



UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

GGD-76-84

4-30-76

093751

GENERAL GOVERNMENT
DIVISION

B-114874

APR 30 1976

111 The Honorable Robert Dole
United States Senate

R

Dear Senator Dole:

This report is in response to your February 11, 1976, request that we examine a study entitled "Analysis of a U.S. Postal Service Facility's Contract Routes (Topeka, Kansas)." The study, conducted by Dr. Leonard W. Schruben and Mr. Dennis R. Schmidt, maintains that the U.S. Postal Service could save millions of dollars annually on contracted mail delivery services by using computer-designed vehicle routes and schedules. 52

In July 1974, and again in November 1975, we reported to the Service that savings could be realized through improved scheduling of contracted mail delivery routes. We believe that the concept of computer-designed routes is feasible and could assist in lowering transportation costs. The Service has also recognized computer assistance as a means of reducing its costs.

Several years ago the Service began studying the feasibility of computer-designed vehicle routes and schedules. Today, the Service is testing a program virtually identical in concept to the Topeka study in that both propose using computer assistance.

Until recently, Service headquarters officials were not aware of the Topeka study. However, they stated they intend to determine if the study could contribute to their own efforts.

POTENTIAL FOR SAVINGS
IN VEHICLE ROUTING

The Service uses contracted vehicle service as one means to transport the mail between postal and private facilities. The majority of the contracts, referred to as star routes, are for moving mail between cities and between

~~707346~~
093751

post offices. There are presently about 12,000 star route contracts throughout the country totaling approximately \$315 million.

Although star routes are only one of the ways used to move mail, they represent a major logistical effort for the Service. Further complicating this logistical effort are the ever-changing mail volume patterns and pick up and delivery points. Presently, star route design and scheduling are performed manually by Service personnel.

In the past, we reviewed the Service's star route contracting activities. In July 1974, we advised Service officials that existing star route procedures were not promptly identifying opportunities to improve the routing of star route vehicles. Based on our recommendations, the Service took a number of actions to economize on star routes. In a November 1975 follow-up report, we noted that questionable transportation procedures still remained and significant potential for transportation savings existed.

COMPUTERIZED ROUTING IS FEASIBLE

Several years ago the Service began studying the feasibility of using computers in the routing and scheduling of vehicles. Two major efforts currently underway are the Automated Vehicle Scheduling program and the Star Route Simulator program.

The Automated Vehicle Scheduling system consists of computerized programs used in the design of schedules for postal owned and operated vehicles in the intra-city transport of mail. The system uses basically the same kind of data an experienced vehicle operations manager would use to construct schedules manually. Using the computer, however, provides for a more timely evaluation of many different factors than would be possible using manual methods. A basic objective is to create driver schedules which will efficiently use a driver's time. Service officials stated Automated Vehicle Scheduling has been implemented in 15 cities at an estimated annual savings of \$3.5 million. Postal officials estimated that Automated Vehicle Scheduling could be used in approximately 30 cities by the end of fiscal year 1977.

The Star Route Simulator was developed by the Service to help transportation analysts achieve more efficient star routes. This computerized system enables the analyst to consider and test more transportation route structures than could readily be performed manually. Although both computer programs use the same concept, computerized star routes are easier to construct primarily because operating constraints embodied in postal labor policies do not have to be considered. The Star Route Simulator has been field tested in several locations and is currently undergoing the final phase of a field test in a Chicago sectional center facility. Service officials believe this facility should realize savings of approximately \$100,000 annually using the Star Route Simulator. They estimate that computer-assisted designs will save 1 to 2 percent of the total annual costs of star route contracts.

APPLICABILITY OF STUDY FINDINGS

It appears that the Topeka study has paralleled the work of the Service. Although the Topeka study and the Service's Star Route Simulator both propose using computer assistance for improving star routes, these efforts were pursued independent of each other. Service headquarters officials stated they were not aware of the Topeka study until January 1976.

These officials agree with the authors of the study that computer-assisted design and scheduling can reduce star route transportation costs. However, a preliminary analysis of the study raised questions about some pertinent factors such as total data collection costs and the impact star route changes would have on various postal programs which affect mail flow.

Headquarters officials intend to further analyze the study and discuss their findings with the authors. A letter has been sent to Dr. Schruben and Mr. Schmidt to this effect. A postal official explained this was being done to determine whether their efforts could contribute to improving star routes.

- - - -

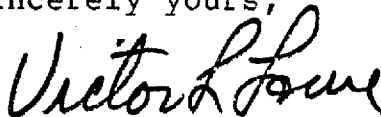
We believe that computer assistance is proving to be a valuable tool in Service efforts to optimize star route scheduling and design. The Service's current success with

B-114874

computer-assisted route design and scheduling for postal-owned vehicles supports this contention. The full impact that computerized star routing will have on costs cannot be determined at this time; however, we will continue to monitor the Service's efforts.

If we can be of further assistance, please let us know.

Sincerely yours,

A handwritten signature in cursive script that reads "Victor L. Lowe".

Victor L. Lowe
Director