and too long compared to electricity from coal; and both of these were favored too long before turning to oil and natural gas. Heavy investments in the electrification of a long railroad, instead of the use of diesel locomotives, is also a case in point. Too many trucks are carrying a few sacks or poles or are being driven about empty; and, not infrequently, there are three expensive cranes in use in building an apartment house where one crane would be a more efficient use of such capital. Moscow's ornate subway and also the elaborate hotel in which we stayed while in Moscow are monuments of wasted capital.

The puzzle arises from the fact that

in spite of these not unimportant adverse factors, the rate of growth of the Soviet economy has not been small. It is of course true that if total investments are large enough they can swamp the effects of many allocative mistakes. Large investments, however, cut down on the flow of goods available for current consumption, and this, coupled with the long neglect of quality and assortment in consumer goods, must have impaired over-all incentives to work. The missing piece in this puzzle, it seems to me, emerges out of the vast amount of training that has taken place and the advances in education. Both of these have served to satisfy particular preferences in consumption. Both have also contributed much to the rapid rise in the capabilities of the main industrial labor force, making it more productive. Counting all inputs, labor is quantitatively larger than all the rest of the inputs together. A marked improvement in the quality of the labor input, therefore, could be exceedingly important in achieving economic growth.

The improvement of capability is one of the major tenets of Soviet ideology. It is clear that this tenet is firmly held when it comes to making the labor force more effective in doing

the kinds of skilled work required to operate a technically advanced economy, and also when it comes to making a people aware of and appreciative of their past cultural attainments. This tenet, however, would appear to rule out some types of qualities in man, namely, the development of a faculty for the critical evaluation of doctrines and the creative talents in the fine arts. Individual Russians, when pressed, tell one that this has been happening only because of "practical considerations" pertaining to the winning of an industrial base, economic growth, national power and "security," which have until now been so demanding that there have been neither resources nor room for the many highly talented Russians who wanted to make their contributions in the arts. Criticism of fundamental doctrines, a central part of university life in Western Europe and the United States, invites social disturbances that Soviet ideology will not tolerate.

THUS, up to a point, the support that Soviet doctrine gives to improving the quality of human effort contributes much to the task of achieving economic growth. National health programs fall into this class. Education rates very

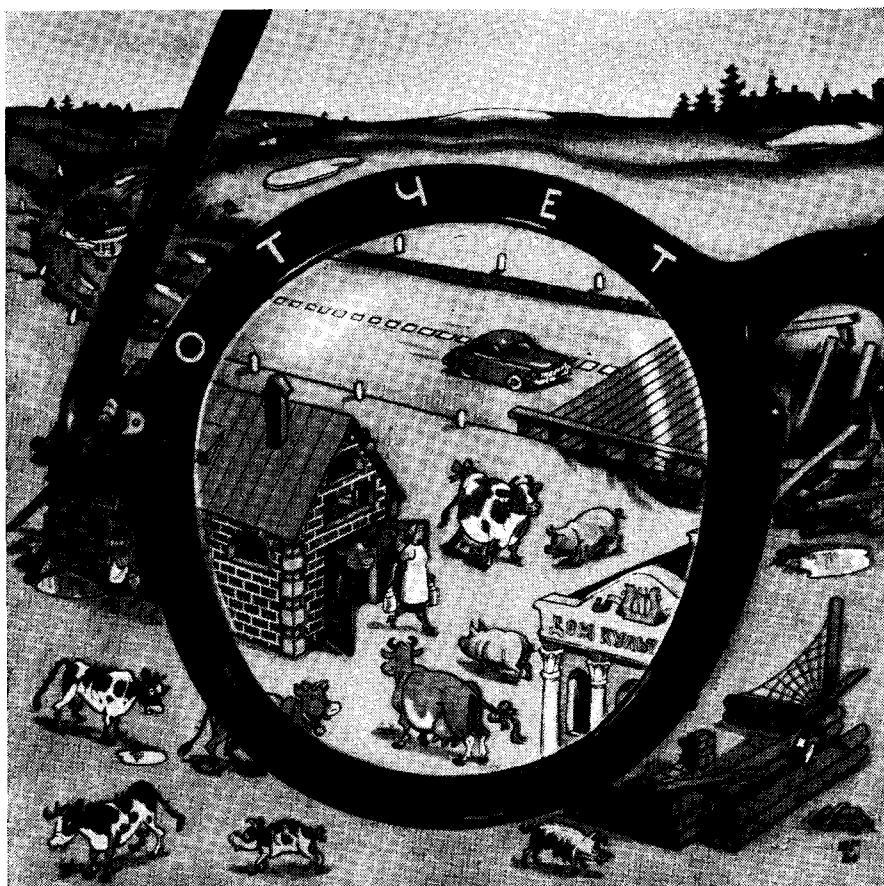
high on this score. On-the-job training and all manner of study programs in and about industrial plants are in this category.

