

## Correcting the urban-rural imbalance

For half a century, a mass exodus from the American countryside has been changing the average citizen's way of life. Three-quarters of the American people now live in major cities or their suburbs, and as they migrated, they encountered increasing difficulty in adjusting to their new lifestyle. Energy use became concentrated in smaller and smaller areas, causing pollution. Crime proliferated in crowded slums. Racial and ethnic conflicts increased as poorly educated farm workers swelled the ranks of the urban unemployed. Now some scientists and government planners believe that modern communication systems and technology may accelerate the reversal of the rural-urban migration, and that decaying cities and withering villages alike may be revitalized. The trend may already have started (SN: 1/19/74, p. 36 and 7/27/74, p. 56).

Speaking to the autumn meeting of the National Academy of Engineering last week in Washington, Peter C. Goldmark of the Goldmark Communications Corp. reported on progress in his Government-financed study of the causes of urban migration and possible ways of stemming the tide. Goldmark, a pioneering inventor and innovator in communications technology, has long been a proponent of use of advanced communications to help people live away from cities.

Humans are just not ready to live in crowded conditions, Goldmark concludes, as witnessed by the 10 times higher incidence of robbery per capita in a city of one million than in a town of 10,000. To avoid the problems of the inner city, many people have moved to the suburbs, but this raises new problems: Some 54 percent of the nation's consumption of gasoline now goes into daily job commuting.

Recognition of this problem is, of course, not new. State and city governments are open to innovative ideas on how to solve their problems, Goldmark says. More than half the people in the urban environment say they would prefer to live in the country if they could. The question is how to provide the opportunity. Goldmark lists five barriers, drawn from studies of what rural people complain about when asked to describe their living conditions and what city dwellers say they would need if they were to move back to the countryside: lack of jobs in small towns and on the farm; inadequate health care (2.5 doctors in general practice for each 100,000 population in rural areas); poor educational facilities, especially for adults; limited cultural and recreational facilities, and scarce oppor-

tunities for relating to people with similar interests.

In each of these areas, Goldmark says, improved communications and transportation can play an important role. A pilot project in Connecticut demonstrated that many business meetings can be conducted using telecommunications, saving time and expense for all concerned. Commuting would be decreased if people could live closer to their jobs in smaller communities. Rapid data transfer and improved transportation of goods would decrease the necessity of concentrating various industries into one congested area.

The task will be enormous. Goldmark says that to regain a half-and-half split between rural and urban populations, some 80 million people must be provided improved living conditions in the country. The burden, he says, will fall on state governments, with the Federal Government leading the way by retraining people for new jobs and encouraging better medical care and education in rural areas. Meanwhile, businessmen must become convinced that new technology makes possible the opportunity to make a profit away

from cities.

To help, a major new development in transportation is taking place, according to Robert H. Cannon Jr. of the California Institute of Technology, who told the NAE engineers of progress in automating and coordinating various transportation links, using computers. The biggest problem now in transporting people and goods, he said, is the loss of time during connections—say between plane and truck. Wider automation of routing and handling, he predicts, could provide the key to decentralizing the population.

The process is already beginning. The white square with multicolored lines one sees appearing on the side of railroad cars is part of a visual survey system and computer inventory. Before, a rail car could be lost for weeks with no one really knowing where it was. The next step will be coordination of rail and truck shipments—reserving enough trucks to distribute freight quickly around a local area when a train arrives.

Rather than concentrating on building new kinds of trains or autos, Cannon believes transportation can be improved by adopting a systems approach to make existing units more productive. □

## Westar II joins domestic talksat force

And then there were two. The second U.S. domestic commercial communications satellite, Westar II, was hurled into orbit Oct. 9, completing the initial phase of the Western Union-operated network that began with the April 13 launch of Westar I (SN: 4/27/74, p. 269). Six days later, the British-U.S. cooperative UK-5 satellite was lofted to give astronomers a wide-ranging look at the X-ray sky.

Identical to its predecessor, which is stationed in synchronous orbit just west of the Galapagos Islands, Westar II will be moved until it is over the equator south of Los Angeles. Two months later, after it has been checked out, it will be available to relay more than a dozen color television channels or 14,400 one-way telephone messages through five ground stations near New York, Atlanta, Chicago, Dallas and Los Angeles.

The Westars are the U.S. domestic equivalent of the Intelsat satellites, which provide international communications under the multinational COMSAT consortium. The Soviet Union's domestic Orbita network is already a decade old, while Japan, India, Indonesia, Saudi Arabia and other countries are now investigating the possibility of "talksats" of their own.

Last week's launch also confirmed

the performance of the Delta rocket that did the job, a former "old reliable" that became the subject of investigations and modifications following difficulties with the two previous Delta launches, including that of the Synchronous Meteorological Satellite (SN: 5/25/74, p. 332). Changes have been made in the venerable booster's design and hardware, as well as in management and quality control. More than 100 of the workhorse rockets have now been launched, and the latest, says NASA Delta manager Peter Eaton, performed "swimmingly." The next Delta task will be a first for the breed: a three-in-one launch, now scheduled for Oct. 29. Besides the fourth in the ITOS weather satellite series, Delta No. 104 will be carrying the first Spanish satellite (an ionospheric probe called INTASAT, intended to beam data to 30 to 40 experimenters around the world) and OSCAR-B, a communications satellite designed by, and exclusively for, amateur radio operators.

On Oct. 15, an important non-Delta launch (it used the much smaller Scout) carried the UK-5 X-ray sky-watcher into space from the San Marco launch platform off the Kenyan coast (SN: 10/5/74, p. 214), including a scanner that will show the entire X-ray sky every time the satellite turns. □