There are obvious signs that suggest that self-improvement is rated high by many people. Where people happen to stand in line waiting to be served, perhaps one in five will be reading a book; so do many while they are riding a bus. Serious books are abundant and inexpensive. In plant after plant, whenever a question was asked that provided even a faint excuse, we would be told with obvious pride and sincerity about the provisions that the particular plant had made for training and study programs to improve the capabilities of workers at all levels.

Soviet ideology has given rise to many doctrines that serve as rules for conduct and social control. Such doctrines abound in economic affairs. Some of these have been the negative; for example, marginal analysis, interest, and rent are deemed to be mere capitalistic instrumentalities. But the Soviet Union cannot hide all of the mistakes it has made as a direct result of its neglect of these particular economic tools. On the positive side, Soviet ideology has no doubt greatly strengthened the belief that it is important to improve the quality of human effort. This aspect of their ideology may also be treated as a doctrine having particular cultural and economic implications. However critical one may be of the cultural component, it results in rules of action that expand the rate of investments in human beings, investments that improve the capabilities that are useful in economic endeavor. Accordingly, this part of Soviet ideology may serve them well indeed; it would appear to give the Soviet a substantial economic advantage over most of Western Europe in improving the quality of the labor force. Although the United States has done much better on this score than has Western Europe generally, our achievements in improving human capabilities are not so much a consequence of economic insights or motives as of the fact that our political democracy serves a widely based electorate, and the belief that education for all people is essential if our form of government is to function successfully.

No doubt there are several reasons for the eagerness of people in the Soviet to acquire knowledge and skills. Traditional attitudes have been favorable; Soviet ideology has encouraged it; and material incentives have acted as a strong inducement, as have expanded opportunities for social mobility.

It is by no means easy, however, to see clearly the incentives to work and



—Krokodil

"Optical Illusion"

This cartoon by Soviet cartoonist Y. Gant satirizes the practice of submitting so-called eyewash reports to exaggerate the beauty of farms. The eyeglasses are labeled "Report."

improve one's capabilities even in one's own society, much less in a society as different as the Soviet. Forced labor, which until very recently must have been a large component in the Soviet, is far removed from the inducements of normal economic incentives. The persecution and political uncertainty facing millions of farm people in their efforts to win some additional income from their plots have beset them with serious negative incentives, do what they may. Nor do these two exhaust the groups of people in the Soviet who have been deemed to be socially undesirable and who have been penalized, if not eliminated. Surely no casual observations can detect the role that coercion plays in enforcing labor discipline. The 1956 decree should have improved the status of workers, but in practice this decree may not have put an end to the use of coercion in maintaining labor discipline. There still may be serious penalties for unexcused absence from work; social security benefits may be manipulated, and economic pressures to keep workers from leaving one job may still be enforced. Every worker presumably must have a "labor pass book," which could readily serve as a serious coercive device. Then, too, how can one assess the effects of long neglect and the recent improvements in consumer goods upon incentives to work?

Nevertheless, I would venture the view that, for the main stream of industrial workers, Soviet planners and administrators have been outstandingly successful in developing a system of incentives coupled with state assistance to induce such workers at all levels to improve their capabilities. Thus, in improving the quality of human effort—an exceedingly important aspect of economic development—it is altogether possible that the Soviet is doing well indeed and that we might very well gain useful insights from the country in this connection. This assessment may seem paradoxical, for it implies that in bringing such incentives to bear the Soviet has been more orthodox than we have been in applying particular "dictates" of classical economics.

THE incentives of labor discipline to "induce" an intensive pace of work are obvious in the sense that they are geared to piecework. The vast majority of the so-called production workers in the plants that we saw were paid on a piecework basis. For the administrative personnel, including technicians and engineers, although they receive a salary that is relatively small, there are many types of bonuses that they earn for specific performances above established norms, and thus they too

can substantially enhance their total earnings.

The incentives to improve one's capabilities by participating in one of the many study programs consist of various amounts of time off to study, with pay and related assistance. More important still are the promotions, entailing an increase in pay, that go to those who successfully complete such study programs. Nor have these incentives been rigid; on the contrary, they seem to be fairly flexible in meeting changing supply-and-demand situations affecting the value of labor.

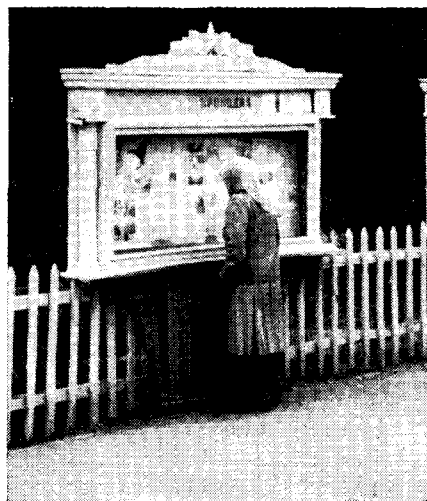
Several other observations need to be made to place the discussion in perspective. Among them is the fact that, although elementary education is compulsory in the Soviet Union, it is still very uneven. It is much better in urban centers than in most of the countryside because of differences in quality of teachers, in the number of days children attend school, and in number of years they attend. While more than half the population is classified as rural, it accounts for only about two-fifths of those persons who have completed the elementary school and one-fourth of those who have completed the equivalent of our high school. These differences are a major obstacle to the movement of rural people to the cities and to access to the better jobs. Why more is not done to assist a larger number of farm workers to transfer to urban areas and enter the industrial labor force is hard to understand in view of the active part the state is prepared to play in other respects.

Another development that is frequently out of focus in what is being said and written about Soviet education in the United States bears on Soviet secondary education. While it is true that there has been a rapid expansion in the number of students enrolled, from 1,500,000 in 1950-51 to

fully 5,000,000 by 1954-55 (but down somewhat since then, to 4,200,000 in 1958-59), less than one-half of those of high school age (fourteen to seventeen) are in school, compared to nearly nine-tenths of such persons in the United States. The United States labor force is already well stocked with persons who have attended high school; over 30 per cent of the labor force has completed four years of high school, (another 20 per cent has had one to three years in high school). In the Soviet, if one assumes that *all* those who have completed secondary school, and are not attending universities and institutes, are in the labor force, they comprise about 9 per cent of the labor force. Employers in the United States have access to a labor force with much more education than do directors of enterprises in the Soviet Union, and this difference no doubt has a bearing on the amount and kinds of training programs that the Soviet is engaged in to speed up its industrialization.

IN plant after plant we obtained information on programs under way to improve the capabilities of workers. Some of these were for engineers, technicians, and directors who as a rule had not only completed a secondary education but also had had some years at an advanced institute (college-level instruction). Other programs served those who wanted to complete their secondary education. Most of the workers who participate in such programs, however, were doing so largely on a part-time basis during off-hours or through correspondence courses. Their training and study may be closely akin to our on-the-job training. Our observations, unfortunately, were not sufficient to form a basis for any useful comparisons. Moreover, even if our observations on the nature of what is accomplished in these in-plant technicums had been more complete, very little is known about the amount and scope of on-the-job training that is underway in the United States.

The unevenness of elementary education, the small proportion of the members of the labor force who have completed a secondary education, and the possibility that most of the study programs in the Soviet plants may be closely akin to our on-the-job training do not alter the fact that the Soviet has been rapidly improving the capabilities of the main stream of its industrial labor force. Soviet ideology strongly supports this objective; the people of Russia value education and self-improvement highly; and Soviet planners and administrators are notably successful in pursuing this important objective.



Reading "Krokodil" in Park of Culture and Rest, Kharkov.

STORM SIGNALS FOR THE WEST

By HANS HEYMANN

THE preceding survey shows that large and important areas of weakness exist in Soviet economic management, weaknesses that are deeply embedded in the Soviet system. The elements of waste, of over-standardization, overcentralization, the unresponsiveness to demand, and the obscurity of criteria all add up to a highly critical appraisal of Soviet economic management.

What worries me is that I find all of this appraisal coinciding strikingly with the impression I formed on my most recent visit to the Soviet Union; and whenever I find such close coincidence I become a little worried.

Our group of air transport specialists formed, if anything, an even more overpowering impression of Soviet clumsiness, shoddiness, and waste in the area of civilian aviation, which after all is not so very far removed from the high-priority area of military aviation. And we ended up by asking ourselves: "Is this the phase of the system that pretends to rival us in open competition on the world scene, that will outproduce us and outperform us?" It did not seem conceivable. And this is where I would like to introduce some special caveats.

It seems to me that there is something inherently distorting in the very nature of exchanges of technical delegations, especially so far as U. S. visits to the Soviet Union are concerned, because they tend to accentuate the negative evaluations.

One cause of this may be the defensive psychological reaction we experience when we are plunged into the austere, drab, and uncongenial Soviet environment, which openly challenges our institutions and our values. We respond by vigorously justifying and defending our own institutions, and in the process we tend to blunt some of our critical faculties regarding our own institutions and become excessively sensitized to every Soviet deficiency. We certainly experienced this phenomenon on our aviation tour.

To a man, we marveled at the irrationality of Soviet investment policy in providing a vast armada of transport aircraft to serve a mere trickle of

scheduled flights. Where Aeroflot requires 250 aircraft to do its meager job, we could have done the same job with perhaps 75 or 100 aircraft. But few of us recall the peculiar nature of our own irrationalities in aviation, the hothouse economic environment in which civil aviation operates in this country, and the very questionable multibillion-dollar investment decision that plunged us into the jet age at the very moment when the four-engine piston airplane had only begun to come into its prime. Clearly waste and irrationality are not exclusive qualities of the Soviet economy. But it is difficult to remember this while you are there on the spot, extolling and defending U. S. institutions to the hilt.

There is the constant temptation to compare Soviet reality not with U. S. reality but with our own mental image of U. S. reality—a market-oriented free-enterprise textbook model of the U. S. economy—and this temptation is difficult to resist.

BUT there is an even more important way in which the technical exchange visits may impair our sense of perspective. It is the lack of opportunity to make comparisons over any substantial length of time. Inevitably, the visitor is afforded only a snapshot view of the society, leaving out of account the dynamics of the situation which may so importantly affect our judgment.

Again our transport tour proved instructive in this regard, since it turned out that I was the only member of our group who had been to the Soviet Union on a previous visit. While my fellow travelers' major reaction was one of shock and dismay at Aeroflot's cavalier attitude toward the convenience of the passenger and its indifference toward the more sophisticated concept of flight safety, I was struck by the enormous progress that had been made since my previous torture four years earlier. Then cold-oil take-offs and hedgehopping in two-engine piston aircraft were the order of the day.

Now there is a nation-wide radar-monitored air traffic control system, and there are many shiny jets. Passengers are still inconvenienced, and efficient service is apparently a concept unknown to Aeroflot, but there are now 25,000,000 passengers per year who

brave these hardships, as compared with only 5,000,000 four years ago. It is clumsy. It is unsophisticated. It is inefficient. It is irrational. But somehow it is putting out the work. There is change. There is progress. There is growth on every side. But one must introduce the dimension of time into the equation to see it.

I am not arguing that the deficiencies, the weaknesses, the internal conflicts facing the Soviet economy are not important, that all that counts is results. Past results, impressive as they are, are not all that matter. To the extent that we are concerned with the future, we cannot ignore the vital question of the ability of the Soviet economy to grapple with its problems, to adapt itself and to transform itself.

The search for more effective organizational forms that is going on in the Soviet Union today is now of much greater significance to the performance of the Soviet economy than it once was. At one time there may well have been some logic to the crudities that have so long characterized Soviet planning. The more the economy approaches maturity, however, the more glaring do the evidences of waste become. And the Soviet state, whether it wants to or not, must try to transform itself from a mere taskmaster exacting maximum effort to something more akin to an efficiency expert seeking organizational flexibility and economic common sense.

HOW well has this transformation progressed so far? The preceding reports show, it seems to me, that the progress has been too slow. What we see is a very gradual tendency to restrict the role of pure arbitrariness in economic decisions, some elimination of the most glaring examples of irrational pricing, and some success in creating slightly better order at the micro-economic level. But there is resistance all the way and no sign so far of a willingness to face up to the full requirement of reform.

It is too early to say, however, that fatal rigidity and hardening of the ideological categories has set in. After all, it is only seven years since the death of Stalin released the Soviet managerial community from its stultifying bondage, seven years during which truly remarkable changes